Varazdin Development and Entrepreneurship Agency and **University North**
in cooperation with
Chelyabinsk State University
Faculty of Management University of Warsaw
Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat
Polytechnic of Medimurje in Cakovec

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50th International Scientific Conference on Economic and Social Development Development

Book of Proceedings

Editors:
Diana Tsiring, Victor Beker, Miroslaw Przygoda

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DEVELOPING THE METHODOLOGY OF A MUNICIPAL FORESIGHT: NEW OPPORTUNITIES FOR BETTER RESULTS

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ABSTRACT

Foresight is used as a technology enabling to forecast a long-term future and the general vector of its development in the process of the strategic planning of socio-economic systems development which are industries, sectors and places. It results in some specific products such as forecasts, predictions and roadmaps which could be used at the stage of goal-setting. At the sub-regional level, foresight can have additional benefits for some municipal entities as it may be used as group-working technology that may help to consolidate the efforts of its participants in shaping a desirable vision for the future, rally local residents around the pipeline projects, create new social networks. However, the achievement of the above stated effects is hampered by the dearth of research and no methodology for the municipal foresight. Accordingly, the proposed research is aimed at filling this gap and present the authors' methodology of the municipal foresight and discuss its main results based upon the practice of its use at the sub-regional level in the Samara Region of the Russian Federation.

Keywords: *foresight, municipal area, project, roadmap, strategic planning*

1. INTRODUCTION

Foresight technologies have been used in the practice of grounding the development prospects of Russian regions relatively recently. There are quite rare examples of foresight at the municipal level: "The development foresight of the city of Cherepovets until 2020" (2010), the municipal foresight within the development of the Strategy for social and economic development of the city district of Samara until 2025 (2011), the foresight of the Solnechnogorsky municipal raion of the Moscow Region (2013). As for low populated municipal entities such as small towns and rural areas, foresight is either not used in the process of their strategic planning or replaced by local "brainstorming". Note that territorial foresights have not established as subjects for scientific research. In a theoretical aspect, most scientific publications have substantiated the role of territorial foresights and their opportunities within strategic planning (Lapygin et al., 2015). The paper summarizes the results of the research aimed at working out the authors' technology of a municipal foresight and analyzing the results of its implementation in the municipal raions of the Samara Region. The research was conducted by the authors in 2016-2018 and pursued two basic purposes. First, the technology of a municipal foresight has been worked out consisting of two stages: a "forward looking" foresight project and a "creative" foresight project. Second, the authors have made a detailed analysis of the results of validating this methodology in certain municipal raions of the Samara Region with a focus on the peculiarities of a creative stage. The Alexeyevsky, Bezenchuksky and Borsky municipal raions of the Samara Region have been chosen as the objects of the study.

The results of the study are aimed at local self-government authorities, the participants of foresight projects in Russian municipal entities and abroad – those who are involved in developing territorial (local) strategies of social and economic development.
all key players of strategic planning in Russian municipal areas.

2. STUDY METHODOLOGY

The issue of conducting foresight studies is covered in depth in academic publications by foreign researchers among whom we used the most well-known methodologies presented in the works by Miles I. and Keenan M. (Miles, 2002), Voros J. (Voros, 2003), Popper R. (Popper, 2008). A complex approach was developed by the Russian researchers in the methodology of Rapid Foresight (Rapid Foresight, 2017). The conceptual approach used by the authors of the paper in developing the given methodology implies that a municipal entity is a complex multi-aspect system. Being an object of strategic planning, a municipal entity is treated as a community, a living environment, an entrepreneur and an institute of municipal management. The given approach defines the organization of a territorial foresight and impacts all its results in the process of strategic planning. The technology of a municipal foresight worked out by the authors consists of two stages: a “forward looking” foresight project and a “creative” foresight project. The first stage - a “forward looking” foresight project – is based upon the results of the analytical stage of strategic planning and is preliminary to the results framework of a strategy. Panel discussions of the projected trends is used as the basis for grounding the strategic choice of a municipal development, and the vision of a future of a municipal raion and the basic directions of its strategic development are used while working out an "objective tree" of municipal strategy. The methodology for organizing the forecasting stage of a municipal foresight have been described in detail in the works by E.N. Koroleva, N.N. Evdokimov, A.A. Malyutina (Koroleva et al., 2012; Evdokimov, 2014, 2015). The roadmap technology as a procedure of strategic planning is used at this stage of a municipal foresight as a link between the present and the future of an object under analysis – municipal entities. The understanding of the present results from the analytical stage of strategy development and may be generalized in various forms (e.g. in a SWOT matrix). The future is primarily defined by the strategic focuses – the vision and the general goal of a municipal entity (Koroleva et al., 2012). The second stage – a “creative” foresight project – is aimed at producing new ideas concerning the future development of a municipal raion and implies developing projects and initiatives accomplishing the "objective tree" of a municipal strategy. Foresight has been proved to create a mechanism of harmonizing the interests of various stakeholders (Avtsinova et al., 2012). The main features of the stages in the proposed methodology of a municipal foresight are given in Table 1.

Table following on the next page

Table 1: The content and attributes of the stages of a municipal foresight

The stage of a municipal foresight	Forward-looking	Creative
Main objectives	Developing the vision of a municipal foresight, grounding growth points of a municipal entity, articulating the positions on promising directions of municipal development	Articulating the scenarios for municipal development, undertaking project initiatives, developing municipal projects, establishing a broader community, establishing a "team of changes" – municipal project leaders
Format	Panel discussions	Strategic sessions
Membership	Experts	Local community including stakeholders
Methods	Brainstorming, interview, questionnaire, SWOT-analysis, road mapping	Brainstorming, scenario seminars
The presentation of the results	Vision, list of growth points road maps	Development scenarios, municipal projects
Further use of the results	Defining the mission of a municipal entity, grounding the strategic choice of municipal development, developing the "goal tree" of a municipal strategy	Developing programs and projects to accomplish a municipal strategy

Source: worked out by the authors

3. RESULTS

Over 2016-2018, the authors have implemented complex foresight studies aimed at developing the directions and mechanisms of future development of the Alexeyevsky, Bezenchuksky and Borsky municipal raions of the Samara Region while providing scientific background and developing municipal strategies of these raions.

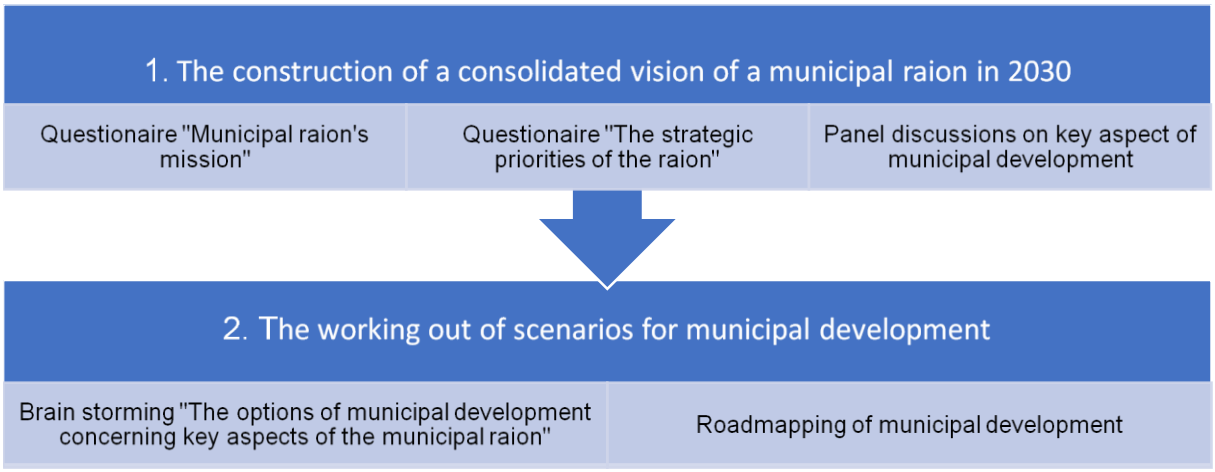
The results, organization and methodology of the implemented foresight projects at the territories of these municipal raions will be examined below in greater detail.

3.1. The forward-looking stage of a municipal foresight

The methodology of this stage implies the implementation of two sub-steps: the construction of a consolidated vision of municipal raions held by interviewing in the form of panel discussions and the working out of scenarios for municipal development on key aspects with the use of road mapping. The structure of the forward-looking stage of a municipal foresight in Fig. 1.

Figure following on the next page

Figure 1: The structure of the forward-looking stage of a municipal foresight



Source: worked out by the authors

The methodology of the first sub-step was realized in the format of two questionnaire procedures. The work of experts was organized in four groups: “Community”, “Living Environment”, “Entrepreneur”, “Institute of Municipal Development” thus reflecting the key areas of local life. As part of the preparatory phase to implementing the municipal foresight, the authors have developed the questionnaires common in their structure for the three municipal raions. The first questionnaire “Mission of a municipal raion” consists of three closed questions characterizing a consolidated vision of a certain municipal raion until 2030. As shown in table 2 reflecting the structure and content of the developed questionnaires, the options proposed to the experts are quite different as they suggest identifying case-specific missions of municipal raions, their strong points and main image peculiarities.

Table following on the next page

Table 2: The results of the questionnaire "The mission of a municipal raion"

Municipal raion	Question		
	1. The raion is … for you	2. Number the first three fortes of the raion:	3. Number the first three epithets describing your raion:
Alexeyevsky	A territory A municipal entity A local comunity An agroindustrial center	Natural and recreational wealth Civil activity of population Migration attractiveness Landscaped area Political stability Business appeal Security of residence Rich historical heritage	Hospitable Place of equal opportunities Ecologically clean Safe Open for partnership Fascinating Revealing human potential Faithful to traditions Harmonious Cozy
Bezenchuksky	A transport hub A municipal entity A local community An agroindustrial center	Transport accessibility Landscaped area Developed agriculture Civic activity Industrial potential Business attractiveness Natural and recreational wealth Attraction for living Tourist attraction	Regionally significant Hospitable Hardworking Harmonious Intelligent Competitive Reliable Revealing potential of the person Open for partnership Comfortable Creative Progressive
Borsky	A territory A municipal entity A local comunity An agrarian center	Developed agriculture Initiatives of the population Nature-recreational wealth Financial stability Tourist attraction Environmental situation Attractive for living Landscaped area	Harmonious Hospitable Hardworking Safe Sustainable Forest Traditional Comfortable Dimensioned Ecological

Source: worked out by the authors

The processing of questionnaires and ranking the options chosen by experts resulted in the formulation of the vision. Let us consider it on the example of the Bezenchuksky raion: "The Bezenchuksky raion is a regionally significant municipal entity, ready for partnership, populated with hard-working people, approachable for transport, having well-developed agriculture and being attractable for living". This consolidated vision of the municipal raion was used in its mission and general strategic goal. The second questionnaire procedure "The strategic priorities of the municipal raion" resulted in the ranking of experts' opinions on the strengths of municipal raions and their strategic resources. As in the case of the first questionnaire, the content of the answers to questions is determined by the results of the preliminary diagnostic analysis of factors and potentials for the development of territories, the analysis of their competitive advantages (SWOT- and STEP-analysis), the analysis of image factors affecting the investment attractiveness of municipal raions.

The first two significant characteristics obtained from the processing of questionnaires in each individual case are presented in Table 3.

Table 3: The results of ranking the strategic priorities in the municipal raions

Alekseyevsky municipal raion		Bezenchuksky municipal raion		Borsky municipal raion	
Position	points	Position	points	Position	points
Expert group "Society"					
boosting the number of young professionals	67	ensuring access to timely and quality medical care	42	consolidation of youth in rural settlements of the municipal raion	78
improvement of medical services	47	creation of conditions for the personal development of the able-bodied population	42	attraction of medical personnel to the municipal raion	64
Expert group "Living Environment"					
infrastructure development improvement	51	comprehensive upgrade and development of the engineering infrastructure network	44	major repairs and repairs of public roads of local importance	63
balanced spatial development of the raion	49	improvement and formation of comfortable urban and rural environment	40	sorting and processing of solid municipal waste	56
Expert group "Entrepreneur"					
livestock development	52	ensuring systemic and sustainable growth of agricultural output and quality	40	active attraction of investments in the region	63
development of production with deep recycling	40	small business development and support of individual business initiative	35	promotion of production of ecological agricultural products	47
Expert group "Institute of Local Self-Government"					
increase efficient use of the municipal property	53	optimization of the system of attraction and absorption of funds of budgetary transfers	42	improving the efficiency of municipal property use	68
development of intermunicipal cooperation	31	improving the efficiency of municipal property use	35	optimization of the system of attraction and absorption of funds of budgetary transfers	43

Source: worked out by the authors

Data on the "growth points" of municipal raions were further used by working groups of experts while working out the fragments of road maps for the development of municipalities until 2030. Subsequently, each group, for the purpose of developing its road map, concretized the overall vision of the municipal district. Organizationally, the procedure of road mapping was carried out in expert groups in the format of a business game and moderated by the authors of the article in the field of teaching road mapping technologies. The results obtained by the experts during the road mapping procedure should be considered satisfactory, since they comply with all the basic principles of road mapping: The key objectives to be achieved in the course of the road map implementation are identified, and the main actions to be taken to ensure the transition from the present to the future are worked out.

Thus, the results of the first forward-looking stage of the municipal foresight enabled to formulate a vision of the social and economic development of the territory, to set a vector of the future development of the municipal entity.

3.2. The creative stage of a municipal foresight

The second stage of the municipal foresight – the creative foresight-project – presupposed an expanded membership of the participants, including "external" experts of the regional level in relation to the municipal entity – the representatives of executive authorities and public organizations of the Samara region. This foresight project was aimed at involving local community into the process of strategic planning, articulation of municipal development scenarios by its participants, the working out of project initiatives, the generation of municipal projects. It should be noted that the implementation of this stage of the municipal foresight in the Alekseyevsky, Bezenchuksky and Borsky municipal raions coincided with the development of a strategic document of the regional level - the Plan of actions for the implementation of the Strategy for social and economic development of the Samara region until 2030 [1]. The main format of the work of this foresight-project is the strategic session as a form of group work aimed at joint development of strategically significant decisions at the municipal level involving key groups of stakeholders of the territory. Unlike the first foresight project, aimed mainly at providing a consolidated vision regarding the future of the municipal raion and developing the strategic goals of its development, the creative stage of the municipal foresight assumes the filling of strategic goals with concrete initiatives and projects for their implementation. From 100 to 120 main stakeholders of the territory as well as 10-15 representatives of key ministries and public organizations of the Samara region took part in the work of strategic sessions in each municipal raion. As the practice of such sessions has shown, three main types of projects have been generated within the framework of the public event:

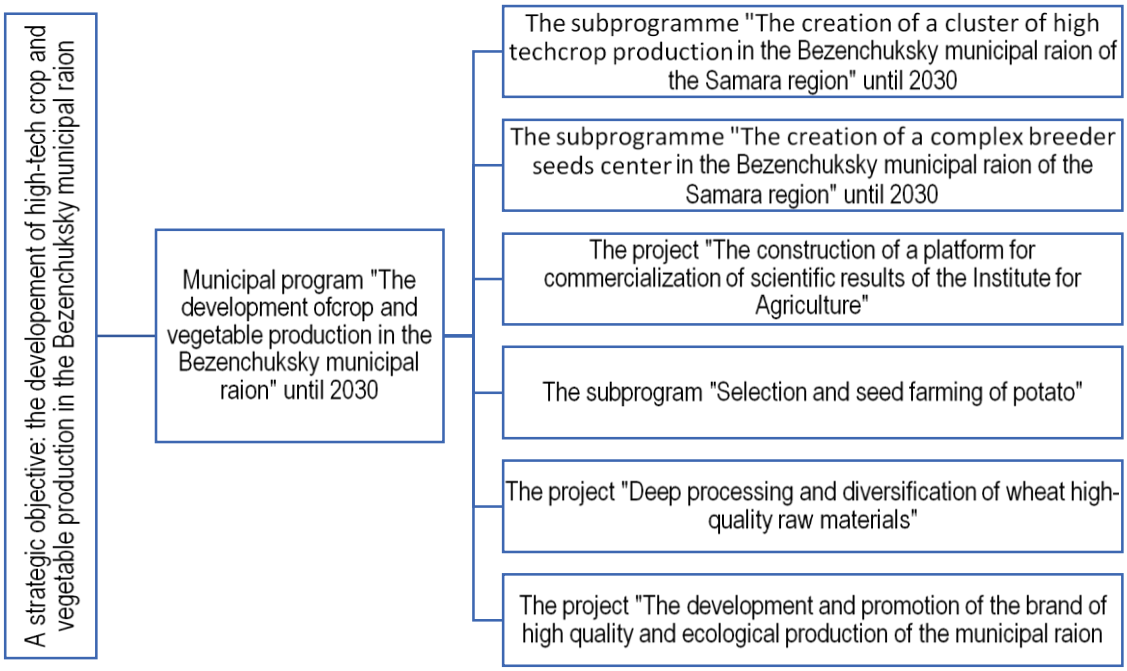
- key municipal projects that meet the territorial specialization and regional development goals, the scale of which allows them to be included in the plan of activities for the implementation of the regional strategy;
- local level projects that meet strategic goals of intra-regional development;
- non-strategic initiatives that do not require significant investments, consolidation of interests on realization of which has been revealed and achieved by methods of facilitation used by moderators of strategic sessions – the authors of this paper.

The organization of a strategic session as a form of foresight involves not only brainstorming methods aimed at the generation of municipal projects, but also expert consultations carried out by the executive and municipal authorities on the possibilities of realizing the social or entrepreneurial potential of the foresight participants in each particular municipality. The methods used during the creative stage of the municipal foresight were also aimed at discussing the strategic goals of the territorial development of higher levels - national and regional - and the possibilities for their realization at the local level. For example, the priority directions of digitization of the Russian economy in the context of municipal development were specified and associated with the tasks of creating a telecommunications infrastructure, improving the quality and accessibility of municipal services. Thus, in municipal raions, a number of "digital" projects were also generated: e.g., the introduction of new digital technologies into housing and communal services systems, the landscaping of the territory, the creation of a municipal tourist system (municipal tourist portal, interactive map of walks), etc. We will separately highlight the results of the creative stage of the municipal foresight in the Bezenchuksky municipal raion where the implementation of the foresight technology enabled to generate projects within the

[1] Retrieved 01.11.2019 from URL: https://economy.samregion.ru/upload/iblock/95e/Plan-meropriyatiy.pdf.

most promising directions of municipal development on the basis of interaction of representatives of business structures, scientific organizations, municipal authorities, the local community. On the territory of this highly urbanized municipality (49% of the population of the raion belongs to the city) of an agro-industrial specialization there is a large state scientific institution - the Samara Scientific Research Institute of Agriculture named after N.M. Tulaykov. The involvement of scientists of this scientific institution as participants of the municipal foresight has made it possible to develop a number of projects that use the potential of science in the process of strategic development of the agricultural sector in the municipal raion (see Fig. 2).

Figure 2: A fragment of the program-project mechanism of accomplishing the strategy of social and economic development of the Bezenchuksky municipal raion of the Samara region until 2030 within the direction of "Municipal raion – entrepreneur"



Source: worked out by the authors

Another significant result of the implementation of this stage of the municipal foresight was the acquisition by the public of knowledge and competence on the generation of social projects and technologies for social design, the possibilities of their support at the regional and municipal levels, the criteria for evaluating socially significant projects.

4. CONCLUSION

In the research, the foresight methodology was used to determine the key directions of municipal socio-economic development in general and the most significant ones of its spheres. The generalization of practical experience of implementing the author's methodology of a two-stage municipal foresight in the Alekseyevsky, Bezenchuksky and Borsky municipal raions resulted in the formulation of some specific features of the foresight-projects at the local level:

1) The implementation of the municipal foresight involves three sections: defining the strategic vector of municipal development within the framework of strategic goals of the higher level – national and regional, directions of municipal specialization in various spheres and the development of specific local spheres of activity. The results obtained can be used both in the framework of the municipal strategy process and in the development of strategic documents of the regional level.

2) The activity carried out within the municipal foresight is aimed at not only the result, but also at the process. In this aspect, it has a learning character, as it expands the competence and outlook of participants, disseminates a culture of strategic thinking and forecasting the social consequences of the decisions taken.
3) Being an instrument of not only predicting the future but also influencing it, the municipal foresight is an effective instrument of public participation in the development of the territory, setting goals and implementing project initiatives of the local level.
4) One of the important appointments of municipal foresight projects is to reach agreement between their main participants in the process of strategic choice, to develop common ideas about the future of the municipality as a whole and its individual spheres. Foresight projects of the local level serve to develop the experience of multilateral cooperation of the public, business and local self-government bodies (Kurnikova, 2019).
5) The methodology of municipal foresight projects proposed by the authors can be used within the arsenal of instruments for realizing "smart specialization" at the subregional and regional levels. The intersectoral cooperation contributes to the generation of ideas and new opportunities for the innovative activities within the strategies based on the principles of broad community participation.

The experience gained by the authors while implementing municipal foresight projects will be further used in carrying out the researches within the given subject. Taking into account the small amount of information on the practice of using foresight technology as a tool of municipal strategic planning, this material may be of interest to the participants of foresight projects in Russian municipalities as well as any other states actively involved into developing strategies at the local level of territorial management.

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AN EMPIRICAL STUDY OF ECONOMIC ACTIVITY OF THE RUSSIAN REGIONS

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ABSTRACT

The article is devoted to the study of the economic activity of the Russian regions. The analysis of the industrial production, investment and labor resources distribution is carried out using the concentration and specialization indices Herfindahl-Hirschman and Krugman. An increase in the investments and industrial production concentration by type of economic activity was revealed. A high concentration in the extraction of minerals, the extraction of fuel and energy minerals, the processing of wood and the manufacture of wood products, and the metallurgical and finished metal products have been identified.

Keywords: *new economic geography, concentration of economic activity, regions of Russia*

1. INTRODUCTION

The study of the trends in the economic activity of the Russian regions, the processes of economic activity concentration and agglomeration, changes in the regional specialization allows for a regional policy aimed at increasing the well-being of citizens. Russia inherited from the Soviet Union a peculiar model of the territorial distribution of production factors. The focus on maximizing economies of scale and uniform spatial development in the planned economy of the Soviet Union led to an increase in the size of enterprises and over-specialized areas. The territorial production complexes of the Soviet Union strengthened the advantages of inter-industry cooperation, but weakened the positive effects of intra-industry relations, typical

for countries with market economies. The problem of polarization in the development of the country's regions is characteristic of economic systems with a high level of initial heterogeneity of the economic space. Experience, for example, of the People's Republic of China, is empirical evidence of the validity of this assumption: the effects of the country's integration into the global economy are accumulated mainly in coastal provinces. The best theoretical basis for understanding spatial development is provided by the new economic geography formed by the works of P. Krugman, M. Fujita, A.J. Venables (Fujita, 2010; 2012; Fujita & Hu, 2001; Fujita & Krugman, 2004; Fujita & Thisse, 2003; 2009; Krugman, 1991; 2007; 2009; 2011a; b) and other researchers. The issues of the productive forces distribution are relevant, since resources tend to move to regions with a higher production concentration, which increases regional inequality (Rastvortseva, 2013), the development of the region is affected by its location relative to the national border (Rastvortseva & Usmanov, 2015), and economic growth tends to spread beyond the borders of the region (Kolomak, 2010; 2014). The productive forces distribution in the region is described by the level of concentration, agglomeration and specialization. Concentration is determined in relation to the type of economic activity, industrial group and means the degree of economic activity type concentration within the territory, while agglomeration characterizes the placement of completely different types of economic activity in the general territory. The region's specialization describes the degree of dominance of any type of economic activity (Rastvortseva, 2018). The aim of the study is to analyze the concentration and specialization of the Russian regions. For this, we use P. Krugman indices: the concentration index by certain types of economic activity in the economy (KDI^C) and the regional specialization index (KDI^S), reflecting the heterogeneity of development.

2. DATA AND METHODS

The information base of the study covers 83 regions of Russia. The Republic of Crimea and the city of Sevastopol were not included in the study of economic activity of the regions due to insufficient statistical data. Autonomous districts were accounted for as separate sub-entities of the federation. The dynamics of economic activities concentration in the regions of Russia according to the Herfindahl-Hirschman index was determined for the period from 1998 to 2018. A study of the geographical concentration of industrial production by type of economic activity on the Krugman heterogeneity index was carried out for the period from 2007 to 2018. The study used official data from the Federal State Statistics Service of Russia.

3. METHODS OR MODEL

We can use several indicators to investigate the placement of economic activities in the regions of Russia. For example, a traditional localization indicator:

$$LQ = \frac{E_{ij}}{E_i} \Big/ \frac{E_j}{E} = \frac{E_{ij}}{E_j} \Big/ \frac{E_i}{E}, \quad \textbf{(1)}$$

Where: LQ – localization coefficient;
E_{ij} – goods and services output by j-th type of economic activity in i-th region;
E_i – goods and services output in i-th region;
E_j – goods and services output by j-th type of economic activity;
E – total goods and services output in the country.

The localisation factor LQ shows how many times the concentration i-th type of the economic activity exceeds the national average. The factor is used to formulate and implement regional

economic policies. For example, the authers of research paper (Rastvortseva & Cherepovskaya, 2013) proposed a technique using localization factor that allows to identify potential clusters. The factor is calculated not only by the volume of goods and services output, but also by the average annual employment in the branch of economy and the fixed investment. Another tool for analysing the economic activity of regions is the Herfindahl-Hirschman index (HHI) (Herfindahl, 1950; Hirschman, 1945). The indicator is used to estimate geographical concentration (HHI^C) and regional specialization (HHI^S):

$$HHI_j^C = \sum_{i=1}^{n} \left(\frac{E_{ij}}{E_j} \right)^2 , \quad \textbf{(2)}$$

$$HHI_i^S = \sum_{j=1}^{m} \left(\frac{E_{ij}}{E_i} \right)^2 , \quad \textbf{(3)}$$

Where: E_{ij} – goods and services output by j-th type of economic activity in i-th region;
E_i – goods and services output in i-th region;
E_j – goods and services output by j-th type of economic activity;
E – total goods and services output in the country.

The Herfindahl-Hirschmann index (HHI) acts as an absolute measure of concentration. The indicator increases with increasing degree of concentration, reaching a value of *1* in the case where the j-th type of economic activity is concentrated in one region or the i-th region specializes in only one type of economic activity. This indicator has a disadvantage. Regions with large specific weight fluence on changes in concentration - the index shifts towards large regions. The disadvantage of the index is the sensitivity of its lower limit to the number of observations. The low concentration is $1/n$ when all regions have equal shares in j-th type of the economic activity and the lowest specialization is $1/m$ when all economic activities have equal shares in the i-th region. The Krugman heterogeneity index (KDI) is a relative measure of concentration or specialization (Krugman, 1991). The indicator estimates the concentration by separate type of economic activity (KDI^C) and specialization by regions (KDI^S):

$$KDI_j^C = \sum_{i=1}^{n} \left| \frac{E_{ij}}{E_j} - \frac{E_i}{E} \right| , \quad \textbf{(4)}$$

$$KDI_i^S = \sum_{j=1}^{m} \left| \frac{E_{ij}}{E_i} - \frac{E_j}{E} \right| , \quad \textbf{(5)}$$

$$0 \le KDS \le 2 , \quad \textbf{(6)}$$

Where: E_{ij} – goods and services output by j-th type of economic activity in i-th region;
E_i – goods and services output in i-th region;
E_j – goods and services output by j-th type of economic activity;
E – total goods and services output in the country.

The Krugman heterogeneity index (KDI) is used to compare a region or type of economic activity with the national economy as a whole. An index value of *0* indicates homogeneity of

the structure, and an index value of *2* indicates non-uniform structures. The concentration indices (CR_3, CR_4) show how much goods and services output in the industrial sector is concentrated in the three, four largest regions:

$$CR_j^3 = \sum_{i=1}^{3} \frac{E_{ij}}{E_j}, \quad \textbf{(7)}$$

$$CR_j^4 = \sum_{i=1}^{4} \frac{E_{ij}}{E_j}, \quad \textbf{(8)}$$

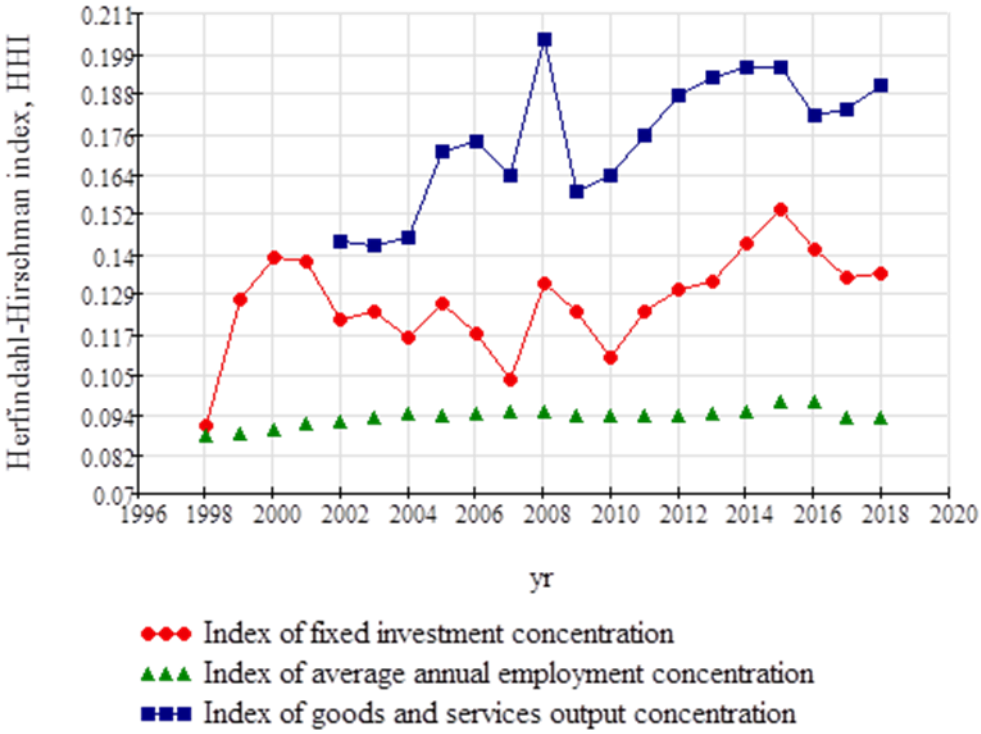
Where: E_{ij} – goods and services output by j-th type of economic activity in i-th region;
E_j – goods and services output by j-th type of economic activity.

4. RESULTS

We conducted a study of the Herfindahl-Hirschman index dynamics on three indicators: 1) fixed investment in constant prices of 2000 by type of economic activity; 2) average annual employment by type of economic activity; 3) volume of goods and services output in constant prices of 2000 by types of economic activity. The largest degree of concentration of economic activities in the economies of Russia is the volume of goods and services output. The concentration of goods and services output in constant prices of 2000 by type of economic activity for the period from 2002 to 2010 was 0.163 and for the period from 2011 to 2018 – 0.187. The concentration of fixed investments by type of economic activity in constant prices of 2000 for the period from 2000 to 2012 was 0.123, for the period from 2013 to 2018 – 0.140. The concentration of average annual employment by type of economic activity in the Russian economy for the period from 1998 to 2018 was 0.093 (Figure 1). We conducted a study of certain types economic activities concentration dynamics in the Russian economy for the period from 2007 to 2018. The study based on the economic activities included in the sections "Mining", "Manufacturing", "Production and distribution of electricity, gas and water" of the Russian Classification of Economic Activities RC 029-2007 (NACE Rev.1.1). Data of 2017 and 2018 were converted to the Russian Classification of Economic Activities RCEA codes RC 029-2007 (NACE Rev.1.1) from RC 029-2014 (NACE Rev.2).

Figure following on the next page

Figure 1: Indices of concentration



a) fixed capital investments, b) average annual employment, c) goods and services output by types of economic activity in Russia

Table 1: *Estimation of certain economic activities concentration in the Russian economy (2007 – 2018)*

Group	KDI^C	$\overline{KDI^C}$	Types of economic activity
1	0.385 – 0.617	0.408	EA.
2	0.618 – 0.849	0.733	DA; DB; DC; DI; DK; DL; DM; DN.
3	0.850 – 1.081	0.928	CA; DD; DE; DF; DG; DH; DJ.
4	1.082 – 1.313	1.310	CB.

Note: RCEA codes RC 029-2007 are used (NACE Rev. 1.1)

C – mining: CA – extraction of fuel and energy minerals; CB – mining other than fuel and energy. D – manufacturing: DA – production of food products, including beverages, and tobacco; DB – textile and garment manufacturing; DC – leather production, leather products and footwear production; DD – wood processing and wood products production; DE – pulp and paper production; DF – production of coke, petroleum products and nuclear materials; DG – chemical production; DH – production of rubber and plastic products; DI – production of other non-metallic mineral products; DJ – metallurgical production and production of finished metal products; DK – machinery and equipment production; DL – production of electrical, electronic and optical equipment; DM – manufacture of vehicles and equipment; DN – other production; EA – generation and distribution of electricity, gas and water.

We conducted a study of the dynamics of certain types of economic activities concentration in the Russian economy for the period from 2007 to 2018. A high spatial concentration of mining (other than fuel and energy) and a low concentration of electricity, gas and water production and distribution were identified (Table 1).

We conducted a study of the dynamics of regional specialization in the Russian economy for the period from 2007 to 2018. Regions with high specialization from 1.156 to 1.373 were identified, as well as regions with low specialization from 0.505 to 0.722 (Table 2).

Table 2: Assessment of regional specialization in the Russian economy (2007 – 2018)

Group	KDI^S	Region
1	0.505 – 0.722 $\overline{KDI^S}$ = 0.631 (21 regions)	Ryazan region; Yaroslavl region; Moscow; St. Petersburg; Astrakhan region; Volgograd region; Rostov region; Republic of Bashkortostan; Republic of Mari El; Republic of Tatarstan; Udmurt Republic; Chuvash Republic; Perm region; Nizhny Novgorod region; Samara region; Saratov region; Altai region; Irkutsk region; Kemerovo region; Novosibirsk region; Tomsk region.
2	0.722 – 0.939 $\overline{KDI^S}$ = 0.815 (30 regions)	Bryansk region; Vladimir region; Voronezh region; Ivanovo region; Kaluga region; Kostroma region; Kursk region; Moscow region; Oryol region; Smolensk region; Tambov region; Tver region; Tula region; Republic of Komi; Leningrad region; Novgorod region; Republic of Kalmykia; Republic of Karachay-Cherkess; Krasnodar region; Republic of Mordovia; Kirov region; Orenburg region; Penza region; Ulyanovsk region; **Kurgan region; Sverdlovsk region; Chelyabinsk region;** Republic of Khakassia; Krasnoyarsk region; Khabarovsk region.
3	0.939 – 1.156 $\overline{KDI^S}$ = 1.027 (23 regions)	Belgorod region; Lipetsk region; Arkhangelsk region; Vologda region; Kaliningrad region; Murmansk region; Pskov region; Republic of Adygea; Republic of Dagestan; Republic of Ingushetia; Kabardino-Balkar Republic; Republic of North Ossetia – Alania; Chechen Republic; Stavropol region; **Tyumen region**; Altai Republic; Republic of Buryatia; Republic of Tyva; Zabaykalsky region; Omsk region; Primorsky region; Amur region; Jewish autonomous region.
4	1.156 – 1.373 $\overline{KDI^S}$ = 1.274 (9 regions)	Republic of Karelia; Nenets autonomous district; **Khanty-Mansi autonomous district - Ugra; Yamalo-Nenets autonomous district;** Sakha (Yakutia) Republic; Kamchatka region; Magadan region; Sakhalin region; Chukotka autonomous district.

For example, the average index of Kurgan region specialization is 0.553, Sverdlovsk region – 0.697, Chelyabinsk region – 0.710, the Tyumen region – 0.870, Khanty-Mansi and Yamalo-Nenets autonomous districts – 0.924 and 0.939 respectively (Table 3).

Table following on the next page

Table 3: Assessment of the Ural Federal District specialization (2007 – 2018)

Region	$\overline{CR_3}$	including		
		1	2	3
Kurgan region	0.553	DM	DJ	EA
Sverdlovsk region	0.697	DJ	EA	CB
Khanty-Mansi autonomous district – Ugra	0.924	DF	EA	DI
Yamalo-Nenets autonomous district	0.939	CA	EA	DF
Tyumen region	0.870	CA	DF	EA
Chelyabinsk region	0.710	DJ	EA	DA
Ural Federal district	0.778	CA	DJ	DF
Russian Federation	0.495	CA	DF	DA

Note: RCEA codes RC 029-2007 are used (NACE Rev. 1.1)
C – mining: CA – extraction of fuel and energy minerals; CB – mining other than fuel and energy. D – manufacturing: DA – production of food products, including beverages, and tobacco; DF – production of coke, petroleum products and nuclear materials; DI – production of other non-metallic mineral products; DJ – metallurgical production and production of finished metal products; DM – manufacture of vehicles and equipment; EA – generation and distribution of electricity, gas and water.

Thus, high specialization in a certain type of economic activity can afford regions that provide their development through extractive production, in other cases – high regional specialization is inefficient (Rastvortseva & Kuga, 2012).

5. CONCLUSIONS

To study the economic activity of the regions in the Russian economy, the concentration indicators of Herfindahl-Hirschman and Krugman were used. A high concentration of goods and services output, fixed investments by type of economic activity for the period from 2002 to 2018 was revealed. The tendency to concentration is defined in mining, extraction of fuel and energy minerals, wood processing and production of wood products, and metallurgical production and production of finished metal products. Regions with a high level of specialization include Nenets, Khanty-Mansi, Yamalo-Nenets and Chukotka autonomous districts, Kamchatka region, Magadan and Sakhalin regions, the Republic of Karelia. The obtained results can be used in further research of spatial development of Russian macroregions, estimation of agglomeration processes development, when concentration in regions is observed for several types of economic activity.

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REACTIVE AND PROACTIVE APPROACHES IN THE STUDY OF THE CAUSES OF RUSSIAN COMPANIES BANKRUPTCY

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ABSTRACT

High proportion of economic entities bankruptcies is a feature of the modern Russian economy. The aim of the study is to confirm with statistical methods the existing expert opinion that companies bankruptcy is to a great extent caused by unfair actions of top management or owners aimed at achieving insolvency. The objectives of the study is to identify the limitations of the reactive approach in detecting the signs of companies deliberate bankruptcy (withholding of the information by unfair debtors, methodological shortcomings) and the development of a proactive approach, namely the justification of the differentiation of economic entities behaviour types, allowing to differentiate between real and deliberate bankruptcy, through the study of the qualitative features of the actions' intentionality in case of economic entity bankruptcy that allows external stakeholders to proactively identify unfair debtors; development of stages of the statistical information approach to the detection of companies deliberate bankruptcy. In the reactive and proactive approaches to the identification of companies deliberate bankruptcy the following general scientific methods were used: dialectical method, methods of analysis and synthesis, induction and deduction, modelling, and special methods of financial management (structural and dynamic analysis; analysis of financial ratios; integrated financial analysis), statistical methods (qualitative statistical methods of the study of homogeneous populations; correlation and regression analysis; time series analysis; building probabilistic models). As the result of the study, the concept of deliberate bankruptcy of economic entities is defined from the position of external stakeholders' proactive approach to detect the signs of unfair debtors. A proactive dynamic statistical and information approach to the detection of deliberate bankruptcy of economic entities is proposed. The results of the detection of deliberate bankruptcy of economic entities in accordance with the proposed approach allow us to confirm the expert opinion of the legal regulation authorities, dealing with issues of companies bankruptcy.

Keywords: *bankruptcy of Russian companies, reactive and proactive detection of deliberate bankruptcy signs*

1. INTRODUCTION

National projects and programs - actively implemented in Russia - including the support for domestic producers and business development, do not ensure the required pace of development: the Russian economy is characterized by high quantitative indicators' values of bankrupt companies. The analysis of the materials of the Unified Federal Register of Legally Significant Information on the Legal Entities' Activities, Individual Entrepreneurs and Other Economic Entities (hereinafter "Fedresurs") indicates an increase in the number of bankruptcies by 7.7%

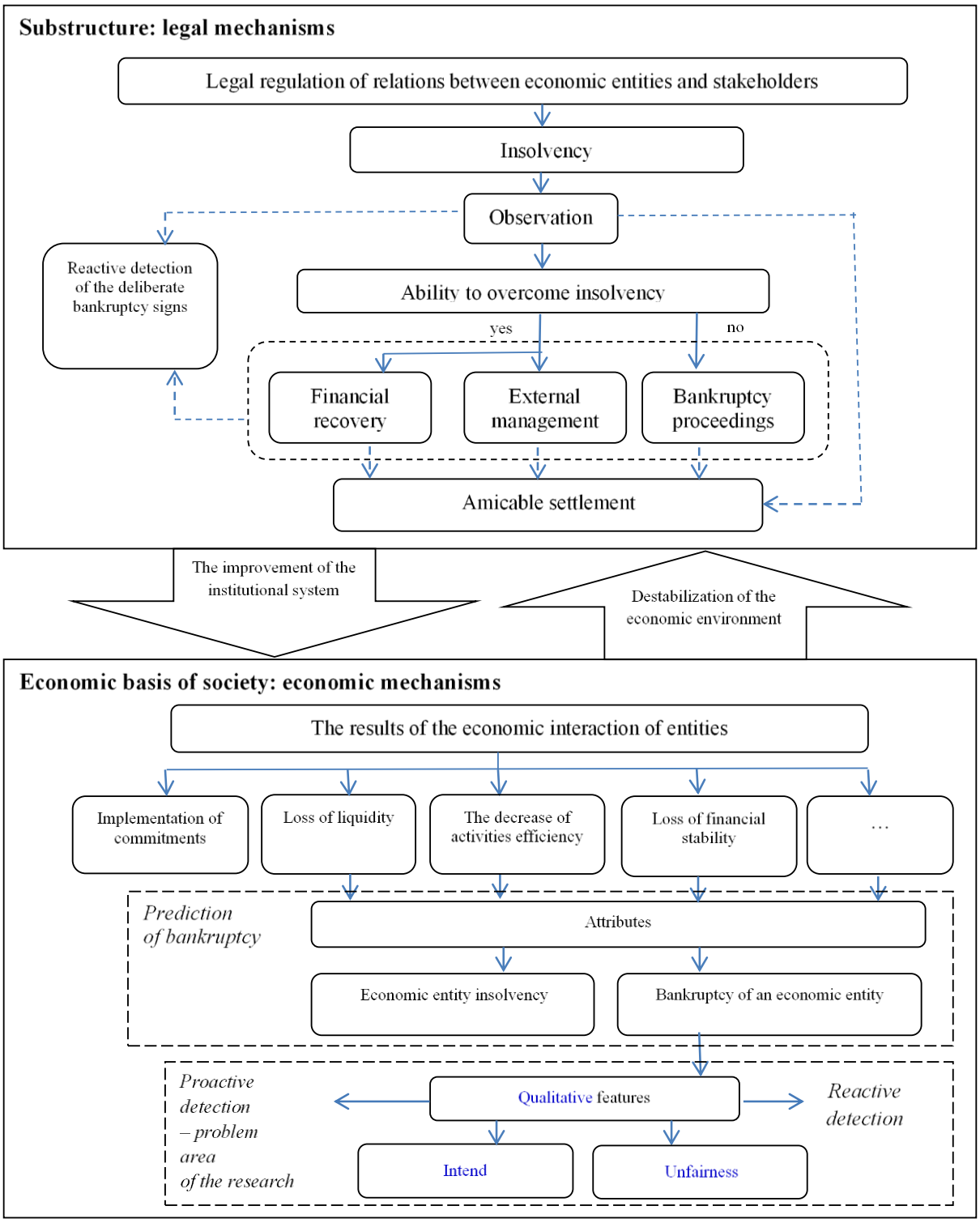
in 2017 compared to 2016 [18]. According to the FinExpertiza data, 46.11% of Russian companies were operating for more than five years as of the end of 2018. Thus, according to the data of the Russian Federation Supreme Arbitration Court every year from 2010 and currently, it receives from 30 to 40 thousand applications for bankruptcy, however, the financial recovery procedure is applied in a very small number of cases – less than 1% [19]. Currently, there are two points of view, which explain the reasons for the low share of companies with rehabilitation procedures in the bankruptcy proceedings. On the one hand, the majority of experts explain the situation by the economic factors – stagnation in the economy, difficulties in the credit sector, the fall of the rouble exchange rate, the increase in the tax burden, reduction in real disposable incomes, etc. In the opinion of some research and educational centres working under the Ministry of Internal Affairs, the reason of the lowest proportion of financial recovery is the widespread deliberate bankruptcies of companies as a result of selfish goals pursued by the owners or top management [10, 15]. The scientific study of bankruptcy causes is focused on the premeditated actions of unscrupulous entities aimed at insolvency achievement, in connection with which the following hypothesis is formulated: with the use of formalized methods, it is possible to confirm/refute the existing experts' opinion that the cause of companies bankruptcies are premeditated, unfair actions of their top management or owners to achieve insolvency.

2. REACTIVE DETECTION OF COMPANIES DELIBERATE

Detecting the signs of economic entities deliberate bankruptcy is currently based on reactive and proactive approaches (figure 1). The reactive approach is to determine the signs of unfair premeditated actions after the commencement of companies' bankruptcy proceedings. In the framework of the reactive approach, most researchers consider the legal aspect of the deliberate bankruptcy definition, based on the definition, given in the Criminal code of the Russian Federation. The comparative analysis of the economic content of the deliberate bankruptcy concept as defined by various researchers was made. The results showed that the deliberate bankruptcy in terms of the institutional approach is defined as "the institution of insolvency, having a 'shadow' aspect of the economy"[5]. The essence, causes and methods of deliberate bankruptcy are most fully represented in the works of agency relations theory representatives. Economic entities deliberate bankruptcy pursues the following purposes: the enrichment of the debtor [4, 7] and (or) the desire of owners and (or) management not to pay debts through the illegal - with the signs of unlawfulness and secrecy – income [5, 9], withdrawal of organization assets and keeping all the accounts payable on the shell company accounts; redistribution of property in the interests of third parties, deliberate creation the state of insolvency by the company owners and (or) top managers[8]. The following signs of deliberate bankruptcy can be singled out: unlawfulness, i.e. illegality; secrecy, i.e. withholding information about the illegal actions committed; premeditation, i.e. intent, consciousness. Within the framework of the deliberate bankruptcy reactive detection, the economic and legal approach is applied [2, 3, 4, 5, 6, 7, 8, 15, 16, 20], which in general implements the algorithm of 'financial and economic analysis of the economic entity / legal analysis of transactions', and economic and information approach [6, 8], which is based on the combination of methods of 'financial and economic analysis of the entity /putting up red flags' and involves the use of modern information technologies.

Figure following on the next page

Figure 1: The illustration of reactive and proactive approaches to the economic entities deliberate bankruptcy (author's development)



The financial and economic analysis allows us to reveal quantitative signs of bankruptcy and to assume the existence of qualitative (defining) signs of deliberate bankruptcy. The analysis of transactions (assessment of transactions' compliance with the Russian Federation legislation and market conditions, identification of transactions, leading to the insolvency and damage to the debtor) or putting up red flags, i.e. the establishment of special tags (changes in management, number of personnel, tax payable, etc.), indicating the intention in bankruptcy,

allow to confirm or refute the qualitative signs of deliberate bankruptcy, such as unlawfulness, secrecy, premeditation. In the authors' opinion, the detection of companies' unlawful acts, undertaken to achieve a deliberate failure, is complicated due to the information concealment by the debtors, and is hindered by methodological shortcomings (lack of methodical basis of the indicators selection for the entities activity analysis, explanations of the recommended financial and economic indicators' values, the indentification of transactions, subject to analysis, insufficiency of the transactions' analysis, the assessment of the transactions impact on the company solvency, absences of red flags). Limitations of the reactive approach to the deliberate bankruptcy detection require an appropriate response, in connection with which the authors propose a shift in the study of the phenomenon towards a proactive approach to the deliberate bankruptcy detection, targeted at the detection of unfair debtors prior to the commencement of the bankruptcy proceedings.

3. PROACTIVE DETECTION OF COMPANIES DELIBERATE BANKRUPTCY

Through the comparative analysis of the 'real bankruptcy' and 'intentional bankruptcy' definitions, the following distinctive features of deliberate bankruptcy were indentified: 'compliance with institutional norms and restrictions', 'opportunistic behaviour of economic entities', as well as qualitative assessments of their dichotomies – 'bona fide vs unfair'; 'unintentional vs intentional'. Bona fide actions are actions within the framework of the existing system of legal regulation that do not cause damage to counterparties as a result of transactional interaction. Unfair practices imply the economic entity's acts that do not meet the restrictions of the legislation, but are premeditated to benefit from the infringement of the interests of stakeholders, and are manifested in the application of bankruptcy complex schemes, disguised as civil relations, and may be accompanied with behavioural strategies, such as data manipulation statements, concealment, forgery, destruction of records, legal entities' informal winding-up, which complicates the proof of the intent, destroys the causal link between the committed action (inaction) of a person and the debtor's bankruptcy. At the same time, weak signals of unfair acts/misconduct are received in the information space through financial reports and other forms. The premeditation is manifested in the fact that the commencement of the company insolvency proceedings is conscious, prepared, planned by the owners and (or) top management and (or) other interested parties. In accordance with these features, different types of economic entities' behaviour are identified (figure 2). Deliberate bankruptcy is characterized by an unfair, unjust way to resolve the conflict of stakeholders' interests, arising from the performance/non-performance of existing obligations by an economic entity. In fact, this is a special (illegal) type of economic relations carried out with the aim of enriching the company owners / top management at the expense of creditors and is manifested in the evasion of debt obligations by creating / increasing the entity's insolvency by the management or owners. In the case of deliberate bankruptcy, the opportunistic pursuit of one party, the unscrupulous debtor, interests prevail.

Figure following on the next page

Figure 2: Classification of types of economic entities behaviour (author's development)

A sign of opportunistic behaviour		
Indeliberate	**Financial recovery. External management. Amicable settlement**	**Competitive management (real bankruptcy)**
Deliberate	**Observation**	**Competitive management (deliberate bankruptcy)**
	Bona-fide	Unfair

Sign of compliance with the institutional norms and restrictions

Thus, the following interpretation of the deliberate bankruptcy is proposed: the mechanism of unfair wrongful company winding-up in order to enrich the internal stakeholder (the owner, top management) via evading debt obligations through deliberate misconduct, and accompanied with the concealment of assets. Focusing on the economic mechanism as a set of economic process resources and ways to connect them implies not only actions to implement the strategy, but also the presence of certain indicators, displayed in the information space. In order to detect cases of company deliberate bankruptcy, it is necessary to use the opportunities of the expanding information space. Within the framework of proactive detection of deliberate bankruptcy, the traditional approach to bankruptcy prediction is applied [11, 12, 13, 14], it implies the construction of an integral indicator for the assessment of bankruptcy probability. The traditional approach to bankruptcy prediction is based on the statistical methods of assessing the dependence of the bankruptcy risk level on various financial indicators, allowing us to proactively detect the signs of bankruptcy. However, resting the approach on the principle of quantitative assessment and ignoring the qualitative assessment allows us to quantify the degree of the deliberate bankruptcy signs manifestation: the withdrawal of assets, debt build-up, decrease in efficiency, etc., but does not characterize the presence of premeditation and bad faith signs due to the absence of relevant factors. In this regard, the authors propose a statistical information approach to the detection of company deliberate bankruptcy, which is a combination of statistical methods for predicting bankruptcy and methods of detecting qualitative signs of deliberate bankruptcy - putting up red flags using modern information technologies. The use of statistical methods in the processing the real population datasets of company accounting statements, in the calculation of an integral indicator, assessing the deliberate bankruptcy probability and the construction of training sets using red flags, allowing to identify well in advance the qualitative signs of deliberate bankruptcy, e.i. premeditation and bad faith. The statistical and information approach is applied in three stages (table 1).

Table following on the next page

Table 1: Organizational and methodological mechanism of proactive detection of economic agents' deliberate bankruptcy (author's development)

Elements	Characteristics
Stage 1. Formation of the observation objects training sets by the presence of a qualitative characteristic of deliberate bankruptcy, e.i. intention and bad faith	
Objective	Confirmation / refutation of deliberate bankruptcy characteristic in companies, carrying out certain activity type, through the detection of wilful signs of the bankruptcy premeditation
Specific principles	The principle of examining the deliberate bankruptcy qualitative signs
Agent	External stakeholders (investors, creditors, suppliers). Specialized agents (arbitration managers, investigative bodies, tax authorities)
Object of study	The arbitration manager report about the signs of deliberate bankruptcy of certain activity type companies. The statement/act invalidating the debtor's transaction. Notification of the status, bankruptcy in the economic entity profiles. Companies' financial statements
Methods	Qualitative statistical methods of the study of the observation objects' general population (methods of constructing a training set on the availability of information, through confirmation/refutation). Putting up red flags
Outcomes	Formation of two training sets: (1) economic entities - deliberate bankrupts; (2) economic entities in a solvent and stable financial condition
Stage 1. Construction of the integral indicator's model for assessing the companies deliberate bankruptcy probability	
Objective	Construction of a probit regression model of an integral indicator for the assessment of the companies deliberate bankruptcy probability
Specific principles	The principle of examining the deliberate bankruptcy quantitative signs The principle of examining the deliberate bankruptcy qualitative signs. Principle of the indicators integration
Agent	External stakeholders (investors, creditors, suppliers). Specialized agents (arbitration managers, investigative bodies, tax authorities)
Object of study	Companies' financial statements
Methods	Statistical methods: qualitative methods of study of the observation objects general population (the method of historical data and the actual state contrasting), methods of probability estimation (probit regression model)
Outcomes	Construction of a probit regression model of an integral indicator for the assessment of the companies' deliberate bankruptcy probability
Stage 1. Verification of the results obtained and the assessment of the companies' deliberate bankruptcy probability	
Objective	The predictive value estimation of the constructed probit regression model of the integral index of companies deliberate bankruptcy probability.
Specific principles	-
Agent	External stakeholders (investors, creditors, suppliers). Specialized agents (arbitration managers, investigative bodies, tax authorities)
Object of study	Companies' financial statements
Methods	Statistical methods for the assessment of the probabilistic model validity
Outcomes	Division of the basic set of economic entities into groups by the criterion of the deliberate bankruptcy probability

4. DETECTION OF THE COMPANIES DELIBERATE BANKRUPTCY APPLYING THE PROACTIVE STATISTICAL AND INFORMATION APPROACH

The types of economic activities at the top of the list of companies in bankruptcy proceedings or recognized as bankrupt (in 2017-2018, 28% and 10%, respectively [18]) were studied: 'Agriculture, forestry, hunting, fishing and fish farming', 'Construction'. With the use of the SCRIN database for each type of economic activity, a basic set of observation objects with JSC, PJSC, NPJSC, CJSC organizational and legal forms was formed. The following training sets were identified – 'economic entities -deliberate bankrupts' (subjects with the reported signs of deliberate bankruptcy), 'active solvent and financially stable economic entities' (entities with positive indicators of a current net cash flow, own capital, profit). The information database based on training sets has been built up, thus the dynamics and structure of assets and liabilities, liquidity, solvency, business activity, profitability indicators for the specified period have been calculated: for the economic entities - deliberate bankrupts training set - two years prior to the start of monitoring procedure (supervision); for active solvent and financially stable economic entities - the period of 2016-2017. With the help of Kolmogorov-Smirnov statistical tests and Mann-Whitney U-test, the selection of financial indicators was carried out on the basis of the selection of features characterizing the greatest differences in training sets. The probit regression models for the assessment of the deliberate bankruptcy have been constructed (table 2).

Table 2: Parameters of the probit-regression models for for the assessment of the deliberate bankruptcy in 2017

Coefficient (calculation formula)	Financial statement line codes	Parameter value
Agriculture, forestry, hunting, fishing and fish farming		
Independent member	-	1.842671
Net income / Assets	2400 / 1600	-22.4387
(Profit on sales + Interest receivable – Interest payable)/non-current assets	(2200 + 2320 – 2330) / 1100	-0.66661
Net income / Assets	2400 / 1100	2.057963
Profit before tax / Assets	2300 / 1600	20.83524
(Profit before tax + Interest payable) / Assets	(2300 + 2330) / 1600	-34.9568
Profit on sales / Current liabilities	2200 / 1500	-0.62914
Construction		
Independent member	-	0.195893
Profit before tax / Revenue	2300/2110	-162.720
Net income / Revenue	2400/2110	19.18370
Net income / Assets	2400/1600	-42.0329
(Profit before tax + Interest payable) / Assets	(2300+2330)/1600	-15.7101
Net profit / Cost of sales	2400/2120	117.4982
Inventory / Revenue	1210/2110	2.273956

Table 3 presents the results of predictive power assesment of the probit regression models of deliberate bankruptcy probability, made in the STATISTICA software.

Table 3: The predictive power assessment of the indicators selected for construction of the probit regression model of deliberate bankruptcy probability assessment

Observation	The predictive power for acting economic entities	Predictive power for bankrupt economic entities with signs of premeditation	The percentage of correctness
Agriculture, forestry, hunting, fishing and fish farming			
Acting economic entities	27	3	90.00000
Bankrupt economic entities with signs of premeditation	2	28	93.33334
Odds ratio - 126.00		Percentage of correctness - 91.67%	
Construction			
Acting economic entities	27	3	90.00000
Bankrupt economic entities with signs of premeditation	3	22	88.00000
Odds ratio - 66.000		Percentage of correctness - 89,09%	

Table 4 presents the results of testing the probit regression model application for the deliberate bankruptcy probability assessment.

Table 4: The results of testing the probit regression model application for the deliberate bankruptcy probability assessment

Groups of economic entities	The intervals of the deliberate bankruptcy probability values	Agriculture, forestry, hunting, fishing and fish farming		Construction	
		The number of economic entities	The proportion of economic entities, %	The number of economic entities	The proportion of economic entities, %
Low probability of the deliberate bankruptcy	[0-0.1]	804	29.91	1252	41.69
Uncertainty of business continuity intentions	(0.1-0.2]	114	4.24	100	3.33
	(0.2-0.3]	69	2.57	96	3.2
	(0.3-0.4]	77	2.86	80	2.66
	(0.4-0.5]	56	2.08	72	2.4
	(0.5-0.6]	75	2.79	103	3.43
	(0.6-0.7]	86	3.2	70	2.33
	(0.7-0.8]	110	4.09	69	2.3
	(0.8-0.9]	154	5.73	70	2.33
High probability of the deliberate bankruptcy	(0.9-1]	1143	42.52	1091	36.33
-	Total	2688	100	3003	100

5. CONCLUSION

According to the results of the author's research, the following main conclusions were obtained:

1. Using the constructed integral indicator of the deliberate bankruptcy probability assessment within the framework of the proactive statistical information approach, we generalized three groups of entities with varying degrees of probability of the deliberate and covert actions to achieve the insolvency status. For economic entities in the sphere of Agriculture, forestry, hunting, fishing and fish farming, the share of entities with a high degree of deliberate bankruptcy probability in the basic set of observation objects amounted to 42.52%. For economic entities in the sphere of Construction, the share of entities with a high degree of deliberate bankruptcy probability in the basic set of observation objects amounted to 36.33%.
2. For comparison, according to Fedresurs database, annually during the period of 2015-2017 the proportion of detected economic entities with the deliberate bankruptcy signs on the basis of a reactive approach amounted to no more than 9% (table 5).

Table 5: Dynamics of arbitration managers' reports on the presence/absence of Russian companies' deliberate bankruptcy signs

Indicators	2015	Specific weight, %	2016	Specific weight, %	2017	Specific weight, %
Number of reports about the presence of signs	906	8.33	1310	8.25	1636	6.71
Number of reports about the absence of signs	7526	69.17	11167	70.29	18291	75.04
A number of reports stating "not enough information»	2448	22.50	3409	21.46	4447	18.24
Total	10880	100.00	15886	100.00	24374	100.00

3. Based on the expert opinion of investigative authorities, that no less than 90% of the bankrupt entities demonstrate the deliberate bankruptcy signs, it was concluded that proactive statistical information approach is characterized with higher accuracy of the results of deliberate bankruptcy detection in comparison with the reactive approach.
4. A large number of economic entities with signs of deliberate bankruptcy were detected among Russian agricultural and construction companies. This fact indicates that the high degree of bankruptcy of the respective companies is associated with the the strategy of debtors' deliberate misconduct.

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CREATING AN INNOVATIVE CLIMATE IN THE REGION USING A MODEL OF INTERACTION BETWEEN HIGHER EDUCATION INSTITUTIONS AND BUSINESS

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ABSTRACT

Currently, we are witnessing dramatic changes in all sectors related to the appearance of new business models, the transformation of production systems, and new interaction among market participants. The formation of the fourth industrial revolution leads to the need to create new economic models focused on effective innovative development. Universities that have enough scientific, fundamental and practical potential are of the utmost importance in the process of forming the innovative economy and the creation of economic advantage. This article discusses the direction of creating an innovative climate in the region, through the interaction of higher educational institutions and business. The main regulatory documents reflecting the relevance of introducing innovations into the Russian economy are presented. The indicators that affect innovation and innovative activity in the Chelyabinsk region, in comparison with other regions of the Russian Federation, are analyzed. The necessity of creating an innovative climate in the region is substantiated. In this study, the authors propose two interrelated areas for improving the innovation climate in the region. The first direction is a competitive internship for students of higher educational institutions, which allows them to form competences in accordance with the latest requirements of the modern economy. The second direction is a tender for business representatives collaborating with higher educational institutions. We have proposed a model for creating an innovative climate in the region, presented in the IDEF0 notation. This model includes two previously proposed areas for increasing the innovation climate in the region, the model shows what exactly will control this process, what mechanisms will be used, what acts as resources and what the expected result will be.

Keywords: *Innovation, Region, Model, Innovation climate, Higher educational institutions*

1. INTRODUCTION

The main indicators of the national economic development have demonstrated the absence of growth and often the negative dynamics of fall in the recent years. At present, according to the data of the first quarter ofthe year 2019, the domestic economy is on the verge of recession. At the end of the first quarter of 2019, GDP grew by only 0.5% in annual terms, which is a significant lag for the developing economy. In turn, small and medium-sized enterprises decreased by 8%, and the number of employees at such enterprises decreased by 1.6%. Meanwhile, insufficient pace of economic and innovative development was evident in previous years. The main reasons for the impending recession are mainly the export-raw material nature of the domestic economy (Russia's dependence on oil prices in the world), lack of balance, and a significant lag from Western countries in terms of innovative and technical development. As a result, the issues of innovation development in enterprises, skills development among young professionals, and the transition of regional economic systems to an innovative path of development are increasingly discussed (Evreeva et al., 2018). Identifying the most effective innovative tools plays a crucial role in the development of the country's economy as a whole.

Effective innovative tools will provide an incentive to increase competitiveness between producers of both large, medium-sized and small businesses (Fariz, 2019). At the present stage of the domestic economy development, achieving high rates of economic growth can be achieved by changing the business structure, increasing the share of high-tech production, and digital technologies. Therefore, the process of creating an innovative climate in the region is very important. This requires that every element, such as higher education institutions, business representatives and regional authorities, start interacting together, creating a synergized effect. Despite the fact that this is an actual problem for the domestic economy, descriptions of practical models in the interaction of higher education institutions, business and the region remain insufficient.

2. ASSESSMENT OF INNOVATIVE DEVELOPMENT OF RUSSIAN REGIONS

To assess the innovative development of the Russian Federation regions, we will refer to the Rosstat data for 2018 and present them in table 1.

Name	Chelyabinsk Region	Sverdlovsk Region	Kemerovo Region	Moscow Region	Russian Federation
Volume of innovative goods, works, and services, million rubles.	1 661 691,1	2 213 908,3	1 853 934,7	2 706 592,0	68982626,6
Expenses for technological innovations of organizations, million rubles.	28 327,0	39 781,2	2 225,4	136 922,6	1 472 822,3
Developed advanced production technologies, items.	145,0	85,0	3,0	134,0	1 565,0
Advanced manufacturing technologies used, items	7 358,0	11 352,0	3 887,0	18 980,0	254 927,0
Number of employees engaged in research and development, persons	15 162,0	20 528,0	1 228,0	86 796,0	682 580,0
Number of researchers with a scientific degree, persons	1 142,0	2 637,0	480,0	8 232,0	100 330,0
Internal expenses for research and development, million rubles.	21 445,0	30 053,6	1 518,7	124 272,6	1 028 247,6

Table 1: Innovative indicators ranked by Russian regions

As we can see from the table, the Chelyabinsk region lags behind the neighboring regions in terms of innovation indicators, so in the category of volume of innovative goods, works and services, the share of the Chelyabinsk region in the Russian Federation is 2.4%, which is significantly less than the share of the neighboring Sverdlovsk region (3.2%), the Kemerovo region (2.6) and the Moscow region (3.9%). Nevertheless, it is worth noting that the Chelyabinsk region has great potential in the field of scientific research. With a small number of employees engaged in scientific research (2.2%) (for comparison, the Sverdlovsk region (3%), the Moscow region (12%)),the Chelyabinsk region is the leader in advanced manufacturing technologies (9.2%) (for comparison, the Sverdlovsk region (5.4%), the Kemerovo region (0.1%) and the Moscow region (8.5%)). Thus, measures to create an innovative climate in the region focused on effective innovative development are seen as necessary. The transition to an innovative type of development of the national economy is also reflected in many legal documents of the Russian Federation, the data are presented in table 2.

Strategy for innovative development of the Russian Federation in the period up to 2020	Development of personnel cooperation in the field of science, education, technology and innovation. Increasing business innovation activity and accelerating the emergence of new innovative companies.
Concept of long-term socio-economic development of the Russian Federation until 2020	Development of education. Development of science and technology. Economic development and innovative economy. Other programs aimed at developing high-tech sectors of the economy (aviation, space, nuclear power industry)
Concept of development of education in the Russian Federation until 2020	Updating the structure of the network of educational institutions in accordance with the objectives of innovative development. Ensuring a competent approach, the connection of academic knowledge with practical skills.
Strategies for the development of the information society in the Russian Federation for 2017-2030	Creating an ecosystem of the digital economy of the Russian Federation in which digital data is necessary for production in all spheres of social and economic activity and in which interaction is ensured, including cross-border, business, scientific and educational communities, state and citizens. Creating the necessary and sufficient institutional and infrastructural conditions, removing existing obstacles and restrictions for the creation and (or) development of high-tech businesses and preventing the emergence of new obstacles and restrictions, both in new sectors of the economy and in new industries and high-tech markets.
Decrees on national goals and strategic development goals of the Russian Federation for the period up to 2024	Accelerating the technical development of the Russian Federation, increasing the number of organizations that implement technological innovations to 50% of the total number. Ensuring accelerated implementation of digital technologies in the economy and social sphere.

Table 2: Reflection of innovations in key regulatory documents of the Russian Federation

After analyzing the key regulatory documents of the Russian Federation, it can be noted that each of the documents combines an innovative focus, which once again proves the relevance of the study in the modern economy. Noting the current state of the innovation economy in the region, we formulate the prerequisites for creating an innovative climate in the region and represent them in figure 1.

Figure following on the next page

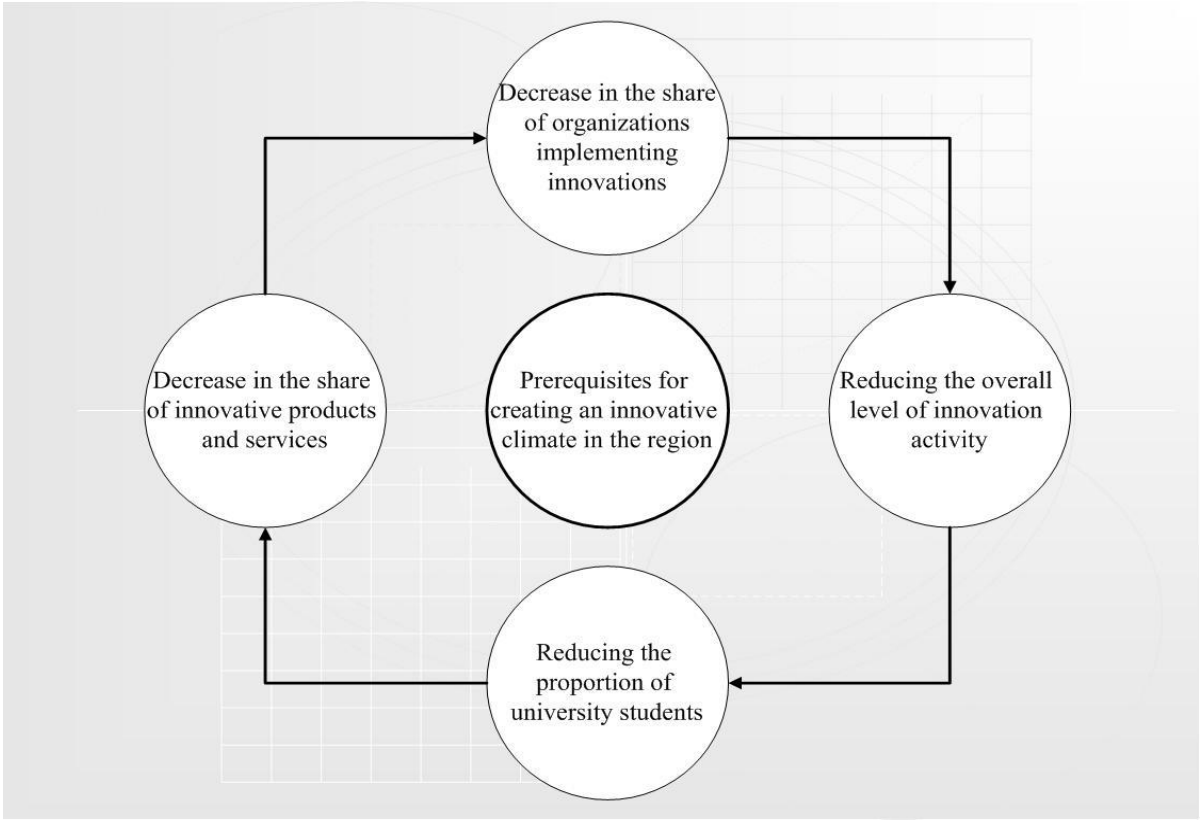

Figure 1: Prerequisites for creating an innovative climate in the region (formed on the basis of data on Target indicators for the implementation of the innovation development Strategy of the Russian Federation in the period up to 2020, (approved by the Decree of the Government of the Russian Federation No. 2227-R of December 8, 2011)

3. METHODS AND SAMPLING

All the above-mentioned concepts and development strategies lead to the formation of the idea of interaction between higher education institutions and business representatives in order to create an innovative climate in the region. It becomes obvious that universities and business representatives need to abandon the standard model of interaction through the "job market" and move to complex interaction. Such interaction implies, on the one hand, that regional universities, along with training and research work, will not only prepare graduates for entering the job market, but will also effectively interact with business, using new technologies, the principles of multidisciplinary capability, participation in scientific projects and regional development. It should be noted that the works of domestic and foreign scientists are devoted to the topic of partnership between the University and business. Thus, the issues of interaction between the University and enterprises for training qualified personnel are dealt with by: Rudashevsky V. D. (2013), Durnev A. Ya. (2016), Reznik S. D. (2009), Chernitsov A. E. (2013), Nazarova N. A. (2010), Saburova M. M. (2015), Shevchenko, D. A. (2012), Shcherbakova N. V. (2015), Sukhanova T. V. (2015), Sklyarevskaya V. A. (2015). Taking into account the foreign experience, a special attention should be paid to the research of Henry Itzkowitz (2011), who works in the direction of the "Triple Helix", studying the complex interaction between higher education institutions, business and representatives of the state. Also, a large number of publications by Russian scientists are devoted to practical and theoretical issues of interaction between the University and business, as well as the professional future of University graduates. It should be noted that the experience of colleagues both from the post-Soviet space and from Europe, who are also engaged in research on this topic: KrivoruchkoYa., (2008) give examples of the development and evaluation of the effectiveness

of partnerships with business partners, Kharchenko V., (2014), Sklyar V. (2012) considered possible models of cooperation with universities, Kondratenko Yu., (2014) defined the features of cooperation between universities in the field of information technology, Gyogl H., ShedlerK. (2009) analyzed the cooperation of enterprises and universities in Europe. Each scientist gives their own arguments concerning the importance of interaction and the possibility of developing partnerships. The interaction of the University and business in the region makes it possible to form certain criteria that the University should focus on when forming specialties, curriculum, academic disciplines and practices. In the process of studying at University, the student must form such professional skills and abilities that would meet the latest requirements of the economy and enterprises in the modern world. Cooperation with business will help to correctly develop the main competencies that a University graduate should have and will help to show the right direction throughout the entire course of training (Kauffeld-Monz, 2013). One of the key points in the interaction between the University and business is the situation when the interaction of the two structures will contribute to the effective training of highly qualified personnel who will meet all the requirements of the employer and optimize actions in various areas of interaction (project work, for example). As part of creating an innovative climate in the region, we propose to focus on the interaction of business representatives and higher education institutions, which, thanks to cooperation,could have a strong impact on the development of innovations in the region, improving the quality of educational services provided. In our work, we propose two interrelated areas that we believe will have a strong impact on creating a favorable innovation climate in the region. The first direction is defined by modern market conditions, in which competition plays an important role. During the Soviet era, a distribution system was developed. This is the practice of employment of graduates of higher and secondary specialized educational institutions. Distribution in the USSR covered all graduates of educational institutions and guaranteed employment and social benefits. In the last years of studying, students were sent to practice, during which they could show their abilities and talents, so that the company could send a personal application for certain students thus selecting the most suitable working staff. In a market economy, such a tool as distribution is not effective, it is all about competition. But how can a student's competitiveness, potential, knowledge and competencebe determined? In our understanding, the interaction between future graduates and representatives of business structures should begin long before students get a degree. A graduate of a higher education institution and a business representative who is interested in a specialist face a number of problems and difficulties. For a graduate, this is a problem of assessing their competitiveness, they do not yet understand how much their knowledge and skills are in demand in the job market, how much better or worse they can cope with a certain job. For a business representative, the problem is similar: during an interview or a short trial period, it is impossible to assess the full potential of a young specialist, their knowledge and competence, and the presence of a high score in the diploma does not guarantee a high level of qualification of the student. In turn, organizations are forced to employ students in order to maintain their functionality (Muscio, 2014). As a result, companies often choose graduates who are not suitable for them, and young professionals often continue working in organizations where they cannot properly reveal their full potential. The first direction of creating an innovative climate in the region is project work, shown in figure 2. This approach is based on close interaction between higher education institutions and businesses. The main goal of this approach is to identify the most competitive and suitable students for a particular enterprise. First of all, those responsible for interaction with business representatives work at universities. As a rule, many universities have signed contracts with some companies so that their students have practical training, but the peculiarity of our approach is that business representatives interested in highly qualified personnel should create a technical task themselves and submit an application to the University.

In our approach, we offer the following interaction model:

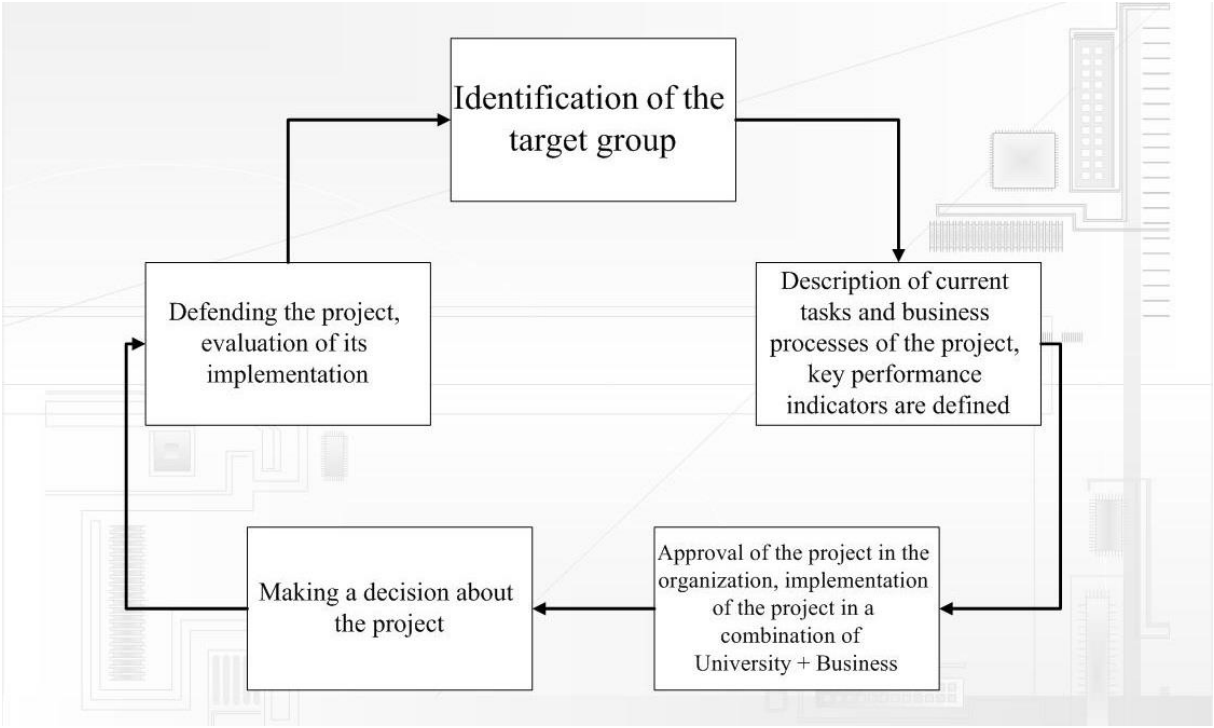

Figure 2: Five-Step approach to competitive practice

1. At the first stage, a target group of the most competitive and interested students is formed. Different teams of students can be formed for different projects. The condition for the selection is the student's personal desire to participate in project activities, personal achievements in the scientific field, and the recommendation of the supervisor. Also, a curator from the higher education institution and a curator from the enterpriseare designated.
2. At the second stage, which takes place both within the walls of higher education institutions and at the enterprise, actual tasks that need to be implemented in the course of the project are formed, the main business processes are described, roles are distributed within the team (it is imperative that each of the students be able to show themselves as much as possible not only in team work, but also in individual competition), and key performance indicators (KPI) are also defined.
3. At the third stage, the project is coordinated with the company, the main work on the project implementation begins, and not only students are involved in the project, but also a curator (supervisor) from the University and a curator from the organization. This interaction allows organizations to get a comprehensive and authoritative vision of the project development, and the higher education institution receives timely and up-to-date information about the activities of enterprises, which allows teachers to get best practice experience.
4. At the fourth stage, a decision is made about the future life of the project, whether it will be implemented at the enterprise in the future, whether it will be finalized, how much work on its implementation was successful, the achieved KPIs are also assessed.
5. At the fifth and final stage, the project is publicly defended at the enterprise. Students evaluate the degree of its implementation and describe the project's pluses and minuses.

After all these stages, the organization decides to hire future graduates who participated in the project. The second area is close cooperation with regional authorities in order to create an innovative climate in the region, as shown in figure 3.

We propose to implement this direction in the form of a tender in which the customer is the state represented by the region, and the project is realized by the University and business representatives of business in cooperation with each other.

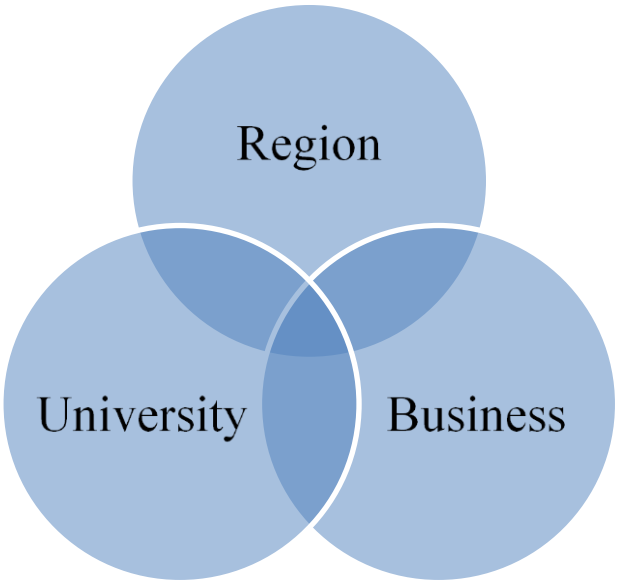

Figure 3: Tender approach to creating an innovative climate in the region

The tender is held in several stages. We highlight the main stages and mark them in figure 4.

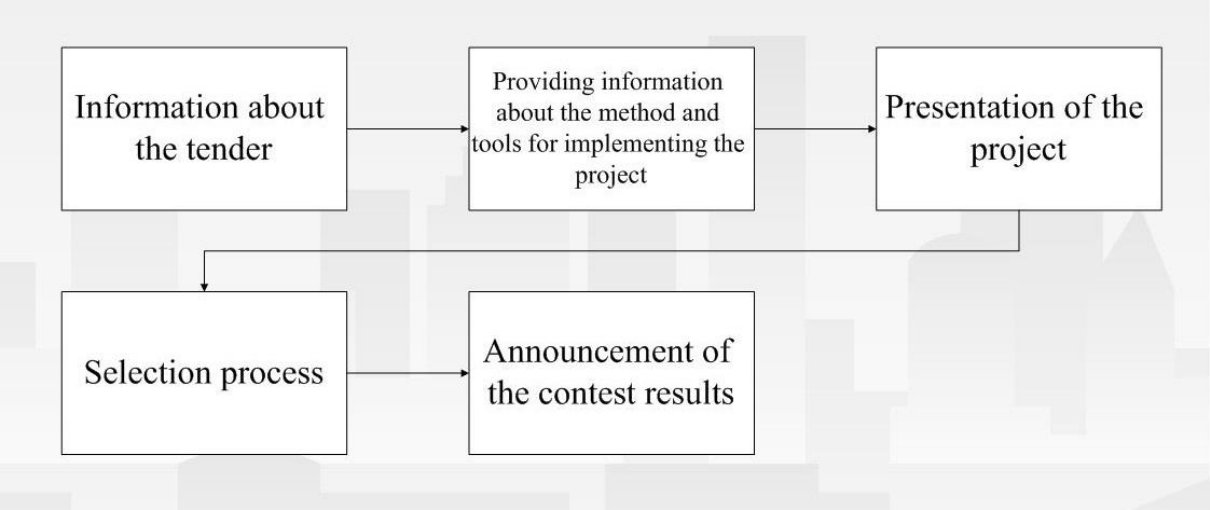

Figure 4: Stages of the tender for scientific developments in the University-business combination

1. At the first stage of the tender, the regional authorities form the terms of the tender and set criteria and deadlines for its implementation. An important condition for participation in the tender is the cooperation of representatives of business and higher education institutions.
2. At the second stage, representatives of business and higher education institutions form a team and provide information about the method and idea of implementing the project.
3. By the third stage, representatives of the regional authorities allow those teams that were the best at preparing documents start the project implementation. Then, the project is defended.

4. At the fourth stage, the final selection is made, a meeting of the members of the expert Commission is held, and, in accordance with the requirements, the customer makes a decision on choosing the winner.
5. At the final, fifth stage, the results of the competition are announced.

4. RESULTS AND MODEL

When describing the process model, we used Microsoft Visio, which allows us to build a graphical model of the business process. The process model in IDEF0 notation allowed us to build a model of "creating an innovative climate in the region" and decompose it to fully understand incoming and outgoing data, management, and model mechanisms. IDEF0 is a functional modeling methodology and graphical notation designed to formalize and describe business processes. A distinctive feature of IDEF0 is its emphasis on the subordination of objects. IDEF0 as a standard was developed in 1981 by the United States Department of the Air force as part of the industrial automation program, which was designated ICAM (Integrated Computer Aided Manufacturing). The created model will help to understand all the processes that influence the creation of an innovative climate in the region and will show the mechanisms that are used for this. Figure 5 shows a General view of the model.

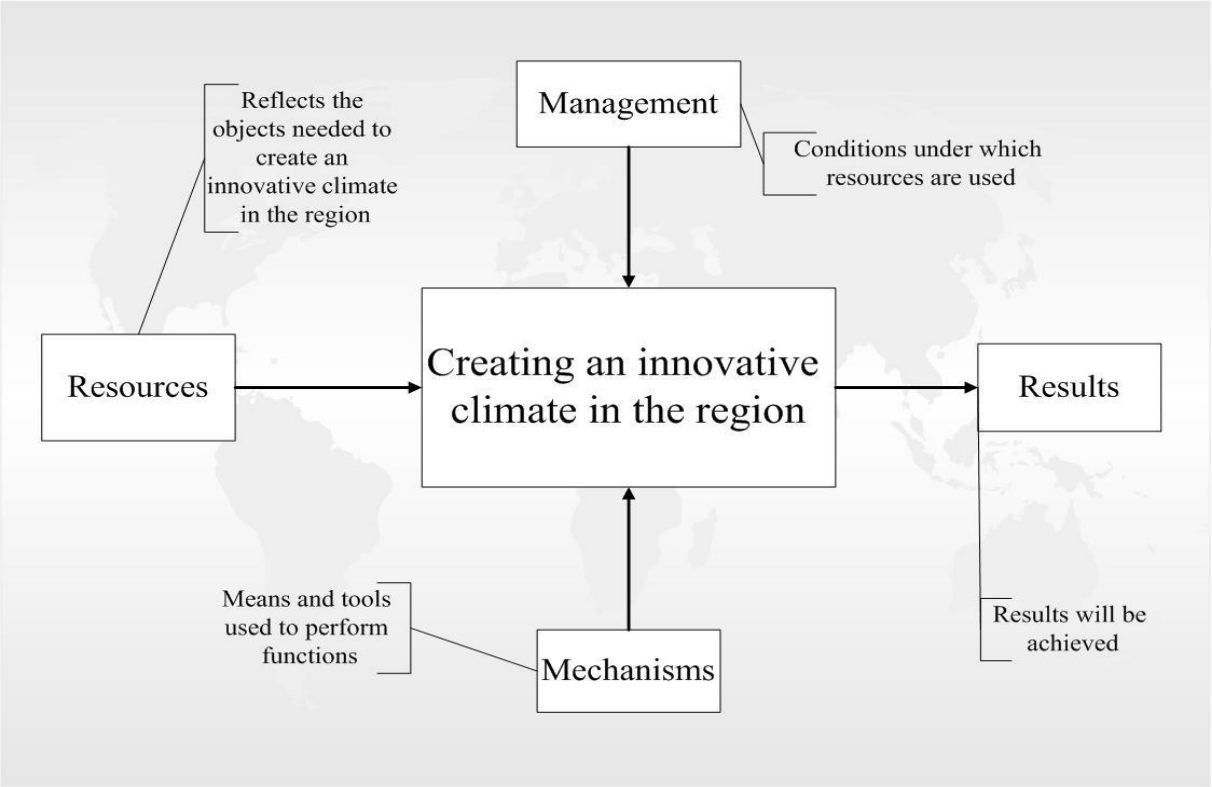

Figure 5: Model for creating an innovative climate in the region

Figure 6 below shows the decomposition of the model, the role of higher education institutions and businesses in it, and how they interact with regional authorities to create an innovative climate in the region.

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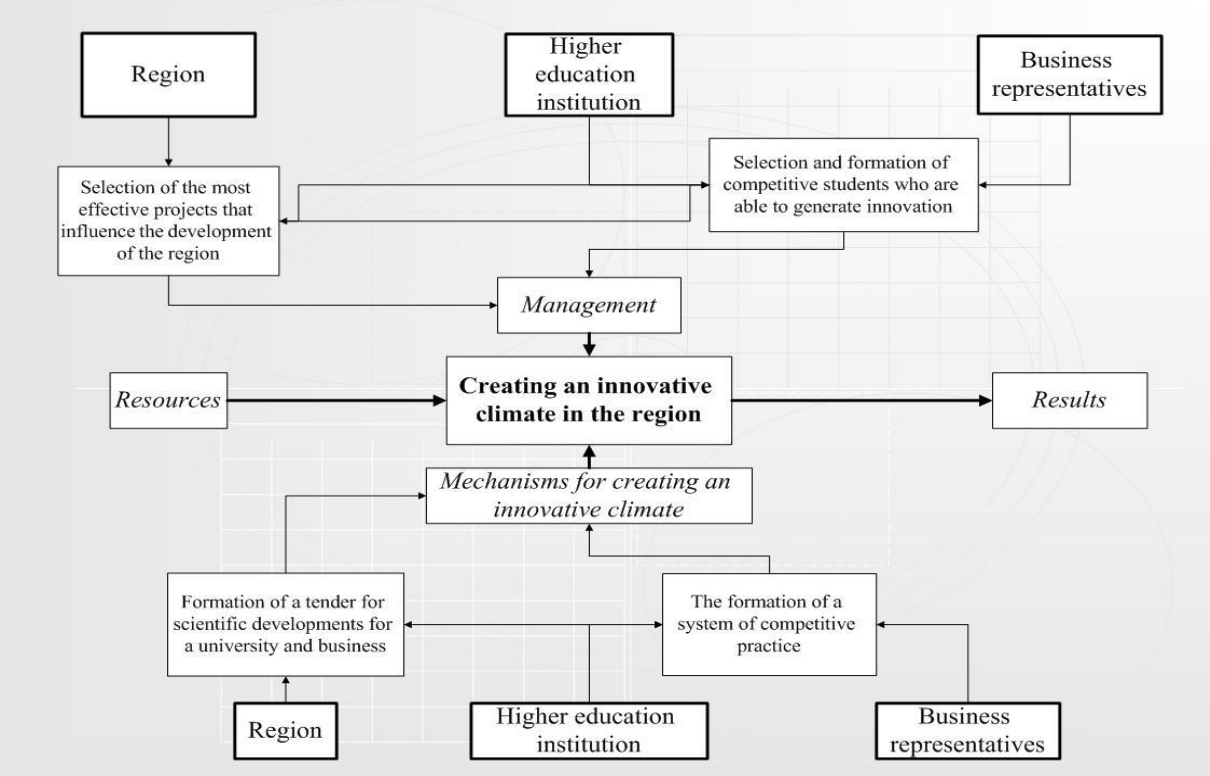

Figure 6: Decomposition of processes for creating an innovative climate in the region

Also, in the model, figure 7 shows incoming flows that reflect what is needed to create an innovative climate and outgoing flows that reflect the results achieved from creating an innovative climate in the region.

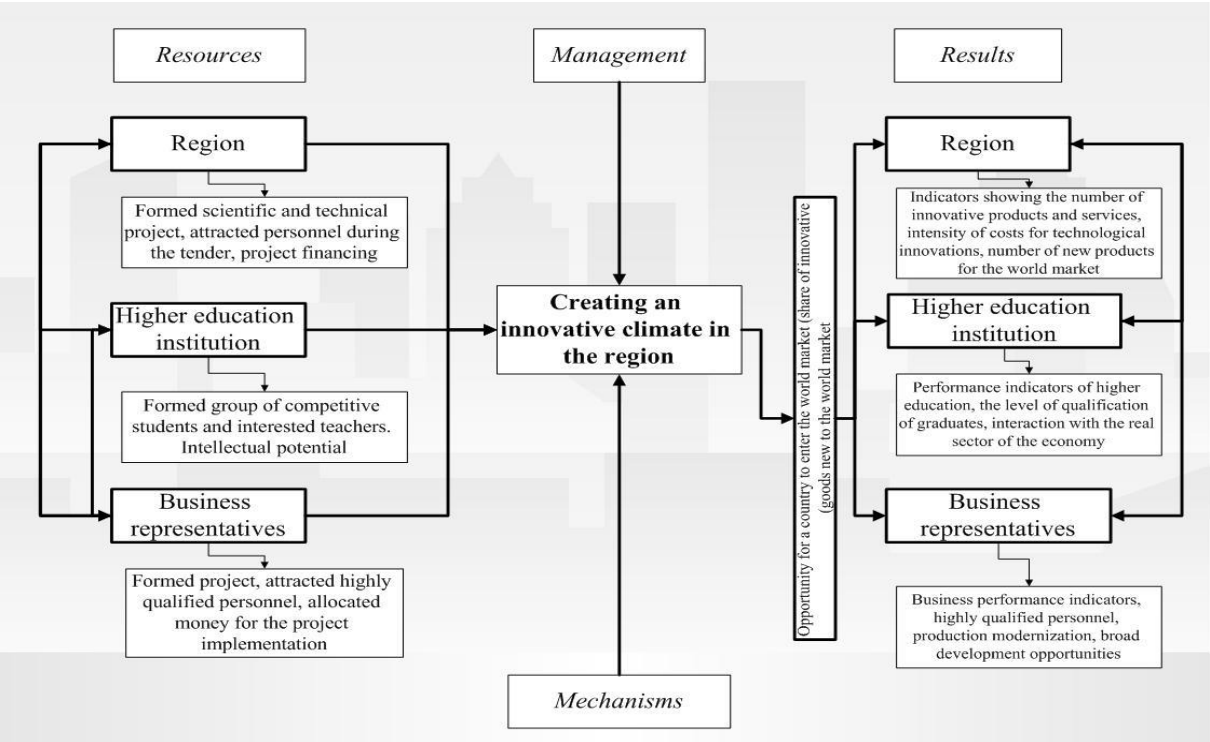

Figure 7: Decomposition of processes for creating an innovative climate in the region

Based on our model, we will highlight the process of forming an innovative climate in the region, which reflects the problem field, the characteristics of the transition and takes into account the interpretation of the process of innovative climateformation. Presented in table 3:

Problem field	Transition characteristic	Interpretation of the process of creating an innovative climate
Normative approach - a process of change and transformation	Moving the system from standard types of relationships to directed interaction between the University and business	Designing a new approach to interaction between universities and business, with the aim of mutually dependent development
Behavioral approach - leadership and involvement of students and faculty	Moving the system from a state of professional orientation crisis to a new paradigm	Self-determination of students which sets the trend for innovative changes in organizations and institutions of higher education
Synergetic approach - the process of creating a cumulative effect from a combination of higher education institutions and business structures	Moving the system to the emergence model, when the efficiency of the activity increases, as a result of interaction	A system that causes and encourages complex mutually beneficial interaction by exchanging information and moving to a new state of the system
Integration approach-comprehensive consideration of change issues	Moving the system to the increase in the volume and intensity of interaction	A system capable of flexible interaction in order to generate and implement innovations

Table 3: The process of creating an innovative climate in the region

Thus, the model we created will allow us to fully influence the problem field, reflect the characteristics of the transition of the established system in the direction of creating an innovative climate in the region and opens up new possible options in the interaction between higher education institutions, business representatives and regional authorities. And most importantly, it provides a transparent mechanism for this interaction.

5. CONCLUSION

This study contributes to a better understanding of the process of creating an innovative climate in the region. The study also makes a certain contribution to the concept of the "Triple Helix", thereby supplementing the world experience with examples in the conditions of the modern Russian economy. First, the article considers a practical example of applying the direction of interaction between higher education institutions and business representatives. Secondly, it describes possible interaction with regional authorities by conducting a tender. In conclusion, it should be noted that the model created by us will help higher education institutions and businesses to interact effectively, improve the level of graduates' qualifications, and create projects focused on innovative development not only of the enterprise, but also of the region. In our understanding, the creation of an innovative climate in the region will encourage higher education institutions, business and regional authorities to constantly cooperate, which will have a positive impact on the level of innovative development of the country as a whole.

Future research should focus on the practical implementation of these areas, taking into account regional practices and direct representatives of business structures.

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ECONOMIC EFFECTS OF CONCENTRATION IN RUSSIAN FOREST INDUSTRY PULP-PAPER BRANCH

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ABSTRACT

There are more forests in Russia than in any other countries. In Russia since ancient times the forest had played a big role. With the development of a market, the forest industry has also developed in our country. By the middle of the twentieth century, a powerful wood-chemical complex was formed. It is includes the harvesting and processing of wood. Today forests occupy more than 45% of the territory of the country. It is more than 1184.5 million hectares. How to manage forest resources most effectively? For a long time there was a monopoly. The situation changed in 2006, when the Forest Code was accepted. In recent years, the situation has changed significantly, the structure of markets for woodworking products has become more complicated, and different types of market structures for these products have formed, depending on the region and the type of final product. Purpose. Analyze the market concentration in Russian woodworking industry currently. Materials and methods. Industry Statistics was used, statistical reports of forest companies were analyzed, methods of deduction, analysis, the empirical method, and methods for calculating concentration coefficients were used. Results and scope. The development of construction sector has led to an increase sales . The largest ten companies account for more than 70% of the market. These include «Ilim Group», with revenues ***is*** *110.5 billion rubles, Mondi SLPK, whose revenue grew to 54.9 billion rubles, and the Segezha group, which combines pulp and paper and woodworking assets of AFK Sistema (43,7 billion rubles.). Thus, the market concentration was 75%, the Herfindahl-Hirschman index is 1595 (2017), 1247 (2018**)**, which indicates a moderate concentration. The entropy index for the first top 5 leaders is 1.632092(2018). At the same time, the Bane Index showed that the «Ilim Group» has greater market power than other companies. It* ***is*** *also least a small amount of market power in hands of other forest industry corporations. Tobin index q> 1 only for the Ilim Group. This means that the level of profitability for the company is higher than necessary. Conclusion. The forest industry has a complex structure. It distinguishes about 20 industries, sub-sectors and industries. To increase economic efficiency, it is advisable to increase competition between firms.*

Keywords: *«Ilim Group», Herfindahl-Hirschman index, market concentration, Pulp and paper branch, timber industry*

1. INTRODUCTION

For over 70 years there was a public monopoly on forest reserves in our country. The forest industry production, including pulp and paper manufacturing, was strictly regulated by the USSR Ministry of Forestry. Normally, there was a lack of competition and a high concentration in the industry. For the fundamental changes in the situation a new Forest Code of the Russian Federation was adopted (Forest Code). His purpose was to ensure the market organization of the forest industry and create conditions for free competition. It should be pointed out that the importance of wood material as an economic resource is growing, despite all the achievements of scientific and technological progress.

And if at the beginning of XX century 2-2.5 thousand types of products were made from wood, in the end of the XX century production of the industry includes over 20 thousand different products. Wood is easily processed, has a low specific gravity, is quite durable, and its chemical composition allows to get a wide range of useful products from it. Russia is the largest forestry country in the world, where since ancient times forest has playing a huge role in economical activity. According to the, forests in our country occupy more than 45% of the territory, which is more than 1.173 million hectares (News Feed, World Wildlife Fund). These data coincide with The Federal Service for State Statistics (Rosstat) data, which gives the figure of 1184.5 million hectares in 2017, which corresponds to 82.8 billion m^3 of total timber reserves. (Pulp and paper industry as a sector of the national economy). The Government of Russian Federation proclaims a policy of state support to the industry. So in 2018, the Strategy for the Development of the Forest Complex of the Russian Federation until 2030 from 09/20/2018, №1989-p was adopted. The purpose of the article is to analyze the development of the forest industry and assess the structural concentration in the market of pulp and paper products. On the one hand, this market is a matter of light industry, which is characterized by the large number of companies with similar market share. On the other hand, the raw material for the industry is a very specific resource - forest. Timber production requires not only large financial costs, but also a lot of time, which distorts the market and conducive to emerge of a monopoly. Moreover, planned economy heritage has a certain influence: since most modern companies were created in the Soviet period, when mostly large enterprises were created, then in the Russian market there are only large corporations are working nowadays. We used a historical approach, mathematical modeling and econometric calculation methods, induction, and analysis as research methods. (Клюева И.С, Варакса А.М.). The pulp and paper market was analyzed as an aggregate of firms. To determine patterns in the market, we used the deductive approach, comparative studies - to identify variance of the reported values from the recommended ones, as well as the market situation in different years comparison. The empiric method, the statistical method, and methods for calculating concentration ratio such as the Herfindahl-Hirschman index, concentration ratio, and entropy rate were applied. In the research process, we used materials from Federal State Statistics Service (https://www.gks.ru/), Federal Customs Service (http://customs.ru/), International Trade Center (https://www.trademap.org), and companies statistical reporting. The object of study is the forest industry. The subject of research is the pulp and paper products market.

2. FOREST INDUSTRY ANALYSIS

The branches of the forest industry include: timber logging; furniture industry; cardboard and cardboard packaging production; production of wood boards, plywood; biofuel production; standard house building; pulp and paper industry and forest chemistry; hydrolysis industry, chemical-mechanical processing of wood. According to the Russian classification system of OKVED (Russian National Classifier of Types of Economic Activity), forestry and timber logging, as well as harvesting of edible forest resources and the provision of forestry services, belong to section A, subclass 02.1, 02.2, 02.3. Finished-product output corresponds to the sections B-F, the pulp and paper industry relates to section B, subclass 17.1-17.29. Timber logging is carried out primarily in the heavily forested areas of the Northern Urals, in Siberia and the Far East. These regions provide about 4/5 of all commercial wood. Large centers of sawmilling and woodworking are located in the lower reaches and mouths of rafted rivers: Arkhangelsk, Mezen, Igarka, etc. Having studied the period from 2005 to 2018, we see the following. The number of organizations involved in timber logging fell from 20.800 to 7.600 companies. The average annual number of employees in the industry decreased from 248 thousand up to 82 thousand people. At the same time, the financial result improved significantly - instead of losses in the industry until 2015, 2016 and 2018 were profitable (Key performance

indicators of organizations by type of economic activity "Timber Logging"). After the devaluation of the ruble in 2014, this industry, as an export-oriented, became one of the few that was able to avoid an economic recession. According to the 2018 data, the forestry, woodworking and pulp and paper industries account for 4.6% of the industrial structure in Russia as a whole.

2.1. Pulp and paper industries

Pulp and paper industry refers to the processing industry. Its difference is in the need of using a large amount of natural resources. This is due to technological characteristics. The primary resources are natural sources of water, wood and paper pulp, as the primary product for the creation of more complex materials such as paper and cardboard. To create 1 ton of paper pulp, an average of 350 cubic meters of water and 2000 kW/h of electricity are consumed. Based on rational considerations, most of the pulp and paper industry enterprises are concentrated in geographic areas with a large amount of wood and water resources (which also contribute to the generation of cheap electricity using hydroelectric power stations). Electronic and magnetic data storage didn't replace the paper but, on the contrary, made new requirements for nomenclature and quality. Electronics demanded from the industry new paper grades with previously unknown features. Thus, paper usage is not reduced at all. Paper as a packaging material is convenient, environmentally friendly, and easy to dispose of. As it was noted, the 2014 crisis did not have a significant impact on the forest industry, including the pulp and paper industry: it has sustained growth over the past 5-10 years, as well as rise in export, despite the sanctions. The industry's proportion in the volume of processing manufacturing output is 3-4%. At the same time, paper manufacturing accounts for 2.1% (Pulp and paper industry as a sector of the national economy). Cardboard and paper production capacities are estimated at 9 million tons per year. However, the degree of depreciation of fixed assets in this industry is quite large - 50%. Russia produces, per capita, approximately 33 kg of paper per year, which is ten times lower than the average for European countries. Cardboard production is the most high-growth sector. Production volume in the paper pulp production, groundwood fiber, paper, cardboard and cardboard products amounted to more than 900 billion rubles. In 2016, the production of paper pulp amounted to 8.2 million tons, paper - 5.2 million tons and cardboard - 3.3 million tons. In 2018 - 8.7 million tons, 5.6 and 4.1, respectively (Pulp and paper industry as a branch of the national economy, Trifonova P. O.). Despite the fact that the industry growth ratio in the Russian Federation is lower than in more developed countries, in absolute terms, Russia is a leader in the production of pulp and paper products throughout Europe.

2.2. Foreign economic relations

The pulp and paper industry is involved in various types of economic activity. The first is foreign investments. Even before the adoption of the Forest Code of 2006, foreign investors began to buy shares of Russian companies: 68.5% of the shares of «Syktyvkar LPK» were acquired by the British company Mondi Europe in 2005, the Austrian holding Pulp Mill Holding GmbH3 bought 7.4% of the shares of «Arkhangelsk PPM». Companies are more actively involved in foreign trading. It should be pointed out that for many centuries traditional Russian export was export of wood and goods from it. Timber and pulp and paper products account for a little more than 2% of the export structure of the Russian Federation, and this indicator did not change significantly throughout the entire post-Soviet period. Also, products of this commodity group are imported to Russia. In 2018, exports for the commodity group "wood and wood products" amounted to 9.5 billion dollars, which exceeded 2017 by 4-5% for most goods. According to advance figures for 2019, exports will amount to 9.2 billion dollars (Export of Russia).

In 2018, wood pulp accounted for 2 117.5 thousand tons, or 1 491.3 million dollars. Paper exports amounted to 1163.7 thousand tons, or 654 million dollars. Dynamics of paper and cardboard exports and imports from 2014 to 2018 is presented in Fig. 1.

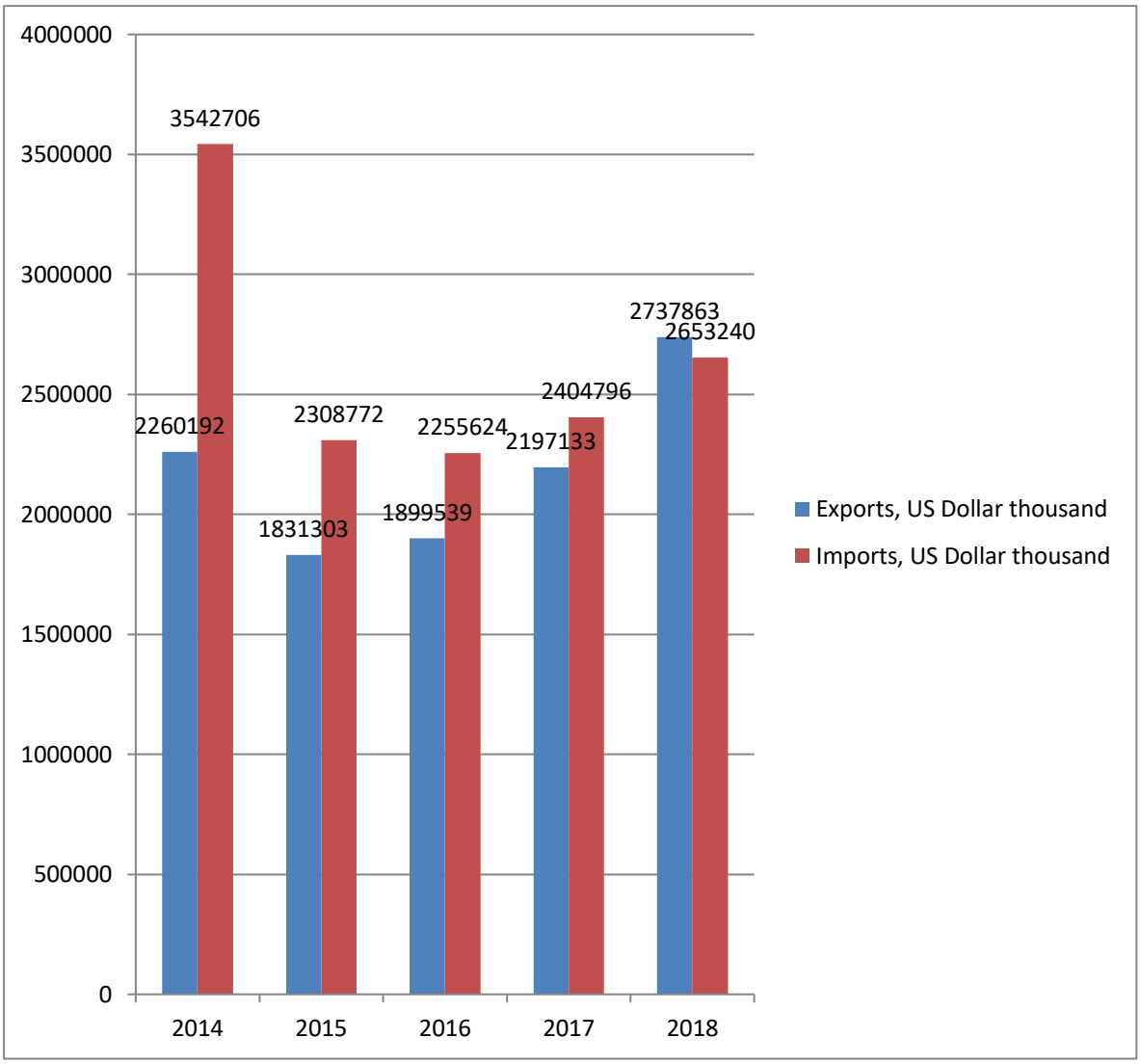

Figure 1: Dynamics of export and import of paper products and cardboard (List of supplying markets for a product imported by Russian Federation)

Figure shows that imports of products surpass exports in terms of money. In our opinion, this is due to the fact that primary commodity are exported, while high-quality finished products are imported. In 2015, there was a slight decline in exports, but by 2017 the level of 2014 was already exceeded. At the same time, imports fell by almost a third, and in 2018, for the first time in 5 years, imports were less than exports.

3. PULP AND PAPER INDUSTRIES MARKET CONCENTRATION

3.1. Concentration ratio

There are 1930 enterprises in the pulp and paper industry. We reviewed 250 companies whose market share is more than 0.4%. To determine the concentration ratio we calculated the market share for revenue for 2017 and 2018, the Herfindahl-Hirschman index, concentration ratio, and entropy rate. Table 1 presents data on how much of the market is accounted for 10 leading firms, based on the amount of annual revenue.

Table 1: Calculation of market shares (Rating of organizations by revenue)

№	Name of the company	Region	Market share 2017	Market share (%) 2018
1	JSC "ILIM GROUP"	Saint-Petersburg	22	29,74
2	JSC "MONDI SYKTYVKAR LPK"	Republic of Komi	11	12,58
3	CJSC «INTERNATIONAL PAPER»	Leningrad Oblast	8	8,79
4	JSC «TETRA PAK»	Arkhangelsk Oblast	6	6,50
5	JSC «ARKHANGELSK PULP AND PAPER FACTORY»	Saint-Petersburg	5,6	5,20
6	LLC "KARELIA PULP"	Republic of Karelia	3,6	4,34
7	JSC "SEGEZH PULP AND PAPER FACTORY"	Perm Krai	3,3	3,13
8	JSC "SOLIKAMSKBUMPROM"	Tver Region	2,5	2,01
9	JSC "ARCHBUM"		1,8	-
10	JSC “MARI PULP AND PAPER COMBINE”	Mari El Republic	1,1	1,82
11.	JSC "VOLGA"	Nizhny Novgorod Oblast	0,9	1,71

3.1.1. Market concentration

One of the most significant indicators while reviewing any industry is the manufacturing capacity concentration ratio on the market. (Rating of organizations by revenue) .Thus, calculated concentration ratio for ten firms in 2017 and 2018 amounted to:

Year 2017 CR_{10} = 22+11+8+6+5,6+3,6+3,3+2,5+2+1,8 =65,8%

Year 2018 CR_{10} = 29,74+12,58+8,8+6,5+5,2+4,34 +3,13 + 2+ 1,82 =75,82%

Received indicator allows characterizing the pulp and paper industry as moderately concentrated, however, the obtained value is very close to the point after which the industry can be considered as highly concentrated. Moreover, the value of the indicator is growing. This fact should serve as a signal for the antimonopoly service with the subsequent increase in stringency of regulations for merging enterprises.

3.1.2. The Herfindahl-Hirschman index

To confirm or refute the need for the antimonopoly service, we consider the Herfindahl-Hirschman index. It is defined as the sum of squares of market shares.

$$\mathbf{HHI} = \sum_{\mathbf{i=1}}^{\mathbf{n}} \mathbf{S_i^2}$$

We calculated the Herfindahl-Hirschman index of the industry. Indexes are calculated for two years (Source: Rating of organizations by revenue).

HHI (2017) = 1594.65
HHI (2018) = 1247.71

Since 1000<HHI<2000 this points to the fact that the forest industry is moderately concentrated. If we calculate the Herfindahl-Hirschman index for individual types of production, the concentration level will be even higher: for pulp industry HHI10 (2014) = 6800, HHI10 (2018) = 5900. We can say that firms in the industry split the market, each specializing in the production of its own product range, although formally most firms produce a wide range of products. But the situation with the production of paper and cardboard is different: HHI10 (2014-2019) = 490-435. That is, the Herfindahl-Hirschman indexes for 5 years vary from 498 to 435, which characterize the market as competitive.

3.1.3. Entropy rate

The entropy index shows the average value of the logarithms of the value inverse to the market share, weighted by the market shares of firms. Consider the first top 10 leaders. (Rating of organizations by revenue)

$E = \sum_{i=1}^{n} Si \ln \frac{1}{Si}$, where Si –market share of the i-th company

E_{10} (2017) = 1.646492
E_{10} (2018) = 1.632092

The entropy rate also indicates a high level of concentration.

3.2. Entry Barriers

Entry barriers into the industry are sizeable in view of the fact that at the local level almost all the territory entities of the Russian Federation have already been provided with products, and export has long been the prerogative of the country's largest enterprises. Consequently, the level of competition in the domestic market of pulp and paper products is high. Additional difficulties in entering the industry are created by the high cost of equipment. Barriers to entry into the forest-industry complex market are also:

- significant initial capital investments with long payback period,
- the lack of necessary human resources in the companies,
- transport limitations (they show itself in the fact that during timber logging there is poor transport accessibility: forest production is remote from the raw material resources base and is located at a considerable distance from the potential wood consumer, and in addition, the road density in the base itself is low).

An important administrative barrier is difficulties in acquisition of a land. This factor is important for entering the market for paper wood, sawmill products. Also the strategic barriers should be mention here:

- Companies price strategies. Market leaders have much lower prices than new firms. Because of that, a large number of firms were either takeover or busted. In this case, the large enterprise is OJSC «Mondi SYKTYVKAR LPK ».
- Non-cost strategies. Television advertisement informs households only about leaders, so small and new companies stay in the background.

3.3. Import

The Russian market is not a closed system. As shown in paragraph 2.3, import of pulp and paper products almost equal as exports. Estimate how imported product affects on market concentration. Import ratio in the total volume of products consumed in the country showed in the figures 2 and 3. As we can see, over the past two years it equals to ¼, which to some extent undermines the monopoly position of Russian firms.

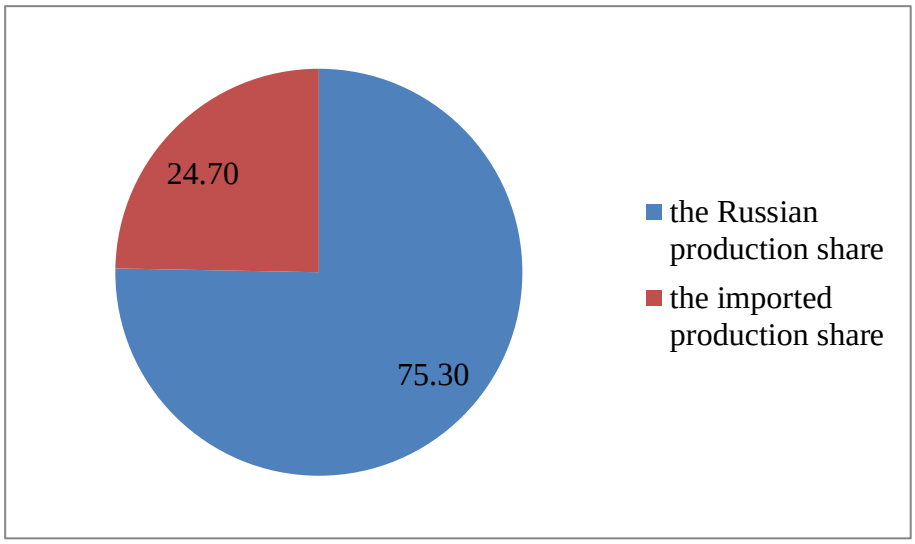

Figure 2: Russian pulp and paper products market import ratio, 2018 (List of supplying markets for a product imported by Russian Federation)

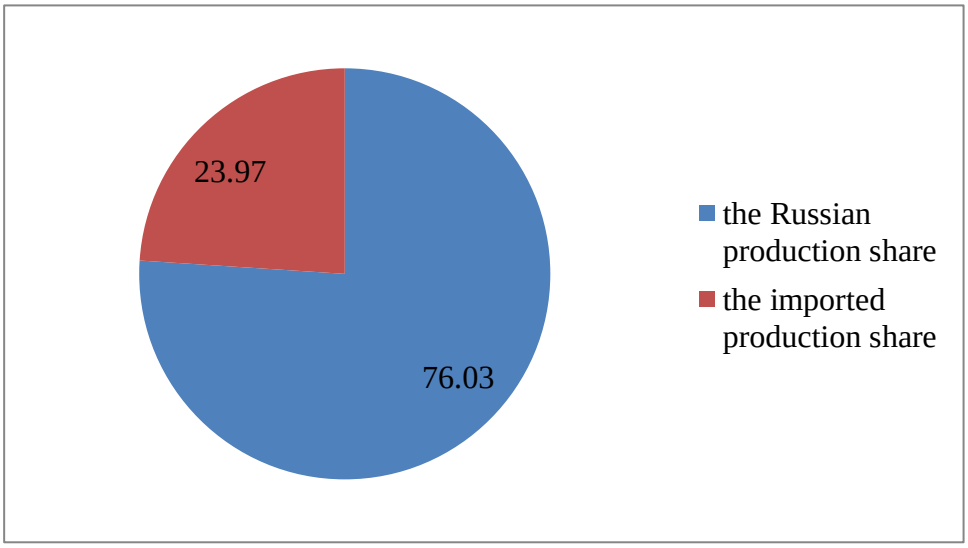

Figure 3: Russian pulp and paper products market import ratio, 2017 (List of supplying markets for a product imported by Russian Federation)

4. INDUSTRY AND MARKET POWER

Market power is the ability of a firm or group of firms to influence on market parameters. These market parameters should include production and sales volumes, market price levels, profitability and profit margins, composition of sellers and buyers, barriers and more. In practice, market power often shows itself in the form of monopolistic activity, which in Russia refers to the abuse of dominant position by an economic entity or group of persons, various agreements or concerted practices prohibited by antimonopoly laws, as well as other actions

(inaction) recognized in accordance with federal monopolistic activity laws. For a better understanding of market power in the forest industry, it is necessary to calculate the indicators of monopoly power. The Bane Index is defined as the ratio of a firm's profit to the value of its assets; it shows the return on each monetary unit invested in production:

$$r = \frac{\textbf{economic profit of the company}}{\text{equity capital of the company}}$$

The second important indicator of monopoly power is the Tobin's q. It is calculated as the ratio of the market value of a firm to its net assets.

$$q = \frac{Cp}{Cb},$$

Table 2 presents these indicators for the three leading companies for 2017.

Table 2: Calculation of the indicators of monopoly power, 2017 (JSC «Ilim Group», JSC «MONDI SYKTYVKAR LPK»

Name of the company	The market price of the company, billion rubles	Net assets of the company, billion rubles	Economic profit, million rubles	Owned capital, mln руб	Tobin Index, q	The Bane Index, B
«ILIM GROUP»	29, 642	22,6	18 956	22 439	1,311	0,84
«MONDI SYKTYVKAR LPK»	16, 25	44, 324	13 018	44 324	0,37	0,29
«ARKHANGELSK PULP AND PAPER FACTORY»	7,665	16, 575	5 816	16 564	0,46	0,35
«SOLIKAMSKBUMPROM»	0, 476	10, 302	45	10 302	0,046	0,004

Table 2 shows that the «ILIM GROUP» has greater market power compared to other companies. If we look into the rest of the companies in the forest industry, then the Bane coefficient is different from zero, which indicates the existence of at least a small volume of market power in the hands of these companies. The Tobin's q of the «ILIM GROUP» q> 1, which means that the level of profitability for the company is higher than necessary to keep the company in the industry, which means that in the long run period the company makes a positive profit, therefore, has a certain market power. The more is q, the stronger the firm's power. If q <1, this means unfavorable times for the company, perhaps the company is on the verge of bankruptcy and is close to being shake-out from the market. Based on the above, we can say that the position of the «ILIM GROUP» is quite stable. By analyzing the rating of large timber companies, we can see that for several years the rating has remained almost unchanged. Let's take a closer look at the leader - «ILIM GROUP». Figure 4 shows revenue of the company for the last 10 years. As we can see from the diagram, revenue of the company in nominal terms increased in four times.

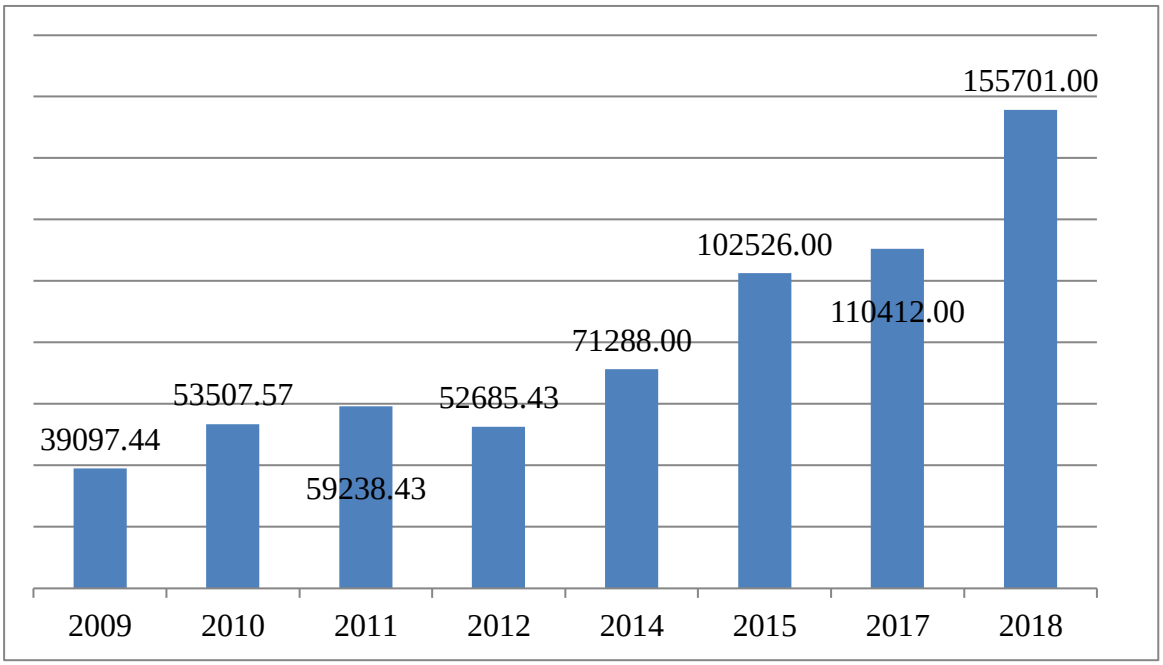

Figure 4: The revenue dynamics of the «ILIM GROUP» («Ilim Group» JSC)

5. CONCLUSION

Despite the crisis, the forest industry is developing sustainable. Our research is showed that its share in GDP has no big changes. It is at 4.5-5% GDP. The 2014 crisis in Russia had virtually no effect on the industry. In monetary terms, exports slightly (by 5-7%), and the share of forest resources in total exports did not change. The same pulp and paper industries. Its production is increasing annually. In 2018 it was 8.7 million tons. We estimate market concentration pulp and paper branch. We see high industry concentration. First the market concentration was 65,8% in 2017, and she grew to 75,8%,in 2018. The Herfindahl-Hirschman index was 1595 in 2017,but it became 1247 in 2018. But t's still a high coefficient. It demonstrates a moderately high concentration in the industry. The entropy index for the first top 5 leaders is 1,632092 in 2018. It's high enough. At the same time, the Bane Index showed that the «Ilim Group» has greater market power that other companies. Tobin index q> 1 for the Ilim Group. This means that the level of profitability for the company is higher than necessary.
Pulp and paper industries has good development opportunities.

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BORDER LEGITIMACY OF CORPORATE CULTURE

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ABSTRACT

This article examines the corporate culture in the aspect of the requirements of legal norms for its content, degree of imperativeness, mechanisms of formation and control. The relevance of the research is determined by the potential risk of violation of individual rights as a result of the implementation of the values and norms of corporate culture. Based on the study of regulatory legal acts and other sources of law, the content of the corresponding subject of legal regulation is established. The article analyzes domestic and foreign law enforcement practice on the legal regulation of relations arising in connection with the existence of rules and standards of corporate culture; special attention is paid to judicial practice. The authors aim to draw the attention of the scientific community and the legislator to the need for a systematic approach to establishing the limits of the legitimacy of corporate culture. It concludes on the place and role of law in the system of social regulation of relations generated by corporate culture.

Keywords: *Corporate culture, Personal rights, Law, Legitimacy of corporate culture, Law enforcement practice*

1. INTRODUCTION

Modern society knows many regulators destined to streamline the behavior of people in various fields and within different communities: legal norms, moral standards, traditions and customs, etc. Most states give collective entities the right to independently regulate intraorganizational relations. The resulting corporate culture is seen as an essential factor in the effectiveness of the organization. At the same time, corporate culture can create risks for both the organization and its employees. Legal practice gives reason to talk about the criminal nature of the corporate culture of individual organizations (Antonova 2011). In addition, a «toxic» corporate culture is mentioned in scientific and journalistic discourse (See, for example: Konovalova 2019). In this regard, the following questions seem reasonable. How arbitrary can the content of corporate culture be? What means and methods of its formation and control can be used by the organization? What is the degree of imperative requirements of corporate culture? Answers to these and other questions can be given by referring to doctrinal provisions, legislation and law enforcement practice.

2. CLARIFICATION THE VOLUME AND THE CONTENT OF THE CONCEPT «CORPORATE CULTURE» FOR THE PURPOSES OF THE RESEARCH

The current Russian legislation establishes a variety of legal forms of collective formations, each of which may have its own internal culture, which has its own specifics depending on the specifics of the form, goals, educational status and other characteristics. Consideration of corporate culture in its broadest sense - as applied to all collective entities - within the framework of a single study is neither possible nor expedient.

This article is devoted to the study of the internal culture of commercial corporate organizations. In the interests of the study, the use of the terms «corporation», «organization» and «company» as synonymous is seen as acceptable. For the first time, the term «corporate culture» was used in the 19th century by German field marshal Helmut von Moltke as applied to relations established in the officer environment (Krivonosov 2011, p. 364). Currently, the literature provides a wide variety of definitions of the concept of «corporate culture». For example, the American scientist D. Newstrom understands corporate culture as «a set of norms, rules and standards developed on the basis of corporate values supported in the field of corporate relations» (Krivonosov 2011, p. 366). N.V. Tesakova defines corporate culture as «the rules of behavior recognized in a particular organization (values, social, communicative and moral norms, rituals, corporate identity) and management rules (organizational structure, communications and personnel policy)» (Krivonosov 2011, p. 367). As can be seen from the above examples, the content of the concept of «corporate culture» includes such elements as values and norms. It should also be emphasized that corporate ethics is an important component of corporate culture. The foregoing is confirmed by the already existing practice of understanding corporate culture that has developed in a number of the largest Russian companies at the federal level. So, Public Joint Stock Company «Sberbank» defines its Code of Corporate Ethics as «standards of conduct adopted by the Bank based on our mission and values, guaranteeing honest and fair relations with our team members, clients, partners, as well as compliance with laws and internal policies» (Official website of Sberbank PJSC). Public Joint Stock Company «Gazprom neft» on its official website indicates that «the core of Gazprom neft's corporate culture is the company's values: honesty, leadership, mutual respect and trust, the mentality of the winner and the responsible owner. The directions and tasks of developing corporate culture are determined by the company's strategy and the challenges faced by the oil industry» (Official website of Gazprom neft PJSC). The Code of Ethics and Corporate Conduct of Public Joint Stock Company «MegaFon» «contains the principles of business conduct that all employees and members of the board of directors of MegaFon PJSC and its subsidiaries with a 100% participation share must follow. MegaFon recommends that its affiliates and subsidiaries with an interest of less than 100% be guided by these standards, reflecting them in their Codes». At the same time, the Code under study emphasizes that «it is impossible to give recommendations for each situation in which an employee of the Company may find himself in real life. Therefore, we expect that you will always be guided by the values of the Company, be guided by common sense and follow the general standards compiled in the Code» (Official website of MegaFon PJSC). Due to the fact that many companies in one form or another establish standards of conduct for their employees, the judiciary, when considering certain labor and other disputes, in their decisions also refer to the concept of «corporate culture» (See, for example: Resolution of the FAS of the Urals District 2010). However, the Russian legislator does not use this term directly. Clarification of the scope and content of the concept of «corporate culture» allows us to proceed to the study of its legitimacy.

3. LEGALITY OF CORPORATE CULTURE AND ITS BORDERS

In its most general form, legitimacy is «the conformity of the phenomena of social life (activities or results of activities of legal entities) with the requirements and permissions of state will contained in the norms of law. Legality is embodied not only directly in the behavior of legal entities, but also in such legal documents as regulatory acts, law enforcement acts» (Barikhin 2008, p.521). Given that the content of corporate culture includes the values and norms established by the organization, the question of the legitimacy of corporate culture is reduced to their compliance with legal norms. Thus, on the one hand, corporate culture rules are an element of the system of legal regulation of internal corporate relations for employees of a particular company and can be identified with the norms of local regulations.

The rules of corporate culture have a number of characteristics that are characteristic of legal norms: general nature, repeated use, etc. The issue of the mandatory rules of corporate culture remains a controversial issue, which will be discussed in more detail in the article below. At the same time, on the other hand, relations arising in connection with the existence of rules and standards of corporate culture themselves need legal regulation, and sometimes legal protection. In the context of the theme of the legitimacy of corporate culture, one cannot fail to touch on the concept of «compliance», which is actively affirmed in modern business practice, which is usually understood as the conformity of the organization and its employees with mandatory requirements, and the system of means adopted by the company to ensure this conformity. If we understand compliance as the conformity of the organization and its employees with the mandatory requirements, then the distinction between compliance and the legitimacy of corporate culture can be carried out as follows. Compliance is based not only on the requirements of legal norms, but also ethical, as well as standards of the organization. Compliance implies that the means of ensuring this conformity are targeted, while the corporate culture of a particular organization may be legitimate without the implementation of compliance programs. However, the implementation of compliance practices in the content of corporate culture allows ensuring the legitimacy of the latter and minimizing the risks of going beyond its borders. Corporate culture is embodied in the rules of the internal labor schedule of the company, labor and collective labor contracts, job descriptions. In addition, the organization may issue an independent internal act on corporate standards (Corporate Code, Code of Corporate Conduct, etc.), examples of which were given in the article earlier. However, in such a case, the question arises about the status of such an act, as well as the rules for its development, approval and distribution for review among employees. It seems that the legitimacy of corporate culture is directly related to the requirements of legal norms for its goals and objectives, content, forms of consolidation, subjects of formation, means and methods of formation and control, as well as the degree of its imperativeness. These parameters in their entirety determine the borders of the legitimacy of corporate culture. The analysis of the current Russian legislation allows us to highlight the following aspects of the legal regulation of the «rule-making» of the employing organization. First of all, it is necessary to pay attention to the fact that in an employment relationship, an employee primarily should be considered as a person. That is, the basis of his status as an employee of a particular company should be the norms that form the legal status of the individual. Such norms should include, for example, the provisions of the Constitution of the Russian Federation, enshrining the right to dignity of an individual (article 21 of the Constitution); the right to liberty and security of person (article 22 of the Constitution); the right to privacy, personal and family secrets, protection of one's honor and good name, the right to privacy of correspondence, telephone conversations, postal, telegraphic and other communications (article 23 of the Constitution); freedom of thought and speech (article 29 of the Constitution); the right to free labor (article 37 of the Constitution) and others. An important role in regulating the legal status of an individual is played by the norms contained in relevant international acts (See, for example: International Covenant on Civil and Political Rights (1966), International Covenant on Economic Social and cultural rights (1966)). Thus, the rules and standards of corporate culture cannot violate the rights of an employee included in his legal status as an individual. Directly in the field of labor relations, the legislator in article 2 of the Labor Code of the Russian Federation enshrined the principle of ensuring the right of workers to protect their dignity during the period of employment. However, according to O.A. Kursova, on this all «labor regulation of relations to protect the dignity of the person of labor is exhausted. The Russian labor legislation does not provide for any special mechanisms, norms and institutions for protecting the dignity of an employee during the period of work» (Kursova 2016, p. 377). In article 8 of the Labor Code of the Russian Federation it is established that the norms of local regulations worsening the situation of workers in comparison with the established labor

legislation and other regulatory legal acts containing labor law, a collective agreement, agreements, as well as local regulations adopted without compliance with the established procedure for taking into account the views of the representative body of workers is not subject to application. In such cases, labor legislation and other regulatory legal acts containing labor law standards, a collective contract, agreements are applied. Consequently, corporate culture norms cannot infringe on the rights of an employee stipulated by labor legislation. In addition, from the contents of this article, we can conclude that there is a certain procedure for the adoption of local regulations, including those affecting corporate culture or fully devoted to the latter. So, in cases provided for by the Labor Code, other federal laws and other regulatory legal acts of the Russian Federation, collective contract, agreements, the employer, when adopting local regulatory acts, takes into account the opinion of the representative body of workers (if there is such a representative body). A collective contract, agreements may provide for the adoption of local regulations in agreement with the representative body of workers (article 8 of the Labor Code of the Russian Federation). A specific procedure for taking into account the views of the elected body of the primary trade union organization when adopting local regulations is provided for in article 372 of the Labor Code of Russia. These legislative provisions allow us to conclude that the subjects and mechanism of the formation of corporate culture as criteria for its legitimacy may vary to each individual organization. In the current context, it seems appropriate to pay special attention to the role of the governing body of the company as a subject of corporate culture formation. It is interesting to note that the judicial practice of a number of countries uses the concept of "criminal corporate culture," which consists of either intentional violations by persons performing managerial functions (including by encouraging, approving, or connivating illegal activities on behalf of and (or) in the interests of the corporation), either in anonymous collegiality when making a decision, or in omissions made in the formation of corporate policy. Such omissions entail systematic violations of legislative requirements, which become the norm in the activities of the corporation and, as a result, lead to a crime (Antonova 2011). The above indicates a significant role of the governing body of the corporation in the process of forming a corporate culture and monitoring the implementation of its standards. It seems that the actions of the governing body in the framework of these processes are largely due to the goals and objectives of the corporate culture in a particular company. The goals of corporate culture can be (See, for example: Slesarev 2018): creating a favorable working atmosphere, which involves the establishment of certain requirements for the behavior of employees in relations with each other; creating a certain image of the company, which leads to the establishment of requirements for the appearance of the employee, as well as the manner of communication with customers and contractors; rational and careful use of the employer's property, which causes bans on the use of corporate property for personal purposes of an employee; the most effective performance by employees of their duties, which entails the prohibition during the working hours of using the telephone and the Internet for personal purposes, other external things that distract from the performance of labor duties, etc. The indicated goals and objectives, means and methods of achieving and solving them seem rational and justified, however, due to the evaluation of many factors in this aspect, the risk of going beyond the bounds of the legitimacy of corporate culture in terms of individual means of achieving legitimate goals is quite high. Evaluation of the legitimacy of the means and methods of forming a corporate culture, as well as monitoring compliance with the requirements arising from it, is possible when these means and methods are part of the content of the corporate culture, that is, they have been fixed in official documents of the organization. Special attention deserves the mandatory familiarization of employees with the rules of the corporate culture of the organization, since, in accordance with article 21 of the Labor Code of the Russian Federation, the employee has the right to complete reliable information about working conditions.

This right of the employee corresponds to the obligation of the employer to acquaint employees under signature with the adopted local regulations directly related to their labor activity (article 22 of the Labor Code). Moreover, according to article 68 of the Labor Code, the employer is obliged to familiarize the employee against signature with the internal labor regulations, other local regulations directly related to the employee's labor activity, and a collective agreement before signing the labor contract. Based on the foregoing, the rules of corporate culture should be brought to the attention of each employee of the company. Summarizing the above, it is possible to deduce the conditions of imperative rules of corporate culture, the simultaneous presence of which will allow us to speak about its legitimacy: the rules do not contradict the norms of the current legislation; the rules are endowed with the status of a local regulatory act; the rules are formulated concretely and specifically, which excludes their evaluative understanding; the employee is familiarized with the rules for signature. In the presence of all the above conditions, the obligation to comply with the rules of corporate culture should be equated with the other labor duties of the employee, even if these rules are not directly related to the implementation of his labor activity. However, it should be noted that in practice there may be situations when the norms and values of corporate culture do not violate any specific rule of law, but at the same time contradict its general and/or principles of any branch of law. It also indicates the illegality of the requirements of corporate culture. In the advanced practices (legislative, law enforcement, corporate) of a number of states, the standard has been the formation of effective mechanisms to counteract such a negative phenomenon in the sphere of internal relations of corporations as mobbing, usually understood as bullying, a systematic psychological oppression of a team member by its other members. The absence of mechanisms of protection against mobbing in local regulatory acts of the organization (especially on the part of the boss - bossing) shows the tolerance of corporate culture to this phenomenon. It seems that if national law does not provide a requirement for the company to establish anti-mobbing procedures, then the presence of international legal regulation allows us to consider this criterion of the legitimacy of corporate culture as perspective. The European Social Charter, ratified by the Russian Federation, refracts the content of the principle of protecting human dignity with respect to social and industrial relations. The Global Occupational Safety Strategy adopted by the International Labor Organization recognizes as one of the foundations of an labor safety culture a systematic guarantee of the right of workers to protect their dignity during work and to protect themselves from psychological violence at work (Kursova 2014, p. 29).

4. RESPONSIBILITY OF THE EMPLOYEE FOR VIOLATION OF THE REQUIREMENTS OF A LEGAL CORPORATE CULTURE

The issue of the legitimacy of corporate culture goes into practical terms when bringing an employee to disciplinary liability for non-compliance with corporate culture standards. The previous section examined the criteria that form the boundaries of the legitimacy of corporate culture, determining the conditions under which an employee is obliged to follow the rules of corporate culture and under which the employee, accordingly, can be brought to disciplinary liability for failure to comply with corporate standards. The use of some of these criteria in the practice of justice can be seen in the following examples. In 2016, an employee of Sberbank PJSC filed a lawsuit with a view to declaring it illegal and canceling orders to bring to disciplinary liability, declaring it illegal and canceling the order of dismissal, reinstatement, compensation for material and moral harm. The employment contract between the plaintiff and Sberbank PJSC was terminated on the basis of paragraph 5, part 1, article 81 of the Labor Code of the Russian Federation - at the initiative of the employer due to repeated non-fulfillment by the employee without good reason of labor duties in the presence of disciplinary sanction. One of the reasons for bringing the plaintiff to disciplinary liability was a «violation of the Sberbank Code of Corporate Ethics, Sberbank PJSC's Internal Labor Rules, which resulted in an incorrect

appeal to the senior manager for servicing the additional office, as well as rude behavior - using obscene expressions in the presence of employees of the additional office of the bank in violation of clause 2.3 of the Corporate Ethics Code of Sberbank PJSC». The courts of three instances, having verified compliance with the procedure for imposing disciplinary sanctions, recognized them as lawful and refused to satisfy the requirements stated by the plaintiff (Bobrovskaya 2017). In this case, the court made a decision, taking into account the formal consolidation of the requirements of the organization's corporate culture. Omsk Regional Court with its appeal ruling in the case No. 33-5647/2014 also resolved a labor dispute over the employee's compliance with the corporate requirements of the company in favor of the employer, upholding the decision of the trial court to refuse to reinstate the plaintiff at work (Appeal ruling of the Omsk Regional Court). During the trial, it was revealed that the employer (Plus-Bank OJSC) repeatedly imposed disciplinary sanctions on the plaintiff, the last of which was the dismissal under paragraph 5 of part 1 of article 81 of the Labor Code of the Russian Federation - on the initiative of the employer due to repeated non-performance by the employee without good reason in the presence of disciplinary action. One of the disciplinary sanctions that the plaintiff challenged was a reprimand imposed by the employer for violating the plaintiff's requirements for the dress code, while the plaintiff stated that he had not been acquainted with the instructions for appearance. The case materials established that the plaintiff was familiarized with the job description of the head of the department for working with problem assets, the Internal Labor Rules, containing article 9 – «Requirements for the appearance of employees», as evidenced by his signature. In accordance with the said Bank Rules, in order to create a corporate culture and to maintain the business image of the bank employees and the business reputation of the bank as a whole, all employees must comply with the mandatory appearance requirements established by the Rules. Failure to comply with the requirements established by the Rules for the appearance of bank employees is a violation of labor discipline, for which disciplinary measures can be applied to the employee. In his submissions on this fact, the plaintiff denied a violation of the internal labor regulations, but the violations were confirmed by witness statements. Having assessed the evidence in the case in aggregate, the court refused the plaintiff to declare the order illegal. This example illustrates the fact that in judicial practice such criteria of legitimacy of corporate culture as formalization of its requirements, the obligation to familiarize the employee with them, as well as their proper, not unlawful and justified purpose, are reflected. Converse examples can also be cited when the court came to the conclusion that the employer's decisions on disciplining the employee on the basis of non-compliance with the requirements of the corporate culture were unlawful. In 2013, the Perm Regional Court in its appeal ruling in the case No. 33-7779-2013 upheld the decision of the previous court to declare the disciplinary sanction in the form of a reprimand unlawful (Appeal ruling of the Perm Regional Court 2013). The employee filed a lawsuit against INTER RAO - Electric Power Plants OJSC to invalidate the disciplinary sanction in the form of a reprimand, to recover non-pecuniary damage, expenses for the representative's services. The reason for bringing the plaintiff to disciplinary liability was a letter received by the employer from the Office of Rospotrebnadzor in the Perm Territory, which stated that at the interagency meeting the plaintiff publicly stated in the presence of all participants in the meeting: «It seems that Rospotrebnadzor is coming to us like a feeding trough». The employer regarded the actions of the employee as violating the Code of Professional Ethics of the company, which states that the employee must behave impeccably, avoid deviations from ethical standards and maintain a positive reputation and image of the organization in business circles during working and non-working hours, and announced a reprimand. The employee appealed the order in court, motivating the appeal by the fact that the act for which she was brought to disciplinary responsibility is not a disciplinary offense, and her statement is offensive. The courts of two instances agreed with the position of the plaintiff, indicating that the phrase uttered by her could

not be qualified as a disciplinary offense and as improper performance of her duties. The main argument of the court was the absence in the Code of Professional Ethics of a clear definition of what constitutes a deviation from ethical standards and which deviation may be qualified as a disciplinary offense involving disciplinary action against the employee. The general wording contained in the Code does not allow to distinguish between employee behavior, which entails only public censure, and employee behavior, which forms part of a disciplinary offense. Thus, based on the revised example, we can say that the non-specific interpretation of the requirements of corporate culture, including the unjustified use of assessment categories, violates the principle of legal uncertainty and is a criterion for the illegitimacy of corporate culture. In addition, it should be emphasized that in order to comply with the requirements of a corporate culture, the legitimate need for the simultaneous presence of all criteria. So, the criterion of formally enshrined provision of corporate ethics was not enough to recognize the decision of the employer as legal. In the context of considering the issue of disciplining an employee for violation of corporate culture requirements, it should be noted that the Supreme Court of the Russian Federation indicates the need to comply with the general principles of legal responsibility when applying a disciplinary sanction to an employee, such as justice, equality, proportionality, legality, wine, humanism (paragraph 53 of the Resolution of the Plenum of the Supreme Court of the Russian Federation No. 2 «On the application by the courts of the Russian Federation of the Labor Code of the Russian Federation» 2004).

5. CONCLUSION

According to the results of the research, it seems possible to conclude the following. The current Russian legislation does not use the concept of «corporate culture». At the same time, in practice, corporate culture acts as an important element of the legal regulation of relations taking shape within a single organization. The aforesaid is confirmed both by an increase in the number of companies establishing corporate culture rules in relevant local acts, and by the widespread use of the term «corporate culture» in court decisions at various levels. Corporate culture as a phenomenon and the absence of specific requirements on the part of the legislator for its content, on the one hand, are called upon to act as an element of democratization in the field of intraorganizational relations of non-state commercial legal entities. But on the other hand, such freedom of the employer can become the basis for the risks of going beyond the boundaries of the legitimacy of corporate culture. The legitimacy of corporate culture is determined by the requirements of legal norms for its targets and goals, content, forms of consolidation, subjects of formation, means and methods of formation and control, as well as the degree of its imperativeness. These parameters in their entirety outline the borders of the legitimacy of corporate culture. The implementation of compliance practices can purposefully and systematically ensure the legitimacy of the corporate culture and minimize the risks of going beyond its boundaries. The inclusion of anti-mobbing mechanisms in the structure of corporate culture of organizations should be recognized as perspective. Thus, it seems necessary to develop a systematic approach to establishing the limits of the legitimacy of corporate culture on the part of the subjects of its formation, as well as the state. Obviously, the central place and the main role in the system of social regulation of relations generated by corporate culture belongs to the law as the most effective means of ensuring the balance of interests of the individual, society and the state.

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THEORY OF THE RATIONAL CHOICE OF THE EMPLOYEE IN THE BEHAVIORAL ECONOMY OF THE ORGANIZATION

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ABSTRACT

The article is devoted to the study of the theory of rational choice of an employee in the development of the organization's behavioral economics. The purpose of the work is to investigate the principle of rationality of choice in the behavioral economics of an organization as part of an employee's economic behavior model and determine the practical forms of its application. The methodological base of the study includes the basic conceptual provisions of the theory of rational choice and the behavioral economics of an organization. The work uses general scientific research methods: the method of comparison, system analysis, systematization of information and expert assessments. The theoretical and methodological foundations of the interpretation of the concepts of "rational employee behavior" and "irrational employee behavior" in economic science are revealed. The conclusion is made about the appropriateness of using the concept of rational employee behavior only in a certain context. This methodological premise led to a feature of the authors' approach to the analysis of the principle of rationality, which is considered as an integral element of the employee model in the behavioral economy of the organization. The main patterns and factors that affect the rational choice of an employee in an organization are identified. The factors determining the rational choice of an employee include: satisfaction of primary and secondary needs, orientation to one's own interest, realization of labor motives. The study identified problems in the behavioral economics of the organization that interfere with the rational choice of the employee, and affect his economic behavior. Models of the economic behavior of an employee who makes their choice rationally and irrationally are proposed.

Keywords: *employee economic behavior model, employee rational choice theory, methodology, organizational behavioral economics, rationality principle*

1. INTRODUCTION

Neoclassical economic theory assumes that people are rational beings who know what they want, and they don't need help in this. They can improve their well-being through their rational behavior, which will lead to rational choice. Scientific discussions related to issues of rational behavior, rational choice of people in economic activity have a long history. According to A.A. Ilyukhina, S.I. Ponomareva S.V. Ilyukhina, "the traditional dilemma of rational choice in the neoclassical model of man is still in the field of vision of economists: a methodological conflict between the theoretical model of choice (rational maximization of utility) and its actual implementation (under the influence of various psychological" features ", habits, emotions, culture, etc. .d.) "[Ilyukhin, Ponomareva, Ilyukhin, 2019]. This dilemma applies to both macroeconomics and microeconomics. The principle of rationality, rational behavior, rational choice is mainly investigated at the macroeconomic level of consumers and firms, where it is about maximizing utility [Avtonomov, 2017, Belyanin, 2017, Zaostrovtsev, 2017, Kaneman, Tversky, 2003, Kapelyushnikov, 2018, Ponomareva, 2018]. Few scholars are exploring the rationality of choosing workers in an organization. Based on what motives, preferences, the employee makes a decision and makes his choice in favor of a particular option for action in labor relations. In an organization, an employee can act as a rational person on the basis of common sense, logically, without emotions, reflexes, intuition and instincts, achieving an optimal result, trying to get the most satisfaction from work and its remuneration. To achieve this he needs to:

- have complete, reliable, up-to-date information about employers in the labor market, on this basis, choose an employer;
- he must know his professional competencies for career development;
- he must know his needs, interests, labor motives, which are of great importance to him;
- he must know his preferences in order to make a rational choice between the proposed rewards.

If these conditions are not met, then the employee will not be able to make a rational choice. If he does not know about his preferences, it will be difficult for him to satisfy his desires. Changes in the needs, interests, motives of work and their significance will not allow the employee to act on the basis of preferences. In this case, his actions will lose their meaning. At the same time, the rationality of the choice of a decision made by an employee is influenced by many factors, both of a fundamental internal nature, for example, the employee's cognitive capabilities associated with risky behavior and secondary external effects that will not entail threats to lose one or another benefit . Thus, the aim of the work is to investigate the principle of rationality of choice in the behavioral economics of an organization as an immanent part of an employee's economic behavior model and determine the practical forms of its application.
To achieve this goal, it is necessary to solve a number of problems that determined the structure of the study:

- determine the essence of the principle of rational behavior in terms of rational choice of the employee;
- identify the factors that affect the implementation of rational choice of the employee;
- identify problems associated with the rational choice of the employee and their impact on the economic behavior of the employee in the organization;
- propose a definition of the concepts "rational employee behavior" and "irrational employee behavior";
- identify areas of practical application of research findings in the behavioral economics of an organization.

During the study, we applied a comprehensive, systematic approach to achieving the goal and a number of scientific methods, such as observation, analysis and synthesis of information and expert data.

2. ESSENCE OF THE PRINCIPLE RATIONALITY OF BEHAVIOR AND FACTORS INFLUENCING THE IMPLEMENTATION OF THE RATIONAL CHOICE OF THE EMPLOYEE

The essence of the principle of rationality is mainly considered by scientists in approaches to the economic behavior of a person, his individual and social actions in the processes of production, distribution, exchange and consumption of material and spiritual goods. Based on the economic behavior of a person in the above processes, models of human behavior are created that determine the theoretical laws of his choice in a given situation. At the heart of the rationality of the employee's choice is the principle of rationality. We single out several approaches that affect the rational choice of an employee. The first pattern was determined by marginalists (G. Gossen, A. Cournot, J. Dupuis, later K. Menger, L. Walras, W. S. Jevons) and neoclassicists (I. Fischer, A. Marshall, A. Pigou). In their theory, man is presented as a selfish being with complete (perfect) information, and his main motive is monetary interest. If you transfer this pattern into organizations, then it can be interpreted as follows: the employee seeks to increase his cash income and satisfy his needs as much as possible within the framework of certain restrictions. An "economic worker" is a rational person who is able to determine priorities in his preferences and strives to achieve his personal goals, having complete information and the freedom of choice of any employer. Thus, the employee who makes his choice on the basis of the principle of rationality wins, and those who do not adhere to rational behavior lose. The second regularity was proposed by J. M. Keynes and his followers and representatives of institutionalism (T. Veblen, W.K. Mitchell, D.R. Commons, G. Myrdal, R. Heilbroner, K. Galbraith), it takes into account the theory of bounded rationality in human economic behavior. Limited rationality is associated with the fact that people have cognitive abilities that are individual for everyone, they have certain limits, including the ability to analyze the information that is needed to make decisions. Since the structure of rational choice is becoming more complicated, the needs include not only the receipt of material goods, but also social needs are taken into account, such as following norms of behavior, rules, traditions, etc. One of the authors of the third approach was G. Becker, who suggested that a person is characterized not only by an increase in material, but also in spiritual needs. Despite the fact that the rational behavior of the employee in working life is based mainly on personal material benefit, it may in some cases contain the rejection of this benefit for other benefits, and not always economic ones. Knowing the behavior patterns of workers allows you to build labor relations the most optimally and predict with a fairly high probability the consequences of certain economic decisions. Thus, the essence of the principle of rational behavior of an employee is that it is based on the need to satisfy primarily their primary needs (food, sleep, security, physical needs) by receiving economic benefits in return for their work. In order to understand what underlies the rational choice of an employee, it is first necessary to determine the criterion of rationality, its indicators and factors that influence the choice. The difficulty in determining the criteria for the rational choice of an employee lies in the fact that at this point in time there is no common understanding in the scientific community of what "rational" is. In this regard, the relevance of understanding in the theoretical and methodological aspect of the phenomenon of "rationality" is increasing. In our study, we attempt to define a rationality criterion related to the behavior of an employee in working life. In our opinion, rational behavior should be understood as the employee's understanding of the sequence of his actions, taking into account his preferences, goals, available means and information in order to make a rational choice (minimum labor costs, maximum benefits).

In this case, the criterion of rational employee behavior is finding the most profitable option. This criterion is possible, but there are limitations associated not only with errors in the processing of information available to the employee (especially if the information volumes are large), but also with the information that the employee has (its completeness, reliability, relevance, etc.), which may affect the implementation of rational choices. In this regard, the study of A.A. is of interest. Shastitko, in which she suggests applying methods of cognitive psychology in the analysis of behavioral economics. In particular, she suggests distinguishing between two types of rationality of behavior at the level of macroeconomic agents: "functional" and "instrumental" [Shastitko, 2006]. For the behavior of an economic agent to correspond to the first type of rationality, mindfulness of decision-making is necessary. According to the functional definition of rationality, an economic agent must consciously follow the principle of maximizing utility, while using all the information important for decision-making. Since information is most often incomplete, and the limited cognitive abilities of people do not allow even all available information to be processed, the concept of limited rationality appears. Instrumental rationality does not imply that an economic agent consciously follows the principle of maximizing utility, defines rational behavior as corresponding to the principle of maximizing utility for an outside observer. Then there is, if the behavior deviates for the external observer from the expected one, determined on the basis of maximizing utility, then it is irrational. "In our study, the functional rationality of employee behavior may look like limited rationality, which arises from lack of cognitive abilities and imperfect information. Those. functional rationality is associated only with the abilities of the employee. Instrumental rationality arises in connection with the expectations of the employer and his understanding of which behavior of employees is rational and will bring benefits and which behavior is irrational and will bring losses. Those. instrumental rationality is determined from the point of view of external perception by the employer and will depend on his expectations. One of the principles of the theory of rational economic behavior of a person is the principle of individualism, according to which the employee seeks to get the result from his purposeful work. This result may be an increase in wealth by increasing income. In economics, long before the advent of behavioral economics, scientists, in particular J. M. Keynes, argued that economic agents were irrational in nature. The irrational type of economic behavior of an employee is characterized by certain benefits, but benefits not necessarily related to economic benefits. In addition to income and wealth, the goals of an employee's irrational economic behavior may include maintaining moral, national, religious and cultural traditions, profitless altruistic action, etc. Due to the fact that the employee's economic behavior may change depending on his preferences, causes and influence various factors, we can talk about a rather thin line of transition from rational behavior to irrational behavior in working life. Thus, the irrational behavior of the employee is characterized by the inconsistency of his actions, may to some extent contradict his preferences, is manifested in the partial neglect of his interests and goals. The rational / irrational behavior of an employee is affected by a number of components that are part of economic behavior:

- economic thinking is the mental activity of the employee, which is aimed at finding a balance between a rational and emotional state;
- economic interests are a reflection of the preferences of workers who, in communicating with each other about the production, exchange, distribution and consumption of limited economic resources, seek to satisfy their urgent needs through interaction. There are several forms of orientation on one's own interest: opportunism, simple adherence to one's own interests and obedience;
- social stereotypes are rules imposed by society and the collective, attitudes that dictate what is rational and what is the irrational behavior of an employee in an organization;

- economic action is a complex and multifaceted phenomenon. Depending on the phases of social reproduction, it is possible to determine the economic actions carried out by the employee in production activities, economic actions in the distribution, exchange, consumption. The economic behavior of an employee consists of a set of economic actions that can be oriented towards achieving rational and irrational goals.

To determine the factors that influence rational choice, we offer a developed model of the employee's economic behavior, presented in Figure 1.

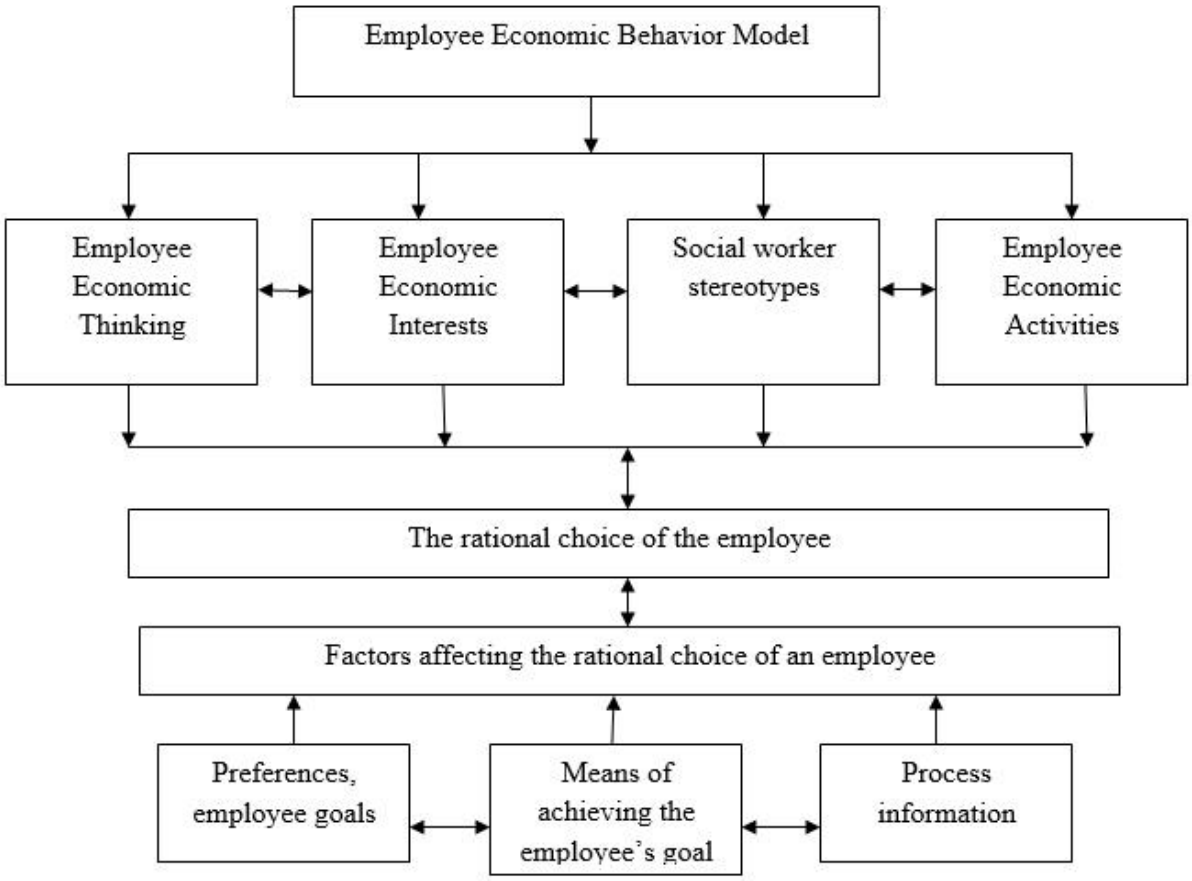

Figure 1: Model of economic behavior of the employee (developed by the authors)

The rational choice of the employee is the result of the interaction of the components of the economic behavior of the employee shown in Figure 1. At the same time, factors that affect the rational choice of the employee are highlighted (Figure 1). First of all, it is the preferences and goals of the employee - to satisfy their needs. According to A.A. Shastitko "preferences are one of the main themes of neoclassical microeconomic theory. By themselves, they are abstractions connected with reality through the so-called revealed preferences. According to the theory of identified preferences, an individual makes decisions based on his preferences, which, as a rule, are not observable, but can be identified on the basis of the choice made by the individual. If this is so, then a number of questions arise: how exactly preferences are formed and what properties they possess. From the point of view of microeconomic theory, preferences are rational if they have the properties of transitivity (if A is preferable to B, and B is preferable to C, then A is preferable to C) and completeness (the individual should have preferences between any two objects) "[Shastitko, 2006]. At the same time, the employee is in a situation where the amount of resources available to him is limited, and he cannot simultaneously satisfy all his needs, so he needs to make a choice.

The choice by the employee is made depending on the system of preferences (values, goals, stereotypes of behavior, habits, individual psychological and physical characteristics) and restrictions, i.e. objective opportunities, time, as well as the actions of other subjects of labor relations. As a rule, the employee's cognitive abilities and ways of organizing actions are referred to the means of achieving the set goal of the employee. Possession of information about ongoing processes allows the employee to make rational choices and make decisions within available capabilities and resources. The information at the disposal of the employee, as a rule, is limited (he does not know all the information) and does not change by itself (costs will be necessary to acquire additional information). In order to ponder and analyze information and also to find new information that is not enough to make a rational choice, the employee needs an important behavioral resource - this is time. The time during which it is necessary to make a decision is, along with income, one of the resource constraints, and the transaction costs of the search are one of the price constraints.
Thus, we examined the factors affecting the rational choice of an employee.

3. PROBLEMS OF RATIONAL CHOICE AND THEIR INFLUENCE ON THE ECONOMIC BEHAVIOR OF THE EMPLOYEE IN THE ORGANIZATION

The theory of rational choice was formed under the influence of several scientific areas:

- „the Scottish philosophy of morality (F. Hutchison, A. Fergusson, D. Hume, A. Smith), which formulated the individualistic concept of rational behavior in society";
- "utilitarianism (I. Bentham), emphasizing the importance of moral judgments and assessments (when the individual understands" what is good and what is bad)";
- „Neoclassical theory (A. Marshall), highlighting the role of mutual exchange between people".

The theory of rational choice overcomes the limitations of neoclassical theory, since it takes into account that time, transaction costs and information, from which the traditional neoclassical theory was abstracted, play an important role in daily decisions. Therefore, the theory of rational choice formulates rationality not only in a strict form (as the principle of maximization), but also in a less strict form, taking into account its time limit, when people do not achieve the maximum, but strive to provide a certain level of their needs. She recognizes the latest achievements belonging to R. Coase (who introduced the concept of transaction costs), G. Simon (who developed the concept of limited rationality), J. Stigler (including incomplete information in neoclassical analysis), G. Becker (who extended the principle of uncertainty to family relationships) and other. By rational choice it is customary to understand the ideal choice of all alternative options that a person has. Such a choice does not correspond to reality, but still helps to formulate the main hypotheses of behavior individuals regardless of field of activity. Thus, the theory of rational choice is of some universal nature. It formalizes the logic of the individual's behavior in various situations. In our opinion, the rational choice of an employee can be understood as the process of comprehending one's economic behavior in labor relations, which is aimed at finding the most profitable option in the current conditions. This is a complex, laborious process that requires intelligence, patience and experience from the employee, aimed not only at finding alternatives, but also analyzing the consequences in real time. The employee makes rational choices during several successive processes:

- recognition of a problem;
- goal setting;
- search for alternatives;
- assessment of alternatives;
- choosing the best alternative;
- implementation of the solution.

The course of these processes can be influenced by some features of the employee, which are reflected in his economic behavior and do not allow to make a rational choice:

- restriction of mental possibilities: the employee's attention spectrum is limited, he is overloaded with information, there is no time to read documents before signing them, there is no patience, the employee acts impulsively, poorly weighing his opportunities, little time or lack of time to think about a decision, evaluate the quality of information and separation important information from information noise. All this interferes with rational decisions and explains why employees often make mistakes, and then regret the decision. Many decisions are made in conditions of uncertainty and imperfect information;
- brain activity: the human brain is far from perfect, hormones, genetics, the nervous system and other organs influence its activity. In situations where information is contradictory and unconvincing, it is difficult for an employee to rely solely on reason and logic, and he acts on the basis of intuition, feeling, instinct, judgment, reflexes, stereotypes, and subconsciousness. The human brain consists of 100 billion neurons interacting with chemical signals. For some time economists began to study neural networks and their impact on human economic behavior, thus, a new scientific direction appeared - neuroeconomics [Camerer, Loewenstein, Prelec, 2005];
- limited rationality: there is no opportunity to evaluate the terms of the contract, misinterpretation of the terms of the contract, it is difficult to assess the likelihood of future events, is not able to carefully listen to the task of the leader, forgets to ask the right questions, incorrect understanding of the task of the leader. Another rather serious limitation is information overload, when the working memory of the brain contains redundant information, and from here the employee has confusion, incorrect interpretations, erroneous judgments; lack of time to think about the problem plays its role, since the leader usually gives the task that had to be completed "yesterday";
- reasonable sufficiency: the employee can arrange a satisfactory result, since the search for the optimal solution is long and complicated;
- preferences and intuition: many studies of scientists went beyond the limits of rationality and showed that intuition plays the most important role in the thinking of the employee, the mind does not always dominate and does not always control decisions made by him intuitively. Workers can make their judgments quickly enough, otherwise they will be affected by the need to make decisions with incomplete information and an unclear outcome, which will lead to a dead end. But relying on intuition and preferences, they systematically make mistakes - often their decisions turn out to be irrational;
- cognitive dissonance: the choice facing the employee often implies the presence of irreconcilable and conflicting ideas, tasks or values, which leads to stress. In order to get rid of such pressure, workers adjust their beliefs or try to reduce the importance of conflicting perceptions in order to streamline the belief system [Komlos, 2018, Conlisk, 1996, Simon, 1955].

The rational choice of an employee is a complex and multifactorial process, which is affected by problems that arise in the organization itself. We list some of them:

1. Wages for most Russian workers are the main source of income; in this regard, the main burden of reproduction of the employee and his family rests with her, which makes the problem of her insufficiency to ensure a decent quality of life for the population. With the transition of the Russian economy from planned to market organizations, it was given the opportunity to independently determine the forms and systems of remuneration. In this regard, some negative trends have been identified related to the specifics of remuneration of workers, which are interconnected at all levels: state, region, industry, enterprise. First of all, this is a high level of inequality, which has a deformed character.

According to statistics from Rosstat, in 2017, the wage fund ratio was 14.1 times, it should be noted that this coefficient is calculated without taking into account informal earnings. Informality leads to an increase in overall salary inequality by 2-3 percentage points. In the configuration of factors affecting the wages of workers, internal factors that play a leading role in Western models (education, qualifications, work experience) are less important. Factors external to the employee are dominant: the economic sector (export-oriented or manufacturing); region (oil and gas, agricultural or with a predominance of the military-industrial complex); the size and location of the settlement, the financial condition of the enterprise. Sectoral differences play a more prominent role in comparison with qualification ones [Sobolev, 2018]. There is also a strong internal relationship between the well-being of the industry, region and enterprise. The most prosperous are regions rich in fuel and energy resources, where the fuel and energy sector has developed. Successful enterprises are also concentrated mainly in these sectors and regions, as well as in megacities where financial and intermediary activities are concentrated [Sobolev, 2018]. According to Sobolev E.N. "At the enterprise level, such wage systems operate in which the variable part in the structure of earnings can be several times higher than the guaranteed (tariff). Under these conditions, identical groups of workers, even within the same region or city, may receive different salaries for similar work. Thus, wages lose their main purpose of the measure of labor. Its value speaks more about how a person settled down than about his qualifications, education and experience. This situation dictates the employee's behavior - to engage not so much in advanced training as in finding an enterprise where they pay more "[Sobolev, 2018].

2. The excess or lack of information, the difficulty of obtaining the necessary information to carry out their work makes the choice of an employee less rational. Our studies in organizations of various industries and patterns of ownership show that employees know information about the performance of their unit by no more than 80%, and information about the affairs of the enterprise by 50%. This indicates that the information is either not communicated, there are communication problems or it is hidden. If an employee does not know how things are going on throughout the enterprise and his unit, it is difficult for him to navigate and strive for something. An employee can compensate for the lack of information with the help of Internet resources, but it will take additional time to get additional information and find it, which could go to more productive work. Excess information is the flip side of the coin. When there is a lot of information and it is necessary to analyze it in a fairly short time, this can lead the employee to a stressful state that will affect rational choice.
3. Contradictions in the words and actions of leaders can lead to tension in the socio-psychological climate of the team, the occurrence of conflicts, and a decrease in labor productivity. The conflict situation and the lack of understanding of what is happening disorientates the employee and limits his rational choice.
4. Difficulties in understanding with colleagues, lack of trust lead to increased control costs, bureaucratic inspections, it is necessary to stipulate and prescribe in the contracts the possibility of a large number of circumstances that may entail negative legal consequences for all parties to the employment relationship. For an employee with his disabilities in this situation it will be difficult to make a rational choice.

4. CONCLUSION

In the course of the study, we examined a number of theoretical issues related to the rational and irrational behavior of workers. In particular, the essence of the principle of rational behavior from the point of view of rational choice of employees was determined, factors that affect the implementation of rational choice of employees, problems associated with rational choice of an

employee and their impact on the economic behavior of an employee in an organization were identified, definitions of concepts “rational employee behavior "And" employee irrational behavior." The practical significance of this study lies in the possibility of using the main points and conclusions obtained in it regarding the rational and irrational choice of employees in the practice of personnel management in Russian organizations.

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INFLUENCE OF REGIONAL ECONOMIC POLICY ON REALIZATION OF SPATIAL POTENTIAL OF SMALL BUSINESS

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ABSTRACT

Despite the increased research interest in the problems of small business, the spatial potential of small enterprises is poorly studied today. The authors of the article define it as a cumulative realizable and potentially achievable level of implementation of entrepreneurial abilities of residents of the local community. The essential feature of the spatial potential of small enterprises is the reliance on the human potential of the territory and the uneven distribution, considering the forms of territorial concentration. The aim of the study is to identify the relationship between regional economic policy and the development of small enterprises at the regional and municipal levels. The object of the study is the regions that are part of the Volga Federal district and municipalities of the Samara region. The formalization of the spatial potential of small enterprises is carried out by the authors using quantitative and qualitative characteristics of the activities of small enterprises in the region of various organizational and legal forms. The regional tools of formation of modern spatial and territorial organization (special economic zones, territories of advanced socio-economic development, industrial parks, technoparks, innovation clusters) are considered and the dependence of its diversity on the level of innovative development of the region is revealed. The reverse hypothesis about the impact of the variety of tools used on the innovation rating of regions has not been confirmed. Using data from 2017-2019 was conducted a comparative analysis of the dynamics of small enterprises in the cities of Samara region, which allowed to conclude that the low effectiveness of regional policy realization of the potential of small businesses. It is established that this is particularly evident in the single-industry cities of Togliatti, Chapaevsk, Oktyabrsk, Pokhvistnevo, where territories with special conditions for entrepreneurial activity are created. The directions of realization of the spatial potential of small enterprises in single-industry cities with the use of initiatives of self-employment, youth entrepreneurship and involvement of persons with disabilities in the business environment are substantiated. The results of the study can be useful in the activities of regional governments, including the development of strategic documents for the spatial development of territories.

Keywords: *Economic policy, Individual entrepreneur, Single-industry city, Small business, Spatial potential*

1. INTRODUCTION

The current view of small businesses as a significant element of the regional economy is based on Western research. In the book "Understanding business" [4], which has passed 10 editions, small business is presented as one of the main components of the economy. Some authors describe the role and place of small businesses as an element of the national economy. For example, Kelly Edmiston [3] examines the economic role of small businesses in comparison with large businesses. In a study by David S. Evans, Linda S. Leighton [2] the authors use empirical material to describe the problem of organizing an enterprise for the purpose of self-employment of the population.

Authors Damian Walczak and Grazyna Voss [1] explore current opportunities for supporting small and medium-sized enterprises in Poland. It should be noted that there are national differences in the criteria used. Currently, the main criteria in Russia are the average annual number of employees up to 100 people and a turnover of up to 800 million rubles per year [15], [16]. O. P. Mikhailova points to the narrow interpretation used in Russia, which leads to a significant underestimation of domestic indicators in international comparisons [13, p. 108]. Currently, the focus of research on the regional economy is shifting to the area of spatial economics; the heterogeneity of the economic space of the regions of the Russian Federation and its internal relationships are of scientific interest. Spatial categories, as noted by S. A. Ivanov and V. V. Lozhko [9, p. 18], form a new system of views of the regional economy, which reflects the increasing interdisciplinarity of approaches. In addition to the concept of poles and points of growth that has become traditional for the methodological apparatus, new ideas about the total economic space as a value in itself, which is a combination of territory, aerial area and water area, are added. A. G. Granberg believes that "the Russian economy is not a single object, but a spatial (multi-regional) organism that functions on the basis of vertical (center-regions) and horizontal (interregional) economic interactions and is part of the system of world economic relations" [9, p.19]. In the context of our research, we consider small businesses as a strategic resource that allows us to improve the situation in economic areas with unfavorable economic conditions without significant investments. These include single-industry urban settlements (317 units in Russia as of June 2019 [17]). They have an unfavorable economic situation due to the dependence on the negative economic situation in the city-forming enterprises. In our opinion, the improvement of the situation is possible based on the characteristic advantages of small enterprises, such as relatively low required investments and lack of need for a large number of labor resources.

2. SPATIAL POTENTIAL OF SMALL BUSINESSES

The spatial nature of small business is reflected in the strategic documents of the Russian Federation. An important feature of small business is its territorial orientation, indicated in the Forecast of social and economic development of the Russian Federation for the period up to 2030. Small business is a strategic resource whose development can become a "growth point" for an innovation-oriented high-tech economy [20]. In our opinion, it is possible to consider this feature in the spatial aspect of the economy by analyzing it as a spatially oriented resource. Among the main support programs in the Forecast of social and economic development of the Russian Federation for the period up to 2030, regional and municipal level programs are named. A separate group of methods and mechanisms in the strategy for the development of small and medium-sized enterprises in the Russian Federation for the period up to 2030 is devoted to the development of small enterprises taking into account regional specifics [25].

2.1. Analysis of existing ideas about spatial potential

Some modern Russian scientists deal with the problem of spatial potential. For the purpose of this study, its interpretations were selected (table 1), which allowed us to continue to consider the spatial potential of small enterprises.

Table following on the next page

Scientists, organizations	Fundamentals
Mayburov I. A. Ural state technical University-UPI	Disclosure of the spatial organization of production and scientific and educational potentials, which are simultaneously part of the integrated potential of the regional economy. Investigation of uneven distribution [12, p. 66].
Galdanova E. V. East Siberian state University of technology and management	Characteristics of economic potential as a philosophical and economic category. Approach to the territorial potential by analogy with the potential of the enterprise, characterized by full use capacity. Spatial potential is considered without reference to administrative-territorial units. It is the sum of the potentials of the territory's branches that can be studied by their potentials [5, p. 14].
Ostovskaya A. A. Crimean Federal University named after V. I. Vernadsky	Definition of the region's business potential as a category that depends on the spatial location of enterprises and their interaction with territorial infrastructure objects of support and development (techno parks, innovation clusters, territories of advanced development, etc.). Territorial forms of concentration of business potential and implementation of growth points solve the problem of territorial disparities and increase the economic potential of the region [18, p. 16].
Suslova E. M. and Zinchenko O. V. Shuya state pedagogical University	Consideration of the spatial potential as the potential of local reproduction systems, which allows us to proceed to the analysis of the municipal economy [26].
Sarandaev B. B. East Siberia state University of technology and management	Assessment of spatial potential taking into account potential opportunities for attraction, as well as integration processes and entrepreneurial activity. Consideration of spatial potential at the municipal level with a tendency to inter-municipal integration and corresponding analysis [27, p. 15].
Kodolova T. A. Institute of Economics of the Karelian scientific center of the Russian Academy of Sciences	The rationale for the meso approach to the consideration of the spatial potential subject of research - economic space heterogeneity is distinguishable at the regional level. The economic space is considered as a group of enterprises and network structures together with their connections [10, p. 14].
Efimov V. P. Institute of Economics of the Russian Academy of Sciences	The self-value of the space, its potential and its influence as a factor on the resource supply and functioning of the territory's population are noted. The spatial potential is considered at the regional level. It is proved that the situation in depressed regions can be improved by self-development through the implementation of the population's initiative [8].
Kuznetsova T. E., Nikiforov L. V. Institute of Economics of the Russian Academy of Sciences	It is stated that the differentiation of the spatial potential makes it impossible to unify the methods of its management. The necessity of state spatial strategies, which give priority to the socio-economic aspect of development is administrative, and support single-industry settlements [11, p. 52].

Table 1: Approaches of modern Russian scientists to the interpretation of spatial potential

2.2. Determining the spatial potential of small businesses

Having considered the main directions of development of scientific and practical thought, we developed our own vision of the spatial potential of small business and its role in the development of the modern economy.The spatial potential of small enterprises is the total realized and potentially achievable level of realization of entrepreneurial abilities of residents of the local community, formalized in the form of small enterprises' activities regardless of their organizational and legal form, considered in the uneven distribution and taking into account the forms of territorial concentration, and based on human potential. The spatial potential of small businesses is part of the total spatial potential, so in our opinion, it is appropriate to consider it both at the sub-regional (municipal) level and in the regional spatial context, while distinguishing between forms of territorial concentration and internal relationships. The levels of statistical information provision make it necessary to consider the spatial potential of small businesses within the boundaries of administrative-territorial entities, and it is necessary to take into account external links and, if possible, include them in the analysis. The spatial potential of small businesses can be considered in three aspects: the spatial potential for using material resources (economic); the spatial potential for using the human capital of community residents (social); and the spatial potential for innovation (innovative). This category is a reflection of the space as a value in itself and the ability of its residents to innovate and entrepreneurship. To a lesser extent, the spatial potential of small enterprises depends on raw materials and to a greater extent on intellectual capital, i.e. it corresponds to the Quaternary sector of the economy.

3. REGIONAL SPATIAL POLICY ECONOMIC DEVELOPMENT

3.1. Tools for implementing spatial potential

Modern tools for regulating socio-economic differentiation of space are represented by special economic zones, territories of advanced socio-economic development, innovative clusters, techno parks, industrial parks, etc. According to Guseva M. S. and Gabbasova Y. R., the territory of advanced socio-economic development is an instrument of territorial development that has a great potential for application [7]. The described tools are not intended directly to support small enterprises, which is due to the high capital intensity of projects, but they create a developed spatial environment that encourages interaction between large and medium-sized enterprises and small ones. The number of resident companies is usually limited to a few dozens, which is not comparable to the number of small businesses in the region. However, small business is integrated into the technological chains of the created enterprises and develops the area that arises around them. The territory affected by the "diffusion of innovation", for which special legal regimes of economic management are created, also includes small enterprises.

3.2. Influence of regional policy on the level of innovative development

Let's consider the mutual influence of tools for spatial differentiation of the economy on the innovative level of regional policy, which can be characterized using the Rating of innovative regions of Russia [22]. It uses data from various official sources as indicators: Rosstat, the Ministry of education, Rospatent, the Scientific electronic library, the Thomson Reuters Agency, as well as data from open sources of information. The rating is based on the following groups of indicators: research and development, innovation, socio-economic conditions of innovation, innovation activity in the region (29 indicators in total). The regional typology identifies 5 groups by the level of innovation activity. The regions of the Volga Federal district belong to the first four groups in terms of level (no region is a weak innovator). Based on our analysis of the use of spatial development tools by the regions of the Volga Federal district, we compare the results of a study by the Association of innovative regions of Russia. The data is presented in table 2.

The types of instruments considered are: special economic zone, territory of advanced socio-economic development, innovation cluster, techno park, industrial park. The data is provided as of June 2019, only data on objects from official Federal sources were taken into account [6], [19], [21], [23], [24].

Number of types of tools used	Strong innovators	Medium-strong innovators	Average innovators	Medium-weak innovators
0			Republic of Mari El	
1				Orenburg region
2		Perm region	Saratov region	
3		Republic of Mordovia, The Chuvash Republic, The Udmurt Republic	Kirov region	
4	Nizhny Novgorod region	Ulyanovsk region, Republic of Bashkortostan	Penza region	
5	Republic of Tatarstan	Samara region		
Weighted average number of instruments	4,5	3,4	2,3	1

Table 2: Distribution of regions of different levels of innovation activity depending on the number of territorial development tools

The dependence is visible: the more pronounced the innovative activity of the region, the more diverse the number of tools used for accelerated territorial development. Regions – strong innovators (Nizhny Novgorod region and Tatarstan) use an average of 4.5 types of instruments (there is a special economic zone in the Nizhny Novgorod region), regions of the group of moderate innovators (7 regions), use on average more than three types of territorial instruments (3,4), average innovators (4 regions) use more than two types of tools (2,3), region – medium-low innovator (Orenburg region) uses 1 tool (priority development area). The direction and reasons for this dependence can be explained as follows: innovative regions are actively developing not only the number but also the range of tools used. Relying on the created material and technical base and using the innovative potential when submitting applications to state authorities for creating new types of business support entities and developing territories, innovative regions are among the first to receive approval from the Federal center for testing new tools. We also considered the opposite assumption: the emergence of territorial tools for accelerated development has a positive effect on strengthening the region's position in the rating of innovation activity. To consider this assumption, we selected objects of the type "innovation cluster", opened in the period 2014-2018. During this period, in 4 regions of the Volga Federal district, objects of this type were first formed: in the Kirov (2017) and Nizhny Novgorod regions (2016), the Udmurt Republic (2016) and the Republic of Mordovia (2016). Open innovation clusters do not affect the level of innovative development of the region: The Republic of Udmurtia the level of innovation activity increased after 2 years, in the Nizhny Novgorod region is observed decline for the next year and its recovery in 2018, the Kirov region and the Republic of Mordovia innovative activity did not change.

3.3. Influence of regional policy on the opening of small businesses in single-industry towns

In the Samara region, there are 4 single-profile municipalities: Togliatti (classified as cities with the most difficult socio-economic situation) [17], Chapaevsk, Pokhvistnevo and Oktyabrsk [14]. The most difficult socio-economic situation is observed in the city district of Togliatti. With a high population (it is the largest single-industry settlement in Russia) and due to the high level of organization of existing economic ties that go beyond the Samara region, negative phenomena in the territory of Togliatti have significant consequences at the interregional level. Small business development is considered as a potential for spatial development and is included in the comprehensive development plans for single-industry cities as one of the main directions of economic restructuring due to its ability to act as a buffer that quickly provides employment through self-employment and hiring. At the Federal level, "Single-industry towns support fund", which aims at enterprise development, not associated with a city, therefore an important addressee of means of the fund are existing and emerging small businesses. We have studied the rate of activity of registration of new small businesses in urban districts of the Samara region (table 3) in order to identify the most effective growth points among them. The data was taken for three years due to the lack of information in the "Register of small and medium-sized enterprises" database earlier than August 1, 2016. Thus, we cannot conclude that the development potential of small enterprises is most successfully realized in single-profile urban districts of the Samara region. The analysis data allow us to draw a conclusion about the low effectiveness of the regional policy of realizing the potential of small enterprises. However, it is possible to assume that without implemented measures of comprehensive support, small businesses in single-industry towns would develop at an even slower pace.

City	Single-profile status	2017		2019		The growth rate in the number (base), %	Changes in the relative shares of, percentage point
		Number of small businesses	Relative share in the region, %	Number of small businesses	Relative share in the region, %		
Samara	-	8997	51,78	12425	48,10	138,10	-3,68
Togliatti	+	4435	25,53	6766	26,19	152,56	0,66
Novokujbyshevsk	-	438	2,52	570	2,21	130,14	-0,31
Syzran	-	451	2,60	623	2,41	138,14	-0,19
Zhigulevsk	-	189	1,09	335	1,30	177,25	0,21
Chapaevsk	+	187	1,08	298	1,15	159,36	0,07
Otradny	-	108	0,62	141	0,55	130,56	-0,07
Kinel	-	227	1,31	423	1,64	186,34	0,33
Pokhvistnevo	+	69	0,40	107	0,41	155,07	0,01
Oktyabrsk	+	43	0,25	75	0,29	174,42	0,04
Other territory	-	2231	12,84	4070	15,76	182,43	2,92
Total for the Samara region	4 city districts	17375	100	25833	100	148,68	0

Table 3: Newly created small businesses in the Samara region

As priority areas for the development of spatial potential in single-industry cities, we highlight the development of self-employment, the promotion of youth entrepreneurship and the involvement of people with disabilities in the business environment.

4. CONCLUSION

Due to the heterogeneity of the economic space and the proven influence of small enterprises on the territorial economy, there are prerequisites for studying the spatial potential of small enterprises. The authors understand it as the total level of realization of entrepreneurial abilities of local community residents, depending on the human potential and heterogeneity of the economic space. Small businesses are considered in unity, without dividing the activities of individual entrepreneurs and legal entities. Spatial potential (currently realized and potentially achievable) is composed of spatial potentials for the use of economic resources, human potential, and innovation, and largely corresponds to the Quaternary sector of the economy. Innovative successful regions of the Volga Federal district use modern tools in their spatial policy: special economic zones, territories of advanced socio-economic development, innovative clusters, techno parks, and industrial parks. The revealed regularity of direct dependence of the variety of applied spatial development tools on the level of innovative development of the region allows us to conclude that it is necessary to stimulate innovative processes and maintain a high level of innovative activity as an integral part of regional policy. Regional authorities give priority to the development of small businesses in depressed areas – in single-industry cities. In addition to the functioning of territories of advanced socio-economic development, which create a zone for "diffusion of innovations" as a cross-cutting measure of economic recovery, complex efforts are being made by "Single-industry towns support fund". The analysis carried out on the example of the Samara region showed that the implemented measures to support small businesses are not enough, because in single-industry towns there is no growth in the number of small businesses that is ahead of other territories. However, we believe that without the implemented set of measures, the growth in the number of small businesses would be much smaller, which would exacerbate the already negative economic situation.

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COMPARATIVE APPROACH TO EDUCATION POLICIES TOWARDS MINORITIES IN THE EXAMPLE OF SWEDEN AND HUNGARY

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ABSTRACT

The Research aims to clarify the Hungarian and Swedish interventions to their respective educational structures in the issue of the minority education in order to close the educational gap between majority-minority groups. Finding the main structural differences in the educational systems of Sweden and Hungary towards their most disadvantaged, segregated, discriminated minority groups are important in order to determine the drawbacks and pitfalls of Hungary because Sweden portrays a well better example than Hungary in this regard. The focused groups are the Saami in Sweden and the Roma in Hungary which groups resemble each other since they had been segregated and discriminated by their majority groups during the history. While Sweden tries to solve its Saami integration problem with the special Saami-only schools as well as Saami integrated schools, Hungary's primal tool seems to be the Hungarian-Romani integrated school structure which presents a failed intervention due to the high number of early school-leaving rates among Roma students according to the recent OECD Education Outlook Report for Hungary (2015). There are some Roma only school practically but they were not designed fort his purpose. The Research concentrates whether the Saami education policy of the Sweden (use of the minority language in education, special schools only for minority groups) can apply to the Roma people in Hungary or they both are incompatible due to their very unique characteristics (sense of belonging to the country, legal status). The study attempts to use the comparative research methodology. Therefore, the Swedish interventions are compared with Hungarian educational context in the terms of educational structures, economic situations, and individual expectations. After the legal and political framework (ministry announcements, legal documents), international analyses, rankings, critics were applied to the comparison, the findings of the research indicates that some Swedish interventions are worth considering in Hungarian minority education (Saami Schools, minority language education), however the differences between two communities should taken into consideration.

Keywords: *Education System, Government Internventions, Minorities, Roma, Saami*

1. INTRODUCTION

According to the OECD, PISA, EC reports, Sweden has found the solution for its rooted perennial challenge about the Saami education. Even though one could claim that there are still some problems about the protection of their culture and identity, still Saami people seems to be integrated into Swedish society or relatively integrated much more than its compared state since they don't suffer as Roma people in Hungary. To this end, the question of the research comes with if the Swedish interventions are the solution or set of solutions for Hungarian Roma people (or any other Roma people in Europe) on their educational structures? I assume that comparing these two historically discriminated, segregated, economically disadvantaged groups' in their education system would provide an important data as well as preliminary research about what are the determinants of these two different community within their context. While Sami population in Sweden is estimated around 80.000 and 100.000 ("Sami in Sweden.", 2019) the Roma population reaches easily to 600.000-700.000. ("Hungarian Gypsies (Roma): Past and Present (Part I)", 2019) What makes these two minority groups similar are; both of them were the most discriminated and segregated, economically disadvantaged groups in their countries

during their history as well as their governments have faced similar political objectives which is integrating them into majority population by closing educational gap.

2. SWEDISH SAAMI SCHOOLS

The research has examined the educational structure of Hungary and Sweden together and it has found out that the Saami schools of Sweden have a unique practice which is proved to be useful to create a bridge from home to the integrated compulsory schools in Sweden. Despite, the first initiative to open this school contains some discriminative purposes, it has changed substantially after the Saami School Board has been established in 1980. Here in this flow chart below, the ideal Saami path in the Swedish educational system is indicated;

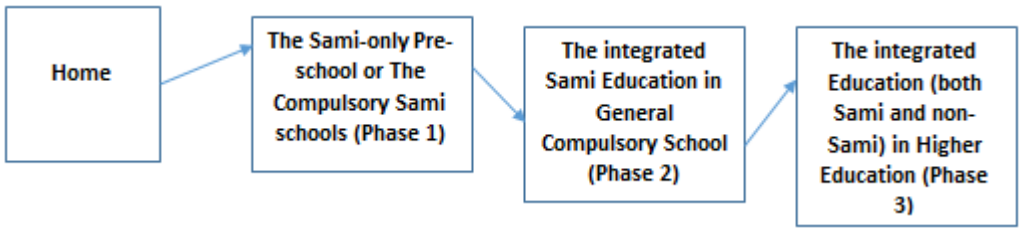

Figure 1: educational structure of Hungary and Sweden together

In Sweden, the lifestyle of the Saami children (Traditions, culture, language, the way of living, etc.) and non-Saami children differs greatly in their households. To this end, the Saami-only Saami schools have specially designed as a transition tool for the Saami children for their integration to Sweden in a national sense where Saami pupils won't be assimilated from the majority because of learning both languages, traditions, behaviors, and understandings. For this reason, The Saami schools offer not only the Saami-based curriculum but also National curriculum (Swedish language, history, literature, etc.)

3. RE-THINKING HUNGARIAN EDUCATIONAL SYSTEM TOWARDS ROMA PEOPLE

Even though there are some other initiatives are exist in Hungary to provide better opportunities for Roma students as it was indicated in the OECD Education Policy Outlook in Hungary Report ("Education Policy Outlook Hungary", 2015), Still, the pre-schools are considered as a crucially important component of the Hungarian school system. Therefore, in order to encourage each of the students to start their education earlier, the former compulsory school participation starting age of 5 has changed to 3 in the year of 2015. It is also observed by some significant regional observers that by indicating; "to improve educational performance, in particular of children from disadvantaged socio-economic backgrounds, participation in early childhood education and care becomes compulsory from the age of 3 as of September 2015." (European Commision, 2015). Seeking out a Saami school-like institution in Hungary seems to be a challenging attempt, even so, there are no Roma schools in its educational system, because of the social, geographic and economic barriers, in practice, most of the Roma children are populated in the almost Roma-only segregated schools. As expected, these schools are not designed specific needs of Roma children and because of various reasons, the quality of educations remains much lower than the schools where Roma children less enrolled. Consequently, Roma only segregated schools causes early school leavings, lower performance in PISA tests, higher attendance to special schools and directly increases the educational gap between Roma and Hungarian children in the country. As a result, considering experiences and attitudes of the Roma individuals who have enrolled their children to Gandhi High School and College of Pecs (only Sami School like institution in Hungary) based on the interview that this

research was conducted in the course of the analysis, the Saami schools of Sweden have a promising potential to be applied for Roma education in Hungary. Hungarian pathways for Roma children presents a more exclusivist system rather than inclusivist. Children are evaluated in their early ages with a language they do not have enough proficiency which leads them to the special schools designed for children who has learning difficulties. One of the Roma representatives, Aladár Horváth confirms that around 75% of the Roma people speak Hungarian, and the majority of them, use Hungarian as their home language, however, the problem of children from Roma households is the limited vocabulary which causes the expression problems in these state selection exams. Today, Hungarian special schools have a great number of Roma children. The European Court of Human Rights (ECHR) had stated that European governments must end segregation and discrimination against Romani children in the school system. Also, the same institution had added that "Roma children had been over-represented in the past in special schools due to the systematic misdiagnosis of mental disability." Unfortunately, still, Hungarian Roma children have misdiagnosed with mental disabilities which hinders their attendance to the mainstream primary or secondary education. Instead, they are educated in remedial (segregated) schools as we can see the case of Horváth and Kiss v Hungary. ("Horváth and Kiss v", 2013) In other words, when children in their early education attended to special schools, they are less likely to continue their education in the country, except a special vocational school or vocational training where pupils are trained for low-skilled jobs. These schools offer almost no possibility to attend tertiary education after graduation. To this end, the OECD report for Education Policy Outlook of Hungary indicates that; "Almost half of Roma have completed only primary and lower secondary education, with 46% at secondary level (VET and final exam together), and just 4% of Roma from the 1991 cohort have attained a tertiary degree" (Education Policy Outlook Hungary, 2015). The Educational tracks of Roma and non-Roma after primary school in the years of 2000-2003 presents significant results (Chart 1) (Szira, Judit, and Szilvia Nemeth, 2007). When the chart analyzed, one can clearly see that the non-Roma children continue to education approximately eight times more than their Roma peers in corresponding years. Comparing the terms of 2000-01 and 2002-03 reveals the truth that there are no significant changes occurred in Hungary because the attendance of Roma students to higher education has changed only 1.8 %.

	Academic year					
	2000—01		2001—02		2002—03	
	Percent		Percent		Percent	
Educational trajectory	N	R	N	R	N	R
Did not continue	1.1	9.9	1.0	10.1	1.1	8.1
Special vocational	1.1	5.5	1.1	5.4	1.3	6.1
Short-term vocational[17]	32.8	62.7	32.9	63.5	33.1	63.8
Vocational secondary	40.0	16.1	38.9	16.2	39.0	15.8
4-year high school	22.5	5.1	23.6	4.4	23.1	5.6
6-year high school	0.7	0.2	1.0	–	1.1	0.1
8-year high school	1.0	0.1	1.1	–	0.9	0.1
Total	100	100	100	100	100	100

N = Non-Roma R = Roma
SOURCE: Szira and Németh (2007, 40).

Chart 1: Educational trajectories of Roma and non-Roma after primary school

Furthermore, the chart also indicates that the majority of the Roma pupils continue their education at Short-term vocational education in which has known as an obstacle in Hungarian education system reaching to enroll to higher levels of education. Nowadays, several experts in Hungary state that the Roma students engaging in secondary education increased to 64% which was only 30% in the last decade and they add that this is a good symbol for future developments of the society in criminality, economics, and education point of views.

Nevertheless, it is hard to see a positive change when it comes to the economical situations of Roma people, as the chart shows, the participation of Roma people in secondary school has increased, but the employment situation of Roma remained same ("Hungary Long-Term Poverty, Social Protection, and the Labor Market", 2001) .

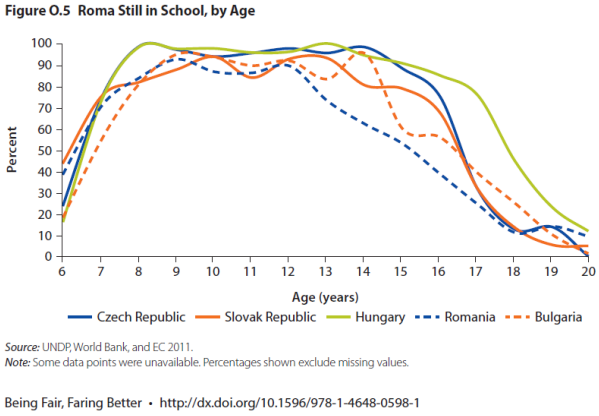

Chart 2: Roma Still in School, by age

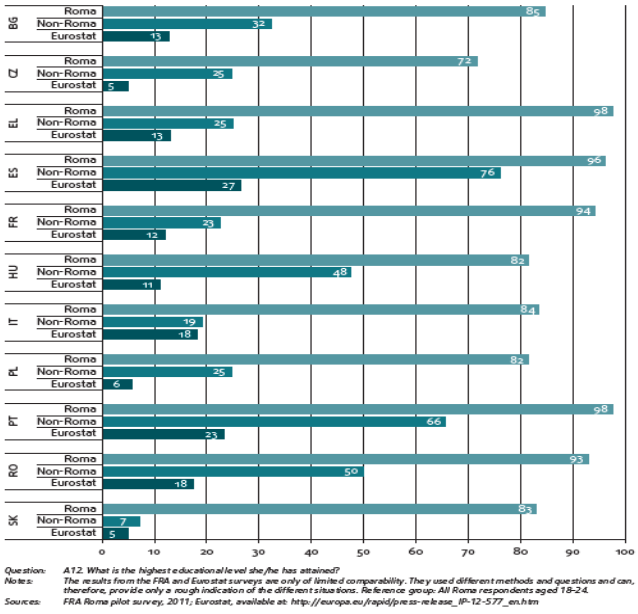

Chart 3: Early school leavers among Roma and non-Roma (FRA survey) and the general population (Eurostat/ Labour Force Survey 2011), by EU Member State and among the population aged 18–24 (%)

The charts above indicate that almost all of the Roma children stay in the school system of Hungary in the ages of 8-14. One can see that it corresponds to the primary and secondary level of education. Also, charts reveal that more than 20% of the Roma adolescents finish their education when they become 17. Moreover, analyzing the Chart 3 one can also notice that the tendency to attend schools as well as staying in the system are relatively higher in Hungary than other countries are given. “The percentage of early school leavers among Roma aged 18–24 ranges from 72 % in the Czech Republic to 82 %–85 % in Hungary, Poland, Slovakia, Italy, and Bulgaria.” ("Education: the situation of Roma in 11 EU Member States", 2014) These numbers easily reach up to 93% in Romania, France, Poland, Slovakia, Portugal, and Greece.

Hungarian early school leaving had a relatively better position than the EU average until 2015 as it is indicated in Chart 4 below. Since then, the EU 28 had portrayed a better performance than Hungary since Hungarian school leaving remain higher from 2015. However, how 2015 regulations aiming to lower compulsory-school-age from age of 18 to 16 would impact the early school leaving in Hungary still remains to be answered.

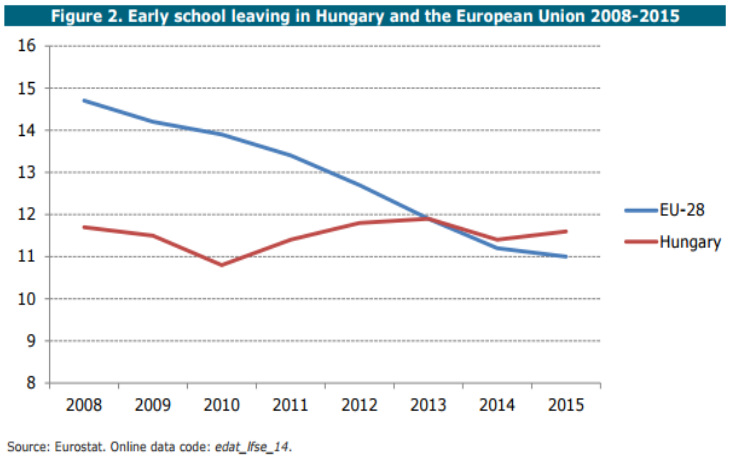

Chart 4: Early School Leaving in Hungary and the EU 2008-2015

The study finds that investigating reasons for early school leaving in Hungary would be essential for sake of a deeper analyze the problem as well as compare Roma people with Saami population in Sweden since it seems to be a problem of Roma only in such comparison. That is the reason, besides the educational structures, socio-economical aspects and personal expectations of these communities also have to be discussed. Wasting of the great number of Roma children potential is also noticed by OECD Education Outlook Report for Hungary (2015). It clearly states that the early school leaving rate is at the EU Average but there is no improvement since 2011. "Early school leaving is particularly high in vocational education and training (30%), and in disadvantaged regions and among Roma students." (Education Policy Outlook Hungary, 2015)

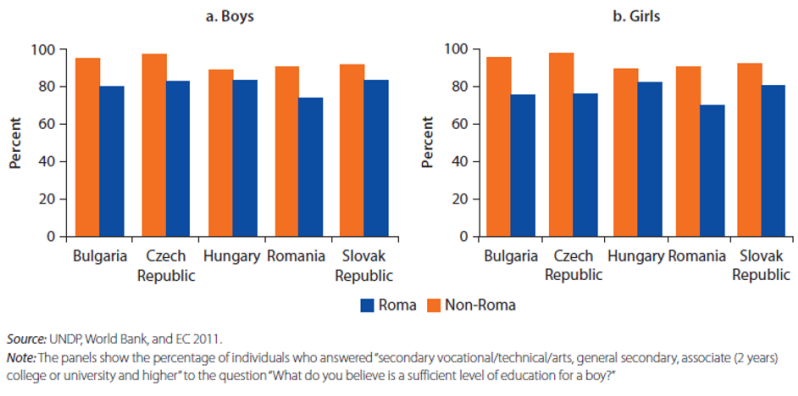

Chart 5: What Do you believe is a sufficient level of education for a boy?

For the sake of finding the reasons for early school leaving the study also investigated the family attitudes for their children. Looking the 2011 results of UNDP, World Bank, and EC, they explicitly uncover that the high early-school leavings of the Roma students in Hungary is not significantly correlated with the family attitudes because the percent of the Roma and non-Roma children' family attitude in Hungary do not differ greatly between genders (Chart 5).

The European Union for Fundamental Rights (FRA) had chosen another approach and questioned not their families but Roma adolescence in school in order to find out the most frequently mentioned reasons for stopping school after 16 in Hungary. 1540 respondents participated in this questionnaire;

Hungary (n=1,540)	%
Need to work for income/found job	30
Judged to be sufficiently educated	24
Cost of education too high	11

Question: H2. Why did you stop going to school? Why did you never go to school?
Notes: n= Number of responses. Reference group: All Roma respondents aged 16 and above. Respondents were asked to provide up to three answers.
Source: FRA Roma pilot survey, 2011

Figure 2: Frequently mentioned reasons for stopping school after 16 in Hungary

As it is reported by FRA above, the most frequently mentioned reasons for stopping school education is need of work for income/found a job for income, which is about 30%. To this end, economical aspects reveal to be arguably an important criterion between Roma and Saami communities in their educational structures and a new approach therefore needed for this specific variable.

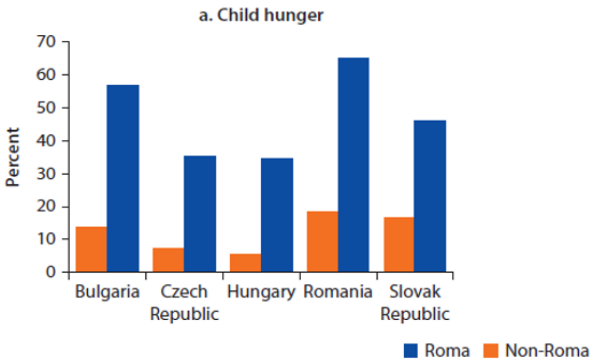

Chart 6: Roma versus Non-Roma Rates (Ages 0-6)

Rather than focusing classic indicators of economic indicators, the research has applied more specific surveys conducted by international organizations such as the research of Child Hunger survey conducted by UNDP, EC, and World Bank. The selected participants have answered the questions of; "In the last month, did you or anyone in the household ever go to bed hungry because there was not enough money for food?" in a 2011 research (Chart 6). Then Researchers have structured bar graphs based on the counts of "yes" answers. As one can see on the graph, even though Hungary is one of the lowest percents among given countries with the maximum around 35%, still experiences one of the highest differences between Roma and dominant community. While 40% of the Roma households answered that they suffered hunger in the last month, while only 5% of the non-Roma households responded likewise. In this sense, one could claim that one of the biggest problems of Hungarian Roma is the lack of financial capacity of the families which obligate the children to leave their school earlier in order to find/continue a

job to support his/her families. Indeed, higher financial capacity in a household has long associated with greater educational opportunities for children and thereby higher participation to upper levels of the education. "The income situation of the Roma has been steadily worsening since the change of the political and economic system in 1989. Between 1991 and 2001, the percentage of Roma considered being poor is doubled." (Szira, Judit, and Szilvia Nemeth, 2007) Even though the Hungarian government has tried to tackle this problem by introducing some incentives which deal with inequity in education through financial incentives, there are still huge differences in the household income of Roma and non-Roma families in Hungary affects students' attendance to the system. Even the Swedish educational structure designed to minimize the educational gap between Swedes and non-Swedes to give equal opportunities to all citizens of Sweden, one could be curious to know about the Saami' employability after they graduated from the system. To this end, the author has interviewed the Swedish ambassador to Hungary, Niclas Trouvé, whether there are any obstacles and difficulties for Saami integration in employment. According to him, Saami still suffer to find a job in the top positions in the nation's leading companies/institutions not because they are Saami or their appearance/behavior as Saami, but mostly they are not competent enough to work in these companies/institutions because they are from rural areas which areas don't have any big industries and when they finally move to Stockholm, Gothenburg, or Malmö it is already very late for them to reach the competencies these companies/institutions require. He adds by telling that such situations happen not only to the Saami population but also for Swedish people who grew up in rural areas. (Personal communication, April 5, 2017). On the other hand, Niclas Trouvé accepts that most of the Saami children come from lower economic backgrounds due to their living in the rural areas which oblige them to work in reindeer herding, small craft making, hunting, farming which jobs are not famous with higher incomes. Moreover, recently, the financial situations of Saami started to change because of the growing tourism. Every year more and more people from Sweden or Foreign countries visit the Swedish north, creating a new way of income for the Saami regions (Personal communication, April 5, 2017). The question that then naturally arises is whether there is a hunger for Saami children based on our aforementioned question for Roma. Fortunately, there is no report concentrated on the Saami and non-Saami children hunger rates as Hungary has for the Roma children because of Sweden's high welfare benefits have used regardless of the beneficiary Saami or not. On the other hand, looking at the OECD report on Child Poverty, Sweden and Hungary both present good statistics (Chart 7).

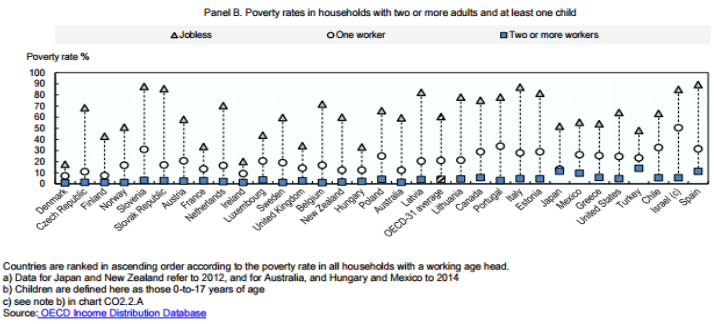

Chart 7: (OECD, 2016)

Assessing the poverty rates in households with two or more adults and at least one child graph, both Hungary and Sweden are higher than OECD's average. differently, jobless Swedish households' poverty rate is around 60% while slightly more than in Hungary. (30%) Even if there is only one person in the family works still Hungary's poverty rate in households lower than the Swedish ones.

Nevertheless, in the case of two individuals work in the same house then the Swedish households' poverty rate decreases slightly lower than the Hungarian one. On the other hand, the unemployment rate tends to be strongly correlated with the poverty rate. It becomes prominent signaling social and economic disruptions, therefore, need to be considered when financial situations of the minorities in question. In this sense, as it can be seen on the graph 8, Sweden provides largely higher rates than the OECD average which is around 82%, making Sweden the third-best country after Iceland and Switzerland. Even though Hungary presents slightly better rates than the OECD average, 68%, but it is still much lower than Swedish rates in comparison. Looking at it the other way, according to the 2017 reports of OECD, Hungary's has an upward trend for employment rates which was 54% in 2009 and 68% was in 2017. Thus, on this basis, it allows the research concluding that employment rate would be a good signal for positive changes in the lives of the Roma minority as well as other disadvantaged groups in Hungary in the future.

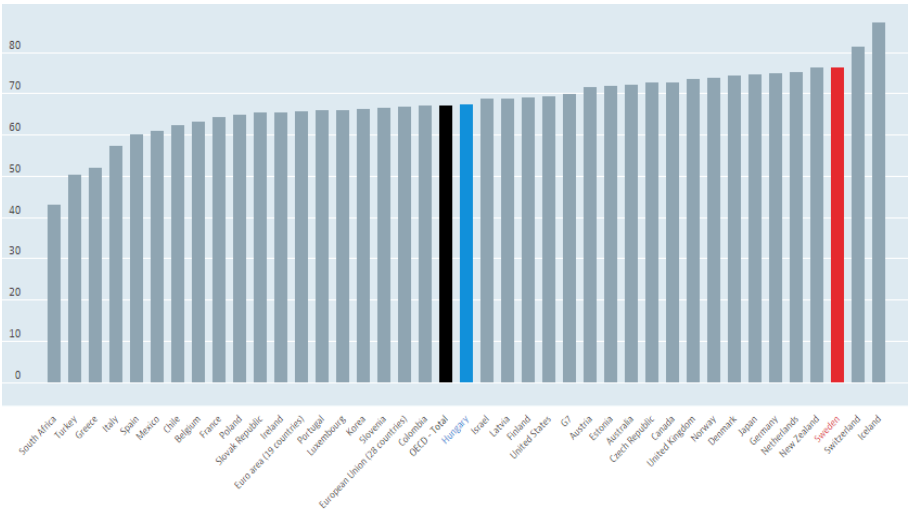

Chart 8: Employment Rate, OECD (2017)

The graph 9 indicates the employment rates of OECD countries along with the educational level. These rates appear to be important due to the early school leaving as well as the low attendance of Roma adolescents to the upper level education. In this regard, Roma children suffer much more than their Saami peers as it is shown on the graph.

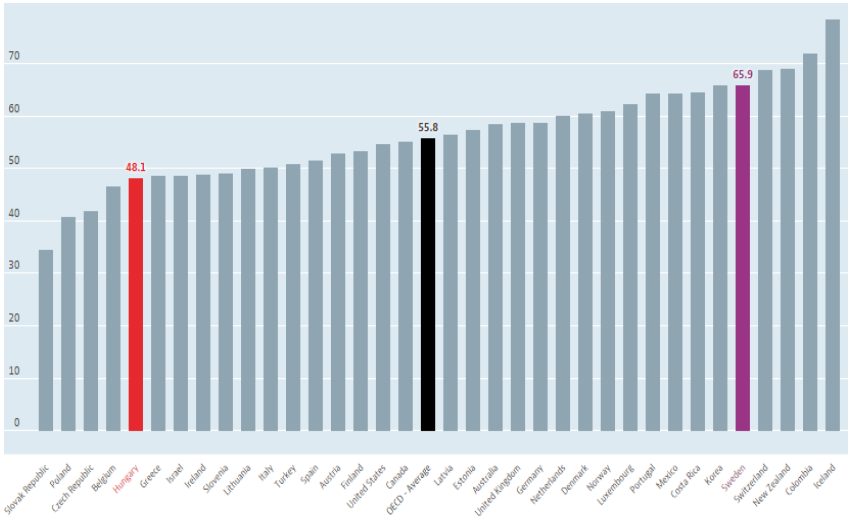

Chart 9: Employment Rate of those education below secondary education, OECD (2017)

Investigating the above charts together, it shows that the Roma people in Hungary experience much worse conditions than Saami peers in Sweden and they need more than one laboring member in the household in order to reach acceptable living standards. Furthermore, the attainment of Roma children to education remains low because of the discriminative job market and low-income jobs that their parents involved. This research indicates that it is one of the main reasons for the high early school-leaving rates in Hungary. Meanwhile, Saami parents enjoy the high employment rate of Sweden even if they do not obtain an undergraduate diploma which causes a high attendance of their children to the education system. As concluding remarks, The Saami have received a special legal status back from 1977. It caused dramatic changes of Saami education system because this legal status forces Sweden to recognize the Saami population as an indigenous group and obliges them to guarantee certain rights for indigenous peoples which also includes the right of self-determination. On the other hand, the Roma in Hungary, still rightly not considered as an indigenous people but as a minority group (even migrants in some political rhetoric) who arrived in Hungary in the 15th century. Correspondingly, it affects their educational structure. Another significant difference is the sense of belonging to the country. Saami people seek autonomy for their lands for years. But Roma people are very much dispersed in Europe and, actually, they don't have a land where they rooted deeply in the continent. In this sense, a Roma representative in the interview stated that having Roma-only special schools or Roma language educational programs are not wanted by Roma people because of the concern of increased discrimination. "Roma people want to be Hungarians rather than to be a Roma."

4. CONCLUSION

Comparing two communities, some certain similarities have been revealed. They both are the most segregated, discriminated, and economically disadvantaged national minorities in their country contexts. Furthermore, the research points out that the purpose of the government interventions of both countries is also serves a similar objective: integrating them into national majority groups. On the other hand, they also contain some different characteristics which feature originating from the minorities' sense of belonging to the country, the countries' own economic situations, employment rate, early school leaving, and legalities. This study points out that the Swedish interventions to Saami children are the Saami schools/integrated schools, teaching in minority language, recognizing the new special legal status and rights, while Hungary reacts this educational gap with the law which obliges its pupils, including the Roma children, to participate in early childhood education from the age of 3 since it believes that will increase the educational performance in further studies of students from all different background. The proposed objectives have been questioned and investigated in the course of the research. It assessed the educational structure of Hungary and Sweden and found out that the Saami schools of Sweden have a unique practice which is very useful to create a bridge from home to the integrated compulsory schools where they can be admitted after finishing the Saami school, even though the first initiative to open this school contains some discriminative purposes. They appear to be an effective tool with the Swedish curriculum for helping to preserve the Saami culture and language. On the other hand, Hungary does not have any Roma schools in the official educational structure, however because of the social, geographic and economic barriers, in practice, most of the Roma children populated in the almost Roma-only segregated schools (This fact makes them as a Roma-only school). These schools (disadvantaged schools) are not designed only for Roma children (mixed population) and the quality of education is much lower than the advantaged or average school where mostly ethnically Hungarians pupils attending. Consequently, this causes the early school leaving, lower performance in PISA tests, higher attendance to special schools, and the higher education

gap in the country. As a result, this research introduces the Saami schools of Sweden as a good model for Roma education of Hungary, especially, if we consider the experience of the Roma people who enrolled their children to Gandhi school of Pecs. The satisfaction level seems to be very high if we consider the re-structured interview conducted with Aladár Horváth. In addition to the comparison of the educational structure of two countries, the research also pointed out the early school leaving, and special school problems of Hungary which drew the attention of many supranational organizations of EU. the study has discussed the special schools and early school-leaving based on the European Court of Human Rights and Aladár Horváth's interview. Both state that Roma children had been over-represented in the past in special schools due to the systematic misdiagnosis of mental disability. Consequently, they leave from the mainstream patch of education and less likely to continue their education which is one of the main problems of the Hungarian educational system as it has discussed with UN and FRA graphs. The research also has questioned the other reasons of the early school leaving in Hungary and the most significant determinant are determined: the low social economic situations of the Roma families which cause the children to leave from the school system in order to help the household income. This research also stated that, because of the discriminative job market and the low-income jobs of Roma people, they tend to earn fewer wages than the general population which affects the Roma children' education attainment because of the need of work to help their family income. On the other hand, Sweden's high employment rate with nondiscriminating job market help to families to work when it is needed and it affects the Students' attainment to education. Furthermore, because of the recent law about compulsory education, the minimum age of school leaving decreased to the age of 16 from 18 and this intervention increased the concern about the early school leaving of Roma children in particular. Final remarks for the paper is, Firstly, the Saami people have a special legal status back from 1977 but Roma in Hungary is considered as an minority group. This fact affects the policies related to Roma education negatively. Another significant difference is the sense of belonging to the country, Saami people seek autonomy for their lands for hundreds of years. They don't feel as Swedish and they not intend to be Swedish. But Roma people are very much dispersed in Europe and, actually, they don't have a land where they rooted deeply in the continent. According to the interview with a Roma representative, Having Roma-only special schools or Roma language educational programs are not wanted by Roma people because of the doubt about discrimination. Roma people want to be Hungarians rather than to be a Roma. This publication/research has been supported by the European Union and Hungary and co-financed by the European Social Fund through the project EFOP-3.6.3-VEKOP-16-2017-00007 titled "Young researchers from talented students – Fostering scientific careers in higher education".

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PROGRAMMING AS MECHANISM OF MANAGING, ORIENTED TOWARDS RESULTS

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ABSTRACT
Modern treating of the term "programming" defines it as a general principle of management, on which grounds the subject undertakes his actions with certain means in the direction of the goals, in compliance with the dynamic changes of the his surrounding environment. Said in other words, upon the concrete content, structure and dynamic of goal, the activities for its achieving are influenced by the challenges of environment, where the system functions, by the extent of the knowledge about them and the dependence of the subject, its value orientation, the priorities, possibilities it has, the chosen forms and methods for achieving the desired result. This, more than ever defines the necessity of alternativeness of decisions and the choice of optimal variant that contributes to management by results. On that grounds, the so called programme-target approach of management originates, which manifestation is in "Planning-Programming-Budgeting-System" (PPBS), which advantages and disadvantages are among the issues discussed in the presentation alongside the core of social programming as mechanism for management oriented towards results, and the controlling as technology of management in regard to planning and controlling processes standardization.
Keywords: *regulation, controlling, management, planning, programming*

1. INTRODUCTION

Originated in the middle of the 60s in the USA as system for planning, programming and budgeting, the programme-target approach of management is applied in the American army first. Grounded on the idea for accelerating the processes of revealing the potential in a system at preliminary set goals, the programme-target approach penetrates quickly also in civil life in the end of 60s and the beginning of 70s (at first in the non-material, and later in the material field, too) (Due J., Friedlander, 1977). This is the reason for PPBS being reviewed as progress in budgeting and as managerial "miracle". In confirmation of that the words of the then USA president Johnson came, according to whom: "This system has to ensure the execution of the new tasks quicker, better and cheaper, through more and of higher quality information, which to generate possibility for better decisions... Our process of making decisions has to have the same level as the one connected with armament and defence. Concisely and clearly said, we have to exchange our donkey's carts for trucks and our old guns for new rockets" (Dickermann und andere, 1971).

2. ADVANTAGES AND DISADVANTAGES OF THE PROGRAMME-TARGET APPROACH OF MANAGEMENT

What makes the approach unique for application is namely the integration of its three main components - goals, programmes, programme-target structure. And if the goals are associated with the mission (the strategy), and from here – the necessity of "unity of goals within the frame of a single organization and the ensuring on the grounds for distributing the organizational resources" (1979), hence also revealing the organizational potential, then the programmes appear to be the specification of the ways the resources for achieving the goals are to be used.

For that purpose, each programme contains certain tasks distributed in time and related to the relevant executors. From here, each of the PPBS components expresses particular managerial phases. This way planning determines the long-term goals pointing what is firmly intended to be done. Programming is associated with the analysis and evaluation of the ways and possibilities for achieving the goals (elaboration and selection of alternative programmes) in compliance with the analysis "expenses-effects (benefits)" and the application of quantity methods of management. Said in other words, the programme is a plan with certain time terms (dates), and this way the time when the thing that firmly is intended to be done, is pointed. Budgeting (financing) is associated with the choice of the advantageous and most effective programmes and with their inclusion in the budget for financing and execution. And, as far as budget is nothing else, but a programme with mapped out prices, it gives a notion of how much funds are necessary and when these are to be ensured in order possibility to be ensured for what is firmly intended to be done, to be done at the exact time. Through the system approach, the pointed managerial phases are integrated in a unified system of interrelated grounds and in a certain relation and subordination to financing. This is the reason one of the most competent experts in the field of programme managing – Charles Hitch (former president of the California University and former assistant secretary of the Ministry of Defence of the USA) to define PPBS as "programme financing", grounded on the principles characterising modern managerial practice. The following principles are of primary significance:

- Long-term nature of goals and the expected end results;
- Prioritization and succession of activities and grading of resources in circumstances of their scarcity;
- Complexity of studying each problem – review of each issue or separate field of activity as system. Here the treating of each system as component of such of a higher rank comes from and the subordination of goals and tasks of the separate sub-systems to the general system's goal;
- Multi-variance of decisions, of the ways and methods for achieving a given goal, which requires elaboration of alternative decisions for action;
- Evaluation and juxtaposing the effectiveness of the separate alternatives on the grounds of objective criteria with the help also of system analysis and its toolkit (modelling, economic-mathematic methods of study and analysis of value, value-effectiveness or value-usefulness, the method of operational studies, machine and game imitating, etc.);
- Continuity of planning or of the application of the so called continuous planning horizon and making the necessary corrections of plans and programmes in the process of their execution;
- Combing the program-target approach in managing with programmes financing in compliance with the extent of achieving the goals.

From here, the application of economic approach to each activity – object of managing, managing grounded on the system approach and analysis, financing on programme-target grounds, which, in their core, are three fundamental theoretic-methodological applications, is grounds for PPBS functioning. This is what defines PPBS as managerial concept of specific goals and tasks. The more-substantial of them are:

- Specifying the national goals;
- Coordinating the activities at the various levels with these goals;
- Analysis and value evaluation of the possible alternatives for acting;
- Enhancing control's role and effectiveness through financing.

Namely managerial apparatus activity's coordination and its directing for the preliminary set goals' realization appear to be the content of programming.

The value evaluation of the possible alternatives and their analysis as well as enhancing control's role, meaning and effectiveness is connected with ensuring the funds, the financing, which is the most substantial system's element. On that ground, the positive features of PPBS are derived, which expression is in:

- The possibility for coordination of planning and preparation for budgeting;
- The application of continuous planning horizon method, on which ground subordination and centralization of the decisions preparation process becomes possible;
- The conduction of analysis of long standing, which allows evaluating the advantages and disadvantages of each possible decision (globally and rationally), and from here, the choice of adequate to the goals alternative;
- Economic grounding of the made decisions regarding expenses usefulness and expedience;
- Taken decisions execution's commitment to their financing, which is expression of both their economizing and effective use of resources.

PPBS leave the impression that it presents the budget as declaration of general policy, which defines the resources necessary for the management end goals achieving. At the same time, the system observes activities as an intermediate stage of transforming the resources into services and usefulness of each programme. And this, in its core, is expression of the subordination "expenses – effects", which is in the base of managing by results. Of course, PPBS is not deprived of weaknesses. Taking into consideration that some of the goals and tasks have specific nature, experts' opinion is that, "the greatest difficulty and the main weakness of the whole system lays in the fact that it is difficult to formulate sub-goals possible to serve as result operative instruments of the current policy out of the general and universally recognized culturally specific values as peace, freedom, security, justice, education and healthcare" (Dickermann und andere, 1971). Beside the above, from political-juridical point of view, the system widens the possibilities and prerogatives of executive power, while the legislative ones decrease. And this is grounds for conflict between them. To all that, it should be taken into consideration the circumstance that PPBS is not bound with the year cycle at drawing the budget. As a result of that, the practice of duplicating the decisions taken on the grounds of the programmes, synthesis of the various analytical studies and of outlining the future goals is not unusual. Not always are they conformed to the environment's priorities and changes. And not the least, the great documents flow and turnover creates administrative inconveniences and deepens the bureaucratic processes. These are the reasons for PPBS in the end of the 60s and the beginning of 70s, already transferred from the American army to the civil structures, to stop in its development at doctrinal and experimental level. In the present circumstances, even though it has lost some popularity, PPBS modified variants leave lasting traces in the practice of budgeting. It has been adopted for application also by the newly accepted NATO member states.

3. PROGRAMMING AS MECHANISM OF MANAGING, ORIENTED TOWARDS RESULTS

The simultaneous adequate differentiation of the management phases - planning, programming and budgeting, and the proper evaluation of their interaction are in support of choosing these states. We speak here about one intransient merit, which is not to be underestimated. Besides that, it requires special attention at the correlation between revenues and expenses. Particularly, the actual price of the transformed resources necessary for achieving the preliminary set results, defined as possibility or fulfilment of obligation, which is in support of the management by results, of the role and place of programming in the social processes management, is taken into account.

And it, the management, applies a certain toolkit for influence upon people, which includes:

- Hierarchy – organization, where the way of influence (attitude towards power) is subordination, the pressure upon a person from above with the help of compulsion, the control over the resource distribution and others similar to these;
- Culture – as manifestation of elaborated and recognized by the society and the organizations groups of values, social norms, formulations and stereotypes for behaviour, rituals, requiring people to behave after strictly defined manner;
- The market – expressed through the net of equal in rights relations along the horizontal, grounded on the purchase and sale of various goods, of property, on equilibrium on the interests of seller and purchaser. In live, real economic and social systems they almost always exist. The more important is what is given priority to and what is staked on mostly.

And as far as programming is accompanied by the use of the pointed toolkit of management, the circumstance that it is what is ensured by the organization, which, itself, is hierarchical, with the inherent relations of power, subordination, etc., where there is "systematic, conscious uniting of the activities of people, haunting the achievement of certain goals" (Terziev, 2013), is in support of the statement that it is a general principle of management. And more, of management, oriented towards results. Something more, this organization ensuring through programming could be presented as number of certain components. The word goes about:

- Connecting the goal with the possible tools for achieving, choice of variant and its establishing in its capacity of a necessary one;
- Elaboration, reproduction and correction of an anticipating algorithm or prototype of actions leading to achieving the goal; structuring of these actions in a certain way, giving them expedience and succession, without which the actions themselves are only single, fractured acts not connected in a common process;
- Communication of the programme with the agents, monitoring of their activities under it.

From here programming appears to be an important element in the purposeful systems, a special variety of which organizational systems appear to be. Organizational system in its essence is such a system, which purpose is coordination of the actions of the purposeful parts, what the social groups and individuals are, and goal direction (activity means and objects) with the global goal, namely – getting certain result (basic end product). Said in other words, programming after definite form and way connects the purposeful part of the organizational system with the means and the objects of activity. This way hierarchy, distribution of power-ordering and executive functions among the programme subjects occurs (Terziev, 2013). The strong interrelation between the forms of organizational system and programming is to be taken into consideration. "The hard" (relatively called "administrative-commanding") organizational system, as a rule, determines the corresponding forms of programming and the types of programmes from directive plan type. "The soft" ("liberal-democratic") system determines only the general reference points and recommendations for their achieving. In practice however we may see also various symbioses between "hard" and "soft" systems in the multiple combinations of programming (Terziev, 2013). This is one side of the interrelation between the forms of the organizational system and programming. Not to be ignored is the other side, where the manifestation is in the reverse impact of the form of programming and its product – the programmes, upon the organizational system. The elaborated and fixed in certain from programme might determine certain shape of the system. The changes in the programme (the corrections), as a rule, lead to corresponding changes in the system. Programming is directly related to another historically worked out approach for managerial influence. The word goes about culture. Here also, a deep interrelation is found, rooted in the essence of culture. It, the culture, is reviewed as "specific human method of activity", as "combination of sustainable

forms of activity". It is in the base of the life activity of the single individual or the personal culture, the culture of the social group or the class culture, or the culture of the society as a whole. Such approach is supplemented by the axiological or the value essence, which manifestation lays in the fact that culture is observed as "combination of human values", as all that elevates, ennobles, and humanizes life and human relations. The sociological approach to culture, according which it is understood as "specific, genetically not inherited combination of means, methods, forms, samples and reference points for interaction between people and the inhabited environment, which they work out in their concomitance for maintenance of certain structures of activity and communication" finds further development in the recent years. Sociological approach observes culture as „system of collectively accepted values, beliefs, samples and norms of behaviour, inherent to a certain group of people … Culture – this is "the collective programming of human intelligence, which distinguishes the members of a group to another". The point that the general level and the characteristics of culture have significant effect on the forms and the content of social programming in a certain society should also be taken into consideration. Social programming, in its cultural mien (aspect), is grounded on the fact that only the social relations contributing to human personality progress could create all necessary preconditions for the "algorithmic manner of culture" as way for acting to become consecutively rational, overcoming the stochastic subjectivity, the elemental uncontrollability and the preconditions for that, the free human activity to constantly ensure the outcome of these "algorithms", the elevation to the methods of activity, renewed by the own human deeds for creative capabilities. Here the complete manifestation of the essence of social planning lays in its creative influence upon social reality, ensuring its practical transformation in compliance with the adequately recognizable values of human world. The approach towards culture as codified system (and, as a rule, reflected in bearers of various type), samples and norms of behaviour, activity, communication and interaction among people, who carry regulative and controlling function in society, deepens the understanding of its interrelation with social programming. Elaborating form and way of acting, which manifestation is in all the elements in the programmes, starting from revealing the goal and finishing with verification of the achieved result, happens on the grounds of the value orientation of subjects, the realizing and choosing the most significant needs and ones or others ways for their satisfying. This, in its turn, is connected with the normative side of culture, which, through the programming gets regulative-managerial solution. And here the manifestation of the ambiguous connection of programming and the market with its "invisible hand" is. At first sight, the contradiction between the two categories imposes itself. Programming – with its immanent characteristic towards introducing system, structuring of processes, formalization of the impact upon them, and the market – with its classic characteristic of elemental interweaving and collision among the various public forces (Terziev, 2013). A more extensive study of the essence of these categories reveals number of connecting moments. After all, social programming should be distinguished through market, as a social institute, with the state programming of economy of market nature, and through it the social sphere, too. The first one of them appears as social programming, through the "market's invisible hand", found yet by Adam Smith. "Market's invisible hand", programming the egoistic interests of producers and consumers, directs them towards a goal that is not within their intentions. Following their own interests, they undertake actions that serve the interests of society (Terziev, 2013). In compliance with that, the effective social programmes are to foresee the benefits from the investments in one or another component of theirs. The state programmes entirely financed by the state budget are not effective either economically or socially as far as economy as a whole defines society's wealth by definition. Programmatically, Adam Smith expresses this statement in the principle "Laisser faire", according which single people and enterprises are obliged to act in the economy without the intervention of state.

This status is not realized in any country in absolute appearance in the practice of the social-historical development of that time. However, the intervention of state in the economy to the 20th century is "passive", incidental and in most of the cases bears the character of extraordinary measures in times of wars or of indirect regulating by the means of legislation and the monetary system (Terziev, 2014). The system intervention of state in the economic and other field of public life increases in the 20th century. Within that general trend, one of the central places is occupied by the issue for the correlation between the state regulation and the market self-regulation. Experience outlines three directions (models) at solving this issue, namely - in the USSR and the group of countries from Central and South-Eastern Europe, Central and South-Eastern Asia, known as socialist countries. According to the generally accepted terminology in the "communist block" to the beginning of 90s, under the influence of the Marxist doctrine and its modifications, a model of centralised, directive planning of economic and social development, rejecting the market, is realized. And alongside with the process of nationalizing the economy, growing of the spheres of social life, directly or firmly regulated by the given system was going on (Terziev, 2014). Within that model, number of methods, particularly the balance one and the normative one are found, practically applicable in each form of programming. This model gives also stimulus for elaborating the methodology and experience for social planning, social design and some other forms for social programming. In a principally different direction, to the 30s, the practice of 'passive' participation of state was going on in the economy of the other countries, where the term 'planning', according to a F. Polak note, is a curse. According to him "... the deep economic crisis in the 30s that has come after countless other disasters, that has shaken the very base of the western system of production, produces a revolution also in economic thought" (Vasilyev, 1999). This revolution, connected with J. Keynes doctrine use, supposes "active" state intervention, including with the help of programming in the economic sphere. In the beginning of the 30s, projects for state programmes appear in many countries, which goal is to reduce unemployment and to soften the other manifestations of crisis (in particular, "the Papen Plan" in Germany, "the Marquet Plan" and "the Plan for Mobilisation of Economy for Creating New Social Order" in France), "The Programme for the Tennessee River Valley Development in the USA", etc. (Vasilyev, 1999). Programming started being actively applied in the activity of the companies, the Ford factories, the Lockheed Company, etc. (Vasilyev, 1999). Programming has special stimulus after the Second World War in Western Germany (in connection with „the Marshall Plan"), in France (State Plan for Development of National Economy for 1947-1952), in Japan and number of other countries (Terziev, 2014; Parashkevova, 2009; Parashkevova, 2015). Contradictory phenomena are observed in the further development of state programming in the countries with market economy, connected with increasing at times, decreasing at other times state intervention in certain social-economic and political situations. As a whole, „the joining" of market factors with programming becomes one of the leading trends in social development. Nevertheless, the thesis "Laisser faire" is not forgotten and is not thrown out of political dictionary. It acts as a principle of the public forces that contain the immanent forces of each country to subdue everybody and everything. Practically, each company elaborates perspective and current 'business plans', marketing projects, programmes for work with the personnel and other similar programmes. Within programming technologies like "indicative planning", "planning-programming-budgeting" (PPBS) and others are found and elaborated. International social programmes that take into consideration the market conditions in their realization are elaborated under the aegis of the international organizations (UN, UNESCO, EU, International Labour Organization, etc.). In this complicated structure, even at national level, 'the law for planned and proportionate development' is not realized, because of which the system of total state directive planning is constructed.

It is the one that gives its possibilities for certain organization of interaction among the interested participants in socially significant activities (Parashkevova, 2015a; Parashkevova, 2017).

4. CONCLUSION

Programming is mechanism that refers to the class of the very complicated systems, where the components possess great freedom of behaviour. The connection among the elements as well as the one of the system with the environment, are distinguished with flexibility and instability. Element exchanges the order. The system's composition and structure are not precisely defined; its boundaries are not precisely set. A lot in the system is unclear, indirect, "distorted". This gives us grounds to define it as arranged-elemental process. Despite that, the term leaves the plane of political and ideological reasoning on the subject "to be or not to be" and comes into use of public management with the requirement for deep theoretic and methodical revision and methodical-technological rationalization, which manifestation is in the elaboration of programmes as expression of the prescribing (deontic) side of human activity.

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IMPLEMENTATION OF THE LEADER PROGRAMME IN THE OBSERVED EU COUNTRIES

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ABSTRACT
With the reform of the Structural Funds in 1987. the concept of ' Community Initiative ' has been introduced, which enabled the EU Commission to provide funds for measures of particular interest to the community, among others, the LEADER initiative. This type of approach relies on the development and implementation of local development strategies that enable the integral implementation of economic and social cohesion, implemented by local action groups (LAG). The level of performance of the LEADER program is different in EU countries. This research paper represents the comparative analysis and an overview of the implementation of the LEADER in the European Union.
Keywords: *economic cohesion, EU, leader, leader measures, leader approach, social cohesion*

1. INTRODUCTION

The LEADER program is an initiative of the European Union to support rural development projects launched locally in order to revitalize rural areas and create new jobs. This type of approach relies on the development and implementation of local development strategies (LRS), which enable the integral implementation of economic and social cohesion, implemented by local action groups (LAG). The LEADER approach recognizes the value of things that are more and more underestimated in today's world. The new Rural Development Policy (the program) recognizes the benefits of a smaller project, namely that the combined impact of many small projects within a given area can have a significant impact on different areas of life. The LEADER approach recognizes the importance of the local, the importance of knowledge, and commitment to a particular place (area) in stimulating action and maximizing the benefits arising from the action. It recognizes the Tacitus knowledge (Tacitus knowledge, i.e., undocumented knowledge) that takes place within communities and what it takes to implement this knowledge with available "documented" knowledge. In many of these values, the LEADER approach is "flying high", manifests the advantages before a globalized, increasingly centralized, increasingly specialized, and increasingly urban world. The LEADER approach is based on many areas of learning and insight from rural development through community development, environmental management, and social inclusion. It uses techniques such as strategic planning, project management, monitoring, evaluation, and review and participation in decision-making. Although it has many features, the two main features of the LEADER approach are: sharing and learning from others. It encompasses between territorial and transnational projects, through national LEADER networks or national rural networks, to the EUROPEAN LEADER network and different opportunities for exchanges through meetings and conferences.

The idea is that things that work or influence (and sometimes those that do not need to act) should be shared, disclosed, and community members should learn from each other-standing at the CENTRE of the LEADER's philosophy. LEADER is an excellent tool for decentralized development or distribution of financial resources, mostly financed by The European Fund for Agriculture and Rural Development. More experienced countries have adapted and funded it from the European Regional Development FUND (ERDF) and the European Social Fund (ESF), which is called the multi financing LEADER. In Croatia, it is planned in perspective 2021.-2027. The LEADER program is also financed from all three funds and has so far only been from the EAFRD, which amounted to more than 100 billion euro at the EU level 2014.-2021. The specific objectives of the work are: to explore the basic concepts related to the LEADER program and to explore the performance of individual countries concerning the experience with the LEADER program and to make recommendations for essential improvements in the next programming period 2021.-2027. Year.

2. LEADER PROGRAM

During the reform of the Structural Funds in 1987. the concept of ' Community Initiative ' has been introduced, which enabled the EU Commission to provide specialized resources for measures of particular interest to the community-among others and the LEADER initiative. With the implementation of the universal agricultural policy reform, in 1991th, the European Union began the application of the LEADER program as an umbrella comprehensive development program for rural areas (http://enrd.ec.europa.eu/enrd-static/leader/en/leader_en.html). The LEADER approach relies on the development and implementation of local development strategies (LRS), which enable the integral implementation of economic and social cohesion and are implemented by local action groups (LAGs). LAGs are known as associations that provide direct support to local development stakeholders and projects of national rural development programs (http://enrd.ec.europa.eu/enrd-static/leader/leader/en/lags-database_en.html). According to the LEADER of the network Croatia, LEADER is (http://lmh.hr/leader-clld/leader):

- Access to local development based on local characteristics and resources-bottom-up approach,
- the approach that gathers and encourages local stakeholders (volunteers, private sector, local government,
- Response to insufficient practical local development approaches to the early 90 focused on agriculture, driven from above and followed by federal aid.

As shown in table 1, LEADER has been through an interesting development path. From the LEADER and the phase that lasted 1991.-1993., with a budget of 450 million euros and a total of 217 LAG, today brings together more than 3000 LAGs across the EU and ten-fold more significant sources of funding.

Table1: Evolution of the LEADER program

Phase	Duration	Funds/funding sources	Budget (EUR)	LAG
LEADER I	1991.-1993.	EAGGF (leading), ESF, ERDF	450 million	217
LEADER II	1994.-1999.	EAGGF (leading), ESF, ERDF	1.7 billion	821
LEADER +	2000.-2006.	EAGGF	2.1 billion	893 (EU-15) + 250 (+ EU-6)
LEADER (4th axis)	2007.-2013.	EAFRD	5.5 billion (6% EAFRD)	2200 (EU-27)
LEADER/CLLD	2014.-2020.	ESI funds	Min. 5% EAFRD	More than 3000

Source: LEADER mreža Hrvatske (http://lmh.hr/leader-clld/leader)

Likewise, the number of EU Member States, accepted by the LEADER as an adequate platform for the management of rural areas, also increased through the observed period. The LEADER program is characterized by a "bottom-up" approach that implies that agricultural development policies and priorities are selected locally from local actors, and the plan (strategy) is applied to multiple bodies, national and EU, to finance these plans and to reach specific objectives. In contrast to the "top-down" approach development strategy as a unified rural policy applied at national level in the local environment of the rural area of the whole country, the "bottom-up" approach could be described as specific, given that it comes in the form of different solutions concerning the specificities of the area. In contrast, the "top-down" strategy uses a more general approach. The following chapter provides an overview of the status of the LEADER's implementation in selected EU Member States (Croatia, Portugal, Poland, Romania, Slovenia), which were observed in the survey (http://teli2.eu/hr/home-hr/). The survey was based on online surveys and focus groups conducted among employees at LAG/LDC/agency/Ministry of observed countries.

3. LEADER IMPLEMENTATION STATUS IN OBSERVED EU COUNTRIES

The implementation status of LEADER program authors analyzed in the following countries: Croatia, Portugal, Poland, Romania and Slovenia.

3.1. Implementation of the LEADER program in Croatia

Implementation of the LEADER program in the Republic of Croatia began in 2013. In the framework of the implementation of the measure 202 (http://europski-fondovi.eu/tags/ipard-mjera-202) pre-accession program Ipard 2007.-2013. Through two competitions, for the implementation of the LEADER program, 43 LAG has been established. The approved LAG covers 69% of Croatia's area of 42% of the total population. In 2019, Croatia had 54 local action groups publicly known as LAG or local development partnerships of representatives of the economic, civil, and public interest groups or sectors. The strategies that the LAGs have developed cover 51,047.08 km2 or 90.2% of the land-based national territory and include 2,440,915 inhabitants and 56.97% of the total population of Croatia (according to the census from 2011). The LAG is actively operated by local development stakeholders from the area of 6,165 settlements (91.05% of the total number of settlements). Administratively, belong to 108 cities and 403 municipalities (85.04% of the total number of cities and 94.16% of the total number of municipalities) or 511 local government units (92.07% of total Local Government units) of the Republic of Croatia, which demonstrates the size (Catalogue of LAG, Croatian Leader network, 2019). With the beginnings of the implementation of the LEADER in Croatia, it is clear that the coverage of the area and the inhabitants under the potential impact of the program is noticeable, and the real effect will be visible through the evaluation results for the period 2014.-2020. During this period the Croatian LAGs, the LEADER's implementers through local development strategies (LRS), allocated public support for 490 million HRK of which 441 million HRK from European Union funds (90%) and 49 million from the Croatian State budget (10%) (Catalogue of LAG's RH, Lead ER Network of Croatia, 2019).

3.2. Implementation of the LEADER program in Portugal

The critical summaries of statistics related to the implementation of the previous LEADER programs in Portugal are listed in the following table.

Table following on the next page

Table 2: Investments through LEADER program implementation in Portugal

LEADER Programming period	Number LAG	Number Project	Territory State under the LEADER (%)	Public Support Projects (in €)	Total Investment Projects (in €)
1991-1994	20	2.193	40	47 million	85 million
1995-2001	48	6.930	86	130 million	218 million
2002-2007	52	7.101	87.5	223 million	302 million
2008-2013	53	6.224	91	480 million	820 million

Source: LAG MONTE, LAG ADRIMAG
LEADER Implementation STATUS statement in Portugal (2017)

There are three types of LAG in Portugal: Rural lags, fisheries lags (FLAG), and urban lags. They are financed by the European Agricultural Fund for Rural Development (EAFRD), the European Social Fund (ESF), the European Regional Development Fund (ERDF) and the European Maritime and Fisheries Fund (EMFF). The main aim of the local action groups for rural development and fisheries is to support strategies that deepen sustainable economic diversification in rural areas and fishing (coastal) areas through entrepreneurship, promoting employment, rural and urban integration, and social innovation. It is the response to the problems of poverty and social exclusion. The main objective of urban LAG is to promote social inclusion by addressing the problem of poverty, social exclusion, and early school leaving, focusing on innovative actions and entrepreneurship in endangered urban areas. The Portuguese Rural Development Programme focuses on the following rural development priorities, which include:

- *Competitiveness of the agricultural sector and sustainable forestry.* Agricultural investments in all sectors, at the same time focusing on the environment, climate, and animal welfare. An essential element is an innovation, which facilitates cooperation, the transmission of information and knowledge between the agri-food sector, researchers, and other stakeholders. Participation in the European Innovation Partnership can also be supported under this priority as an organization of the food chain, including the processing and marketing of agricultural products, animal welfare, and risk management in agriculture (https://www.zicer.hr). Primary producers are supported and better integrated into the agri-food chain through quality schemes, adding value to agricultural products, promoting local markets, short supply chains, and producer groups.
- *Restoring, preserving, and enhancing ecosystems related to agriculture and forestry.* Around 72% of the allocated amount is used for payments to the surface of farmers for the use of non-environmentally harmful land management practices (climate), including organic farming. Besides, the program includes a limited number of highly targeted agri-environment (climate) measures that prioritize the most vulnerable areas (e.g., Natura 2000 areas and areas of high natural value) and water management. This priority also supports investments in farms (environment) and non-productive investments.
  - *Resource efficiency and climate:* It is a priority for investments for energy efficiency, reduction of emissions, and production of renewable energy sources on farms, as well as the efficiency of water and forest use. Environmental efforts in forestry are also encouraged.
  - *Social inclusion and local development in rural areas:* It focuses on growth and jobs, improving living conditions in rural areas, notably through business development, innovation, and cooperation.

Rural lags in Portugal have competencies in the management and delivery of the following funding sources:

- *European Agricultural Fund for Rural Development* (min. 40% of THE LRS EAFRD): Simplified investment scheme for small farms; small-scale investment in processing and marketing; diversification on farms; short supply chains and local markets; promoting local quality products and village renovation (max. 10% of the budget).
- *European Regional Development Fund:* supporting the development of entrepreneurial incubators and support for self-employment, micro-enterprises, and business creation; preservation, protection, promotion, and development of natural and cultural heritage.
- *European Social Fund:* Self-employment, entrepreneurship, and the launch of businesses, including micro, small and medium-sized innovative enterprises; active inclusion of the population, including promoting equal opportunities, active participation, and improving employment.
- *European Regional Development Fund:* supporting the development of entrepreneurial incubators and support for self-employment, micro-enterprises, and business creation; preservation, protection, promotion, and development of natural and cultural heritage.
- *European Social Fund:* Self-employment, entrepreneurship, and the launch of businesses, including micro, small and medium-sized innovative enterprises; active inclusion of the population, including the promotion of equal opportunities, active participation, and improvement of the employment rate.

3.3. Implementation of the LEADER program in Poland

In Poland, the management body of the LEADER program is the Ministry of Agriculture and Rural Development. At the same time, the Agency for payments and the Agency for restructuring and modernization of agriculture is the supervisory authority. In Poland, there is 16 LEADER implementing bodies, illustrating the size of the LEADER's delivery system, which is not easily horizontally and vertically aligned. Bearing in mind the legal, regulatory framework of implementation, and the necessary specific expertise to Implementation of this rural development approach model. For local development strategies (LRS) of 2007.- 2013. the 335 LAGs received funds from the Rural Development Programme (RDP), but it decreased to 322 LAGs in the current programming period 2014.-2020. The specifics of the LEADER in Poland are:

- 96% of rural areas cover LAG,
- The only legal form of LAG is the association,
- In Poland, there are 35 FLAGS (2014.-2020), there was a reduction of 13 compared to the previous programming period,
- There are seven urban LAGs for the period 2014. -2020. years, but they are concentrated in the Kujawsko-Pomorskie region financed through the European Social Fund,
- The regions of Kujawsko-Pomorskie and Podlaskie receive the LEADER funds from multiple sources. These include the ESF (€ 62m); ERDF (EUR 69.7 million); EAFRD (EUR 467.7 million); and the EMFF (93 million euro)
- Poland uses simplified cost options for managing the LEADER/CLLD program. There are lump sums for preparatory support, administration and animation. Also, lump sums for people establishing a new job, "*startup*" support.
- "Polish LAG Network": The main activities of this network relate to the advocation of rural development issues, organizing seminars and conferences; and representation of Polish LAG in Poland and the EU; The promotion of CLLD in Poland.

- Prominent examples of best practices promoted by EAFRD (LEADER) include:
  - Promotion and support for the sale of domestic food products/tied crafts; LAG "Raby Valley" promotes local food through the soup Festival; Museum of Culinary Books; A charitable company that sells local food products.
  - Agricultural (rural) tourism: restoration of farms and renovation of agricultural resources with additional investments in the environment and environmental standards, diversification of primary agricultural producers into the tourism sector. LAG Gościniec 4 Ioywiołów created a kitchen incubator that helps farmers and entrepreneurs to process local food. (Source: From TELI2 Research, 2017, LAG "Valley of Raby," Poland)

The total budget available for the implementation of the LEADER measure in the Rural Development Programme 2014.-2020. amounts to 250 million Euro and 220 million allocated to lags operating in 28 administrative areas. The funds are spent in this period on projects that are aligned with the key priorities set out in the rural development program. These include three themes and nine subthemes. An additional $10 million is allocated to cooperation projects. These projects can be national or international, with a particular focus on cross-border cooperation. According to the LEADER themes identified in the RDP (Rural Development Programme), 15 million were further allocated to the Euro from the total budget for aid to food producers. These include supporting crafts producers, including a focus on co-operation focusing on the quality of production and the market of issues; support regional product development, including a focus on marketing recognizable local foods, and support marketers for strategically identified sectors. An additional $5 million is allocated for the adoption of rural economic development Zones (REDZ). REDZ is a functional, not administrative area. It reflects the spatial patterns of local economic activities and development processes (TELI2 research 2017. Limerick Institute of Technology, Ireland).

3.4. Implementation of LEADER program in Romania

LEADER is a vital funding program for socio-economic development in rural Romania. The current experience is characterized by the construction of a local development capacity that is not fully compliant with local needs, in particular concerning cooperation between public and private partners. At the same time, the strategic approach should be encouraged and developed through Community-led decision-making. The implementation of the LEADER approach and the establishment of local action groups (LAG) began in the period from 2007. - 2013. Initially, it was 163 LAG, covering an area of about 142,000 km ², which is equal to 63% of the available area and 58% of the population entitled to LEADER. In the current LEADER, 2014. – 2020. Total LEADER period the eligible area comprises 228,754 km^2, with a population of 11,359,703. A total of 239 active LAG covers 217,307 km^2 -equivalent to 95% of the eligible area and 91% of THE population entitled to LEADER (10,337,329). In Romania, the LEADER also provides a mechanism to support local communities ' initiatives to tackle socio-economic challenges (problems). Examples include poverty reduction and deprivation and reduced risk of social exclusion; Development of core infrastructure and services in LEADER areas; Creating employment opportunities in LEADER areas; Preservation of rural heritage and local traditions; fostering and strengthening of capacities for local development; Improving cooperation between the public, private and civil sectors in the LEADER area, and access to ICT networks. The LEADER of the areas of action in Romania are: contributing to the diversification of non-agricultural economic activities and encouraging small entrepreneurs in the LEADER area; Creation, improvement, and diversification of economic development facilities, development of local infrastructure, including broadband, and essential services; Increasing the attractiveness of the LEADER area and reducing population migration,

especially young people; Improving social inclusion, including minority (ethnic) groups, protecting and preserving natural and cultural heritage; Diversification of the tourist offer, fostering local development initiatives with a high level of territorial socio-economic integration (European Commission, 2016). The institutions involved in the implementation of the LEADER program in Romania are:

- *National level*: Minister of Agriculture and Rural Development (MADR), general Director of Rural Development, Directorate for the National Programme for Rural Development, measures outside, LEADER office and non-agricultural investments, national payment authority-rural investment Finance Agency (AFIR)
- *Regional level*: eight regional centers for rural investment Financing (CRFIR)
- *Local-level*: Cantonian authorities – 41 County offices for rural investment Financing (OJFIR), 239 LAG (NGOs-Associations) (TELI2 research, 2017, lag and Dobrogea Central, Romania).

LEADER in most countries is characterized by a comprehensive supporting administrative-bureaucratic system and requires considerable personnel support for implementation, which leads to a significant administrative burden ("congestion") for implementers in terms of late or too late Reaching the targets. Through the experience of the country after three or four program periods of the LEADER's implementation, a reduction in the need for administrative organizational and implementing resources are noted.

3.5. Implementation of the LEADER program in Slovenia

Slovenia has previous relevant experiences in implementing the rural development program that actively involves rural citizens. Prominent examples include integrated rural development and village renewal programs (14.6 million euro) and development programs for rural areas (2.5 million). Later, it represented the right basis for the LEADER initiative, which was introduced into national and regional rural development programs in the period from 2007. - 2013. Partnerships were built in the period 1996.-2006., involving 1.9 million inhabitants in 199 participating municipalities. The average LAG size was 598 km2, with 57,600 inhabitants. Most lags are associations or public institutes, and smaller numbers are non-profit private companies, cooperatives, societies, or working groups. The structure of the partnership is heterogeneous: Public sector members (33%), economic sector (29%), and the private sector (39%); While the number of partners ranged between 14 and 129. Municipalities have played a dominant role in the public sector, followed by an agricultural advisory service, development agencies, schools, centers for social work, etc. Agricultural enterprises and farms accounted for 40% of partners from the economic sector; The private sector included various associations, NGOs (a significant role of the Association of Women, the Association of Rural Youth, various tourist and cultural associations). At the end of 2015., 30.73 million euros were spent on about 1400 LEADER projects (AKTRP, 2016). In the period from 2007.-2013. The average amount of appropriations per LAG amounted to 729,000 euros. On average, the individual LAG manages and coordinates the 44 projects. Some lags gave priority to infrastructure projects, while others prioritized capacity building (education, events, promotional materials, etc.). Since LDS was based on the endogenous development potential of the selected area, economic aspects of development were dominant in the period from 2007. - 2013. Almost 60% of priority tasks focused on three of the essential sectors in rural areas: agriculture, tourism, and small business. Despite the modest resources allocated to the LEADER, it is necessary to evaluate LEADER projects as a particular added value to the local environment, as they monitor local initiatives from the bottom up. Implementation of LEADER 2007-2013 was challenging due to difficulties in managing and financing projects. Inter-institutional cooperation and joint implementation of public-private projects have also been lacking. Initially, the LEADER approach was not known

to local stakeholders. However, as it became more involved, local communities were more interested – especially from the perspective of financial support for local projects. In addition to accepting the LEADER program among the local population, there is still numerous untainted potential of this approach, and it is necessary to do more in the field of active involvement of the local population in the preparation and implementation of LRS. Administrative pretentiousness is detrimental to innovation, while financial pretentiousness affects the balancing of interests. There is a need to increase the level of knowledge and qualifications OF LAG to manage local partnerships (TELI 2 survey report 2017). The local development strategies for each area are aligned with the six priorities of the rural Development Programme (2014-2020). It includes knowledge and innovation transfer in agriculture, forestry, and rural areas; Enhancing the competitiveness of agriculture and the vitality of farms; Support chains and risk management in agriculture; Restitution, preservation, and enhancement of ecosystems related to agriculture and forestry; Supporting resource efficiency in the agriculture, food processing and forestry sectors in line with the transition to a low-carbon economy, resilient to climate change; Support social inclusion, poverty reduction and economic development of rural areas. LEADER/CLLD for the period 2014. -2020. Slovenia will allocate 97.5 m euros for 37 lags (52.4 million euros from the EAFRD, 6.6 million euros from the emff and 37.5 million euros from the ERDF (TELI2 Research, 2017, *univerze Ljubljana* from Slovenia).

4. CONCLUSION

In current times, it is necessary to plan well, to take care of self-sustainability and return of investments, so that the economy can be more sustainable and able to tolerate shocks. In this respect, the acquisition of new knowledge, learning from the more experienced should be the constant policy of the individual country, organization, institution, and private company. For example, in the LEADER, knowledge, learning, the transfer of good experiences and "know-how" are the most successful fruits with the very financial support and the great investment potential that LEADER projects can achieve. Proper use of knowledge in the direction of refining local initiatives and potential (resources) through the LEADER program can be achieved added value in the local area. In addition to financial effects, the value of learning and networking is so-called. "networking." Focusing on the local circular self-sustainability, a more direct impact on the quality of life, strengthening the identity of the territory will be an essential starting point of further development of the LEADER in the future. Introducing LEADER programs to "new countries," such as Croatia, is undoubtedly a challenge. They still have no experience in the "bottom-up" development policy. The LEADER influences local authorities and their mood on local stakeholders such as successful entrepreneurs, associations, schools, or institutes and not at all positive. The Program sets strict new rules, gathers people, affects them, has a generous financial background, and only for those aligned with its priorities. In developed countries, the program solves economic, social, technological-innovative, cultural-tourist, endogenous issues. Compared countries have different experiences with the LEADER program. Some countries implement it for one programming period, which is seven years, while others have already had several cycles. That is, so far, they have participated in each programming period from the LEADER's very beginnings. The following steps may be proposed based on the research and the results presented:

a) Develop a comprehensive report on the status and results of LEADER programs in Croatia,
b) Analyze the country's specific needs to improve the implementation of the program;
c) Develop or complement a national Qualifications framework to implement the LEADER program in Croatia,
d) Continuously implement training programs and monitor the current topics and update the regulatory framework with the LEADER's implementation needs;

e) Regularly pursue a public awareness campaign on the importance of inclusion in the decision-making process, in particular at the local level,
f) Maintain panels in polytechnics and universities throughout Croatia with topics on the opportunities offered by locally guided development policy,
g) Introduce educational programs/colleges to higher education institutions/universities related to the thematic areas of the local economy, rural development, regional development, self-sustainability and circular economy (community self-reliance), and community-led development.

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EFFECTIVENESS OF CAPITAL CONTROLS TO REDUCE SHORT TERM FLOWS

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ABSTRACT
We study the conditions of controls success to reduce short term flows. The developed model suggests that variation of short term flows is related to the elasticity coefficients of the demand of these flows. An empirical analysis of the elasticities, for some experienced countries with controls, allows verifying the model proposition.
Keywords: *Capital controls, Short term flows, Elasticity*

1. INTRODUCTION

The effectiveness of capital controls is usually based on four objectives: reduce the volume of capital flows; change the composition of capital flows in favor of long-term capital flows; affect the real exchange rate; and enable a more independent pursuit of monetary policy (Magud, Reinhart and Rogoff, 2018). For the studies analyzing these objectives (or at least one of these objectives), results are diverse and numerous. The literature on capital control presented several issues that made it difficult to give, with certainty, clear recommendations from these studies (Korinek, 2011; Benigno et al., 2013; Bianchi and Mendoza, 2011; Jeanne and Korinek, 2010). First, there is no unique theoretical foundation for clearly defining the macroeconomic consequences of controls (Currie, 1985; Axelrod, 1980; Blackburn and Currie, 1984). Second, the cases of countries that have introduced capital controls are very heterogeneous and differ in many aspects (wealth, institutional quality, etc.) (Chanda, 2005; Magud, Reinhart and Rogoff, 2007). Similarly, the time scale for introducing these controls also differs among these countries (Kaminsky and Schmukler, 2001). Third, we cannot posit that instituting capital has succeeded in achieving the objectives, since the political objectives are numerous (Fernandez et al., 2015; Fratzscher, 2017; Forbes et al., 2015; Aizenman and Pasricha, 2013). The empirical studies dealing with the effects of capital controls do not have a common methodology and use multiple measures of capital controls (Edison and Warnock, 2003; Reinhart and Montiel, 1999). Such studies often use the cases of Malaysia and Chile, two examples of successful capital controls, but there are other cases that are less successful or even failing (Kaplan and Rodrik, 2001; Athukorala, 2008). For all these shortcomings, the inquiries into the effectiveness of capital controls continue and are subject to several ambiguities (Tamirisa, 2004). It is very difficult to make a clear decision about the effectiveness of controls if we analyze the four objectives together. The main objective of the controls studied in this paper is to reduce short-term capital flows. With the recurring financial crises, it is clear that short-term capital flows are the main cause of the instability of the financial systems (Cordella, 1998; Griffith, Montes and Nasution, 2001). The paper presents a new analysis on the effectiveness of capital controls to reduce short term flows. To our knowledge, no prior studies have examined the conditions of success of capital controls through a calculable methods. We do this by computing the elasticities of short term flows. The study contributes also to the empirical literature on the effectiveness of capital controls by analyzing recent countries experiences with controls (Argentina (2019), Cyprus (2013), Greece (2015), etc.).

We try to group our ideas and achievements into an informative model. We do this by maximizing the profits of foreign investors under capital control conditions. We aggregate the findings to the economy. The main proposition of this model suggests that the elasticity of short-term capital on total capital flows, under capital controls, can tell us about the variation of the short flows (decrease, increase and unchanged). The model's suggestion is empirically verified through computing the elasticity of shortterm flow on total capital flows. We apply this to the cases of separate countries experienced in capital controls and for the region of South Asia and Latin America. Depending on the type of elasticity found (elastic / inelastic / unit), the majority of country/year cases of capital controls confirm the model proposition. The paper proceeds as follows. The second section discusses why capital controls work successfully to curb short-term flows in some countries and not in others. Through the analysis of some empirical studies and countries' experiences, we provide proof of the difficulties in establishing a general conclusion about the effectiveness of controls. The third section presents a simple model of small open countries with foreign investors who want to maximize their profits. The elasticity of demand for short-term flows seems to be the determinant for the type of variation of these short-term flows.Section four shows an empirical validation of the model's proposition. The last section discusses the implication of our findings and the policies required for successful capital controls to reduce short-term capital flows.

2. DO CAPITAL CONTROLS REDUCE SHORT TERM FLOWS?

The question of the effectiveness of capital controls is increasingly debated (Magud, Reinhart and Rogoff, 2018), with many countries currently using them, even though their effectiveness still does not seem to be clearly established and they create distortions if they are indefinite. Regarding the processes envisaged to achieve the effective regulation of international capital flows, it is difficult to establish "best practices" in this area because the problems and the way markets respond to them differ significantly depending on the legal and market context concerned (Tarullo, 2002). To know if capital controls are effective is usually studied using the following two aspects: their impacts on capital flows and the support of macroeconomic objectives (autonomy of the monetary policy, reducing the pressures on the rate of exchange, etc.). Our paper focuses on the first aspect of the impact, specifically the short-term capital flows. The volatility of these flows can destabilize the underdeveloped financial markets (Rodrik, 1998). Capital controls on short-term capital flows are often used. After the last financial crisis, more than 1 in 2 economies have used restrictions on short-term capital inflows, and more than 1 in 3 economies have added more restrictions (Fernandez et al., 2015). In this section, we present some studies on the effectiveness of controls to reduce short-term flows. After this, we give a short survey of countries with experience in controls on short-term flows. This survey includes older experiences such as Brazil, Thailand, Malaysia and Colombia, and recent experiences such as Iceland, Ukraine, Cyprus, Argentina, Greece and Russia.

2.1. Selected Empirical Literature

Econometric and statistical studies of the effectiveness of capital controls have several methodological shortcomings. In particular, there are some criticisms for the indices used to reflect the intensity of capital controls, and many studies simply use dummy variables that take the value of 1 for the presence of controls and 0 for none. It is often difficult to separate the effects caused by controls from effects caused by other macroeconomics policies (e.g., the effectiveness of prudential supervision). In the majority of these studies, controls have been successful, but unfortunately, the degree of success is not equal for all countries. A meta-analysis is carried out by Magud, Reinhart and Rogoff (2018) and regroups many studies on the effectiveness of controls. The authors analyze 40 empirical studies on the four main objectives of capital controls (reduce the volume of capital flows; change the composition of

capital flows in favor of long-term capital flows; affect the real exchange rate; and enable a more independent monetary policy). These studies show that, in general, capital controls were successful in reducing short capital flows. Among the papers, the authors cited were Cardoso and Goldfajn (1998); Reinhart and Smith (1998); De Gregorio, Edwards and Valdes (2000); Gallego, Hernandez and Schmidt-Hebbel (2002); Le Fort and Budnevich (1998); Baba and Kokenyne (2011) and Montiel and Reinhart (1999).Table 1 summarizes the results of these studies.

Table 1: Summary of studies' results

Study	Did controls reduce the volume of short capital flows?
Control on Inflows	
Brazil	Unclear
Chile	Unclear
Colombia	Unclear
Malaysia (1989)	Yes
Malaysia (1994)	Yes
Thailand	Yes
Control on Outflows	
Malaysia (1998)	Unclear
Spain	Unclear
Thailand	Yes
Multi-countries studies	Yes

Note: Yes stands for yes, it works; No, for no, it did not work; Unclear for mixed results.

Depending on the time scale of controls (short time or long time) the effectiveness of these controls also differs. Cardoso and Goldfajn (1998) show that capital controls were endogenous. When the inflow of short-term capital is massive, the government reacts quickly by instituting controls. The controls are released later, when there is a decrease. The authors show that these controls can be effective in the short term by reducing short-term flows, but they are inefficient in the long run. The same conclusion is found by Laurens and Cardoso (1998) for the Chilean experience during the 1990s. It was evident that controls were able to affect the level of capital flows only in the short term. In addition, Klein and Shambaugh (2015) find that capital controls have only limited effectiveness, and if this occurs, it is for a short time. The results of these papers are interesting and demonstrate that controls work better in the short term. We take inspiration from these papers when we try to validate the model's proposition by the use of the variation (to reflect the short time scale) of short-term flows. Ostry et al. (2010) analyze 21 country and cross-country studies (cases of Brazil, Chile, Colombia, Croatia, Malaysia, Thailand). Ten cases found some effects in reducing the volume (but mostly short-term); 19 cases found some effects in altering the composition (7 short-term effects). Moreover, Ostry et al. (2011) studied the effects of capital controls and prudential policies in 41 countries in 1995 - 2008. Capital controls are measured based on IMF AREAER and internal surveys; they find that the composition of capital flows is affected by a smaller share of debt liabilities. Saborowski et al. (2014) studied 37 countries that introduced outflow restrictions from 1995-2010. The authors find evidence that capital outflow restrictions reduce gross capital outflows, however, under certain conditions: strong macroeconomic fundamentals (growth rate, inflation, fiscal and current account balances); good institutions (World Bank Governance Effectiveness Index); and existing restrictions (intensity of capital controls or comprehensiveness). When none of the three conditions are met, controls will fail to reduce net outflows.

Furthermore, some studies suggest that controls are more effective in advanced countries than in others, perhaps because of the better quality of institutions and regulations (Binici, Hutchison and Schindler, 2010).

2.2. Some Countries' Experiences

The effectiveness of controls differs across countries. It is difficult to say whether or not a country has succeeded in reducing short-term flows by applying capital controls. With the previous analysis, e.g., of one country, the effectiveness of controls can be admitted for a precise period or year but it does not confirm other periods. For these reasons, we cannot separate the successful country cases from the failed cases. The case-setting of countries with capital controls can be carried out on the basis of recent or older experience with the control of capital. At first, we present "old" experiences with controls (Chile, Thailand, Malaysia, etc.) and then we discuss "recent" cases, such as whose occurs as consequence of the financial crisis of 2008 and even occurrences in recent years (Greece, Cyprus, Argentina, etc.). Table 2 presents a summary of these countries experiences.

Table 2: Cases Experiences with Controls on Short-term Flows

Country	controls on short term flows
Old cases	
Chile (1990)	Some forms of capital controls have changed the composition of inflows to long-term instruments and limited outflows and subsequent capital outflows. This was the case in Chile in the 1990s. The URR (Unremunerated Reserve Requirements) used in Chile is an indirect tax for short-term capital inflows. The URR limits excessive capital inflows and consequently the risks to which the institutions provide these transactions are exposed. There is some evidence that the URR has changed the composition of capital inflows (De Gregorio, Edwards and Valdes, 2000).
Brazil (2009)	Brazil has been the main "poster boy" for the use of capital controls since the crisis (Jeanne, 2016). Controls on foreign capital inflows were put in place between October 2009 and May 2013. The government has aimed to improve the quality of capital inflows and to increase the maturity of authorized investments. Results of controls to reduce short-term flows are clear, and between March 2011 and April 2011 (just for one month), short-term foreign borrowing rose from 6.5 billion US dollars to only 26 million US dollars, following the short-term borrowing tax.
Colombia (1991)	In the early 1990s, Colombia experienced massive private capital inflows. To cope with persistent pressures, Colombia adopted a policy to discourage capital inflows, especially in the short term. To limit these short-term flows, the URR was only applied to loans with maturities of up to 18 months. The URR is influenced by the volume of short-term inflows (higher rates are applied to short-term flow). It was difficult to evaluate the effectiveness of the URR to alter the composition of flows; its imposition coincided with the introduction of the exchange rate range, which could have also helped to reduce short-term flows.
Malaysia (1994)	With persistent inflows of capital flows, the Malaysian authorities introduced a number of capital controls in early 1994. The controls covered capital inflows in many forms of foreign loans. Thus, in the same year, the country renounced these controls, believing that the objectives had been achieved, especially to reduce short-term capital inflows. Controls seem to be effective in reducing volume and changing the composition of capital inflows. The country saw the capital account surplus shrink sharply, reflecting a sharp contraction in short-term inflows, while long-term investment flows were relatively less affected.

Thailand (1995)	In Thailand, in 1995, controls to reduce capital flows were introduced. With the strength of massive inflows of short-term flows, the authorities introduced a second set of controls in 1996 in the form of a reserve requirement. These measures appear to have reduced net inflows into Thailand, reduced the share of short-term net inflows in 1995-1996, and increased the share of long-term loans for the same period. Thailand has experienced a significant change in the structure of capital flows with a decline in economic activity. Capital controls have made it possible to change the flow patterns in Thailand, but given their economic consequences, capital controls were not effective compared to other macroeconomics policies.
Recent Cases	
Iceland (2008)	Iceland appears to have effectively adopted capital controls. These controls were imposed in November 2008, following the collapse of the three largest banks. These capital controls were imposed to prevent large and disruptive reversals in capital flows and allowed Iceland to limit capital outflows and stabilize the currency exchange rate of the Icelandic krona. The authorities chose to remove controls on capital outflows in early 2017.
Argentina (2011)	For Argentina, not only did the previous round of controls from 2011 to 2015 fail to stem the bleeding in foreign exchange reserves, but they ultimately led to a balance of payments and a currency crisis. This sowed the seeds for a huge devaluation in December 2015. The recent financial crisis in Argentina led the government, in 2019, to institute monetary controls to stabilize the financial market. Among the actions taken were limiting the purchases of currencies following a sharp decline in the value of the peso. Firms have to seek central bank permission to sell pesos to buy foreign currency and to make transfers abroad. Argentina's case can be qualified as a temporary measure. There is no doubt that capital controls work. Mainly, they buy time, but they have a cost, which tends to rise the longer they are in place. There will be people trying to find ways around the controls, looking for legal loopholes. These leakages rise over time and typically lead to even more draconian controls.
Greece (2015)	The main purpose of the Greek capital controls was to guarantee the liquidity of the banks. These controls determine the amounts that people can withdraw from their accounts and their transfers to the outside. In August 2019, Greece ended capital controls, signaling a return to stability as the country seeks to woo back investors and ease the conditions of its debt repayments
Cyprus (2013)	In 2013, Cyprus showed that capital controls are useful in crisis prevention and recovery. Cyprus gained recent experience with capital controls in the wake of its banking crisis, which broke out and pushed the island country's financial institutions to the verge of insolvency. The controls stayed in place for quite a long time and were only gradually withdrawn over a two-year period. The last of them were lifted in April 2015.
China (2015)	In 2015, capital controls in China played a very large role in limiting outflows during that round of yuan depreciation. Among the recent measures to ease controls, in 2017, the Chinese central bank no longer required banks to set aside a 20 percent deposit on forward sales of foreign currencies, a rule imposed in 2015 to limit the colossal capital flight out of China, a ban on domestic crypto currency exchanges, increased disclosure requirements for individuals buying foreign currencies, and tightened restrictions on corporate investments overseas.
India (2013)	For India, the US Federal Reserve announced its intention to halt quantitative easing in 2013. In response, the Reserve Bank of India instituted some new controls on several capital flow aspects, including restrictions on foreign holdings of Indian government bonds, restrictions on foreign currency borrowings, limits on interest rates that banks can pay on foreign currency deposits, etc. These measures are also motivated by the massive capital inflows in 2014 (in the order of 40 billion US dollars). The government warns of the risk of the reversal of flows. Despite the country's experience with capital controls, India has increasingly become more financially integrated with the rest of the world. The pattern of capital flows it receives mirrors those in other emerging economies, pointing to the importance of common factors in driving capital flows to India.

Russia (2010)	Russia was also heavily controlled. The liberalization of the capital account only dates back to 2006, and many years were devoted to restoring the financial system following the chaos that followed the fall of the Soviet Union in the 1990s. The controls on capital movements for this country have significantly reduced the flow of escape. They contributed to the spectacular economic rebound that characterized the country in 1999 and 2000.
Ukraine (2014)	In Ukraine, in 2014, substantial external imbalances, capital flight risks and panic in the foreign exchange market prompted the National Bank of Ukraine to adopt tight capital controls, a number of which remain in effect. In July 2018, Ukraine finally adopted the long-awaited "On Currency and Currency Transactions" law (the "Currency Law") which is intended to replace the archaic currency control legislation. The Currency Law is one of the major milestones in opening the Ukrainian economy to foreign investors and providing access to foreign markets for Ukrainian businesses. The tight capital controls introduced previously were loosened by the Ukrainian central bank.
Korea (2009)	The Korean economy has also been a victim of the boom and bust of short-term flows. The authorities in South Korea put in place a number of regulatory measures starting in 2010. Among the measures taken to halt capital flows related to short-term foreign debt is the reinstatement of a withholding tax on interest earned by foreign investors on government bonds. The measures have reduced external vulnerability in particular, containing the banks' short-term external debt.
Brazil (2009)	Brazil has been the main "poster boy" for the use of capital controls since the crisis (Jeanne, 2016). Controls on foreign capital inflows were put in place between October 2009 and May 2013. The government has aimed to improve the quality of capital inflows and to increase the maturity of authorized investments. Results of controls to reduce short-term flows are clear, and between March 2011 and April 2011 (just for one month), short-term foreign borrowing rose from 6.5 billion US dollars to only 26 million US dollars, following the short-term borrowing tax.

Greece and Cyprus had a different destiny for the success of controls in curbing capital outflows. Greece also imposed capital controls in 2015, similar to Cyprus. However, the situations of the two countries are different. Cyprus has recovered from these economic pains but Greece took longer to recover. In 2017, the Greek government decided to relax capital controls and a measure was introduced in 2015 to avoid a bank panic in the country, which was already affected by the crisis. India and China are two countries known for very controlled systems. Capital controls are lengthening over longer periods and capital controls in both countries have reduced shortterm flows. They limit access to foreign financing for creditworthy national institutions only (Ariyoshi, Kirilenko, Otker, Laurens, Kriljenko and Habermeier, 2000). This does not preclude the two countries from reconfirming the controls applied to capital flows. For Iceland, China, Greece and Cyprus, the common denominator is that the macroeconomic policies were generally supportive in re-balancing the economy; thus, the capital controls were capable of being phased out or there was no incentive to test them. In this section, both empirical studies and the experiences of countries with controls do not accurately define the conditions for the success of controls. The results were different enough and did not allow for a general conclusion. There is, however, a consensus that macroeconomic conditions can help the success of controls. Similarly, some studies show that controls are mostly effective when they are introduced for a short time. This raises the question of how to make capital controls effective to reduce short-term flows. Moreover, under which conditions will controls be effective? We try to answer to these inquiries in the next section through a model for a small open economy, in which the effectiveness of controls is conditioned by the elasticity of demand for short-term flows.

3. ELASTICITY APPROACH TO REDUCE SHORT TERM FLOWS

The model in this section is the most closely related to (Magud, Reinhart and Rogoff, 2018) who presented a model under a portfolio balance approach of capital controls. The authors give many propositions related with many objectives of capital controls. We try to explore their model but only for the objective of reducing short term flows. The portfolio balance approach arises from asset models of the spot exchange rate (Levich, 2001). This approach considers two financial assets (money and bonds) and two countries (home and foreign). The exchange rate establishes the equilibrium in investor portfolios comprised of domestic money and domestic and foreign bonds.The menu of assets is expanded to include domestic and foreign bonds, B and F, which are assumed to display imperfect substitutability. In the model of Magud, Reinhart and Rogoff (2018), the conditions of using this approach are not met. There is an absence of the spot exchange rate. Also, instead the domestic and foreign bonds, the authors use the random real rate of returns on short-term and long-term capital flows. For our study, we name this approach "Elasticity approach to reduce short-term flows" in line with both proposition at the end of the model.

3.1. Model

We rationalize a model to explain under which conditions capital controls can be effective to curb short-term capital flows. Taking the case of a small open economy. It receive two types of capital flows: a short-term capital flow for period t, (noted S_t) and a long-term capital flow (noted L_t), the total of these flows is K_t. Each type of flow yields a return i and i^*, respectively for long-term and short-term flows. We suppose that $i^* > i$.

$$K_t = S_t + L_t \tag{1}$$

The short-term flows will represent a portion of the total flows z.

$$S_t = zK_t \tag{2}$$

z will depend on the choice of foreign investors who want to maximize[1] the return on their investments.

3.1.1. Foreign investors

Represented by an homogeneous group of foreign investors that will maximize their utility based on their returns for each kind of flows. Consider a risk-averse, expected-utility maximizing investor with initial wealth v_0. For one representative investor, he choose the composition of his portfolio of these flows following the model parameters, for example according to his risk aversion. He tries to solve a problem such:

$$\max_z(U) = U(\overline{v}, \rho_v^2) \tag{3}$$

Where "$\overline{v}$" represents the rate of return for both short-term and long-term flows and (3) defined as:

$$\overline{v} = (1 + i)K_t + (i^* - i)zK_t \tag{4}$$

[1] Generally, in portfolio choice models, the choice of investors is shared between free-risk assets and risk assets. Here, the choice is between short-term and long-term returns.

and the variance as:

$$\rho_i^2 = K_t^2[(1-z)^2\rho_i^2 + z^2\rho_{i^*}^2 + 2z(1-z)\rho_{ii^*}] \quad (5)$$

Where ρ_i^2 represents the variance of the return rate i and ρ_{ii^*} represents the covariance between i and i^*.

$$K_t = \frac{\overline{v}}{(1+i)+z(i^*-i)} \quad (6)$$

From The first order condition, we obtain:

$$z = \frac{(i^*-i)+\theta(\rho^2-\rho_{ii*})}{\theta_\rho} \quad (7)$$

Where θ represent the coefficient of relative risk aversion of this investor at wealth v.
We assume that U is twice differentiable. Where $U' > 0$ and $U'' < 0$ (risk aversion).

$$\theta = \frac{-vU''(v)}{U'(v)} \quad (8)$$

and $\rho = (\rho^2 + \rho_{i^*}^2 - 2\rho_{ii^*})$

Where z will increase with the differential of rates and decrease with a low risk θ. Another way to write this by:

$$z = \frac{i^*-i}{\theta\rho^2} + \beta \quad (9)$$

$$\beta \equiv \frac{\rho_i^2-\rho_{ii^*}}{\rho^2} \quad (10)$$

With β we can determine an optimal share of capital flows that will reduce their variance. β separates the risk of each type of flow.

3.1.2. Instituting capital controls

We integrate the capital control aspect. It is assumed that capital control "$\Im$" take "0" for the absence of controls and "$\overline{\Im}$" if controls exist.

$$\Im = \begin{cases} 0 & no\ \ controls \\ \overline{\Im} > 0 & with\ \ controls \end{cases}$$

With $0 < \overline{\Im} < 1$, after capital controls, the return on short-term flows, i'^*, will be reduced as follow:

$$(1+i^*) = (1+i'^*)(1-\Im) \quad (11)$$

3.1.3. Composition of capital flows

We can now analyze the results of instituting capital controls. This economy does not initially have capital controls, and subsequently introduces these controls. This will cause a decrease in i^*.

We can see from the equation 8, that :

$$\frac{dz}{di^*} = \frac{1}{\theta\rho} > 0 \qquad (12)$$

And thus, *The share of short-term flows is going down with capital controls.* This mean that the share of long term flows will increase.

3.1.4. Aggregation

This analysis, made for a single representative agent of foreign investors, can be generalized over the economy. We assume for the sake of simplicity that these agents receive the same information but their wealths and risk aversion are different. This investor j will have a short-term flow demand with a wealth V_j given by $z_j\ V_j$; as noted previously, z_j is conditioned by the individual risk aversion of the investor. The overall wealth of the economy is given by:

$$\overline{V} = \sum_j V_j \qquad (13)$$

In equilibrium, aggregate demand and aggregate supply for short-term flows should be equal, as follows:

$$R^* = \sum_j z_j V_j \qquad (14)$$

For each investor $_j$, Multiplying equation (9) by V_j on two sides, we obtain the aggregation:

$$\sum_j z_j V_j = \left(\frac{i^*-i}{\rho^2}\right) \sum_j \frac{V_j}{\theta_j} + \beta \sum_j V_j \qquad (15)$$

By integrating the equations 12 and 14 into 15 we obtain the following result:

$$R^* = \left(\frac{i^*-i}{\rho^2}\right) \sum_j \frac{V_j}{\theta_j} + \beta\overline{V} \qquad (16)$$

With some manipulation we obtain:

$$i^* - i = \theta\rho^2\left(\frac{R^*}{\overline{V}} - \beta\right) \qquad (17)$$

$\theta = \sum_j \frac{\theta_j}{V_j/\overline{V}}$ represents the aggregation of risk aversion.

In the aggregate also, capital controls reduces the share of short-term flows.

As we have proceed with the first result:

$$\frac{di^*}{d(V^*/\overline{V})} = \theta\rho^2 > 0 \qquad (18)$$

The equation 17 presents the result found previously, but here for the aggregate. Capital controls will reduce the share of short-term flows for all the economy.

3.1.5. Conditions

We push the analysis to know under which conditions the previous results can be true. For capital flow controls work well with a high level of capital flows. This can be seen by calculating the partial derivative of Equation 17 and we obtain:

$$\frac{di^*}{d\overline{V}} = -\frac{\theta\rho V^*}{\overline{V^2}} \qquad (19)$$

For an investor (or even the aggregate market) to achieve the same expected rate of return in response to the instituting controls, the total flow of capital must increase. Similarly, proceeding to the total derivation of equation 17. The most important results appears as follows:

$$di^* = \theta\rho^2\left[\frac{\overline{V}dR^* - R^*d\overline{V}}{\overline{z}^2}\right] \qquad (20)$$

With some manipulation we obtain the following two equations:

$$\frac{di^*}{dR^*} = \theta\rho^2\left[1 - \frac{1}{\mu}\right] \qquad (21)$$

$$\frac{di^*}{d\overline{V}} = \frac{R^*\theta\rho^2}{\overline{V}}\left[\mu - \overline{V}\right] \qquad (22)$$

With $\mu \equiv \frac{dR^*}{d\overline{V}}\frac{\overline{V}}{R^*}$ represents the elasticity of short-term capital flows to total capital flows.

Based on these expressions (21 and 22), we can formulate two proposations:

Proposition 1: *The effects of the imposition of capital controls on short-term flows depend on the elasticity of short-term flows relative to total capital flows, as follow:*

if $\mu = 1: \frac{\mathrm{di}^*}{\mathrm{R}^*} = 0$, the level of short-term capital flows remains unchanged

if $0 < \mu < 1, \frac{\mathrm{di}^*}{\mathrm{R}^*} < 0$, the level of short-term capital flows tends to increase

if $\mu > 1, \frac{\mathrm{di}^*}{\mathrm{R}^*} > 0$, the level of short-term flows tends to fall

and

Proposition 2: *The effects of the imposition of capital controls on total capital flows also depend on the elasticity of short-term flows relative to total capital flows, as follow:*

if $\mu = \overline{\mathrm{V}}: \frac{\mathrm{di}^*}{\overline{\mathrm{V}}} = 0$, the level of capital flows is unchanged

if $0 < \mu < \overline{\mathrm{V}}: \frac{\mathrm{di}^*}{\overline{\mathrm{V}}} < 0$, the level of capital flows increase

if $\mu > \overline{\mathrm{V}}: \frac{\mathrm{di}^*}{\overline{\mathrm{V}}} > 0$, the level of capital flows decrease

In these two propositions, the effects of imposing capital controls on both total flows and short-term flows will depend on the elasticity of short-term flows on total flows. The interesting idea of propositions 1 and 2 is that the introduction of controls on capital flows does not necessarily induce an instantaneous reduction in the volume of these flows or a change in the maturity of these flows. The conditions under which this occurs are not very strict. This supports the

diversity, and sometimes contradictory, results found by the empirical literature. For example, proposition 2 shows that under the condition of high values of μ, we can observe a reduction in capital flows resulting from controls. This can be validated empirically by taking a sample of countries applying controls on capital flows and having a high μ value, and other countries with a low μ value. Similarly, proposition 1 shows that each period of controls will necessarily alter the composition of flows in favor of long-term flows. However, the evidence shows that with the absence of capital controls, we can also achieve this goal. It is probably the case of several countries that have introduced controls that the value of μ for these countries is greater than 1. What matters in this paper is the impact of controls on short-term flows. We focus on the first proposition. In the next section, we aim for an empirical validation of this proposition.

3.2. Empirical Validation

Based on the empirical literature, we set the dates of capital controls (on inflows and / or outflows) for the countries of our analysis. We have calculated the coefficients of elasticity of the short-term flows with respect to the total flows. Similarly, we calculated annual changes in these short-term flows. Due to the lack of available data for short-term flows, we used the short-term net flows on external debt. The summary of results of this analysis is presented in Table 3.

Table 3: Empirical verification of the model proposition

	Year	Coef. of Elasticity	Type of Demand	Δ of ST Flows	Result
Indonesia	1991 (I)	0.054	Inelastic	0.006	yes
	2010 (I)	16.707	Elastic	1.526	no
Philippines	1994 (I)	87.785	Elastic	-4.081	yes
	2010 (I)	2.764	Elastic	-3.170	yes
Russia	2010 (I)	0.376	Inelastic	-1.360	no
	2015 (O)	1.387	Elastic	-0.121	yes
South Africa	2010 (I)	0.226	Inelastic	-1.106	no
Thailand	1990 (I)	1.143	Elastic	- 0.658	yes
	1995 (I)	1.150	Elastic	1.279	no
	1996 (I)	2.901	Elastic	-0.757	yes
	2010 (I)	0.574	Inelastic	0.355	yes
	1997 (O)	1.785	Elastic	-3.728	yes
	1998 (O)	0.132	Inelastic	-0.172	no
Turkey	2010 (I)	0.447	Inelastic	-8.992	no
India	2013 (I)	28.247	Elastic	-1.042	yes
Brazil	1994 (I)	1.723	Elastic	0.844	no
	2006 (I)	0.425	Inelastic	1.880	yes
	2008 (I)	7.282	Elastic	-1.137	yes
	2009 (I)	161.967	Elastic	-2.207	yes
	2010 (I)	1.757	Elastic	7.181	no
	2011 (I)	79.834	Elastic	-1.908	yes
	2012 (I)	5.261	Elastic	-0.590	yes
	1999 (O)	1.052	Elastic	-1.141	yes
Colombia	1991 (I)	7.780	Elastic	-2.576	yes
	1992 (I)	0.278	Inelastic	1.513	yes
	1993 (I)	0.267	Inelastic	0.357	yes
	1994 (I)	0.650	Inelastic	-0.231	no
	2004 (I)	23.223	Elastic	-16.180	yes
	2007 (I)	3.132	Elastic	-1.455	yes
	2008 (I)	0.534	Inelastic	0.186	yes
Mexico	1992 (I)	0.565	Inelastic	-0.536	no
Peru	2009 (I)	9.034	Elastic	-8.576	yes
	2010 (I)	10.581	Elastic	-3.615	yes
Cyprus	2013 (O)	0.841	Inelastic	-0.455	no
	2014 (O)	0.598	Inelastic	0.016	yes
	2015 (O)	1.857	Elastic	0.148	no
Nigeria	2015 (O)	12.539	Elastic	-0.988	yes

Venezuela	2010 (O)	1.382	Elastic	4.751	no
	2013 (O)	3.489	Elastic	-0.485	yes
	2014 (O)	5.438	Elastic	-0.595	yes
	2015 (O)	47.207	Elastic	-1.502	yes
Ukraine	2014 (O)	0.639	Inelastic	-10.386	no
	2015 (O)	1.00	Unit elastic	-0.772	no
South Asia	1997	6.948	Elastic	-2.752	yes
	1998	0.311	Inelastic	-0.355	no
	1998	1.575	Elastic	-1.087	yes
	2000	1.867	Elastic	-9.037	yes
	2001	0.057	Inelastic	-0.154	no
	2002	2.553	Elastic	-3.475	yes
	2003	0.010	Inelastic	-0.020	no
	2004	0.561	Inelastic	-0.544	no
	2007	1.435	Elastic	-0.245	yes
	2008	0.737	Inelastic	-0.285	no
	2009	7.339	Elastic	-0.575	yes
	2010	2.480	Elastic	2.234	no
	2011	5.430	Elastic	0.666	no
	2012	0.772	Inelastic	-0.113	no
	2013	10.161	Elastic	-0.880	yes
	2014	35.003	Elastic	-3.391	yes
	2015	4.592	Elastic	-0.956	yes
	2016	0.725	Inelastic	-18.321	no
	2017	0.519	Inelastic	3.542	yes
Latin America	1994	0.960	Inelastic	-0.348	no
	1995	2.207	Elastic	-0.872	yes
	1996	39.560	Elastic	-1.852	yes
	1997	8.244	Elastic	-4.882	yes
	1998	55.460	Elastic	-2.305	yes
	2008	4.254	Elastic	-1.102	yes
	2009	3.292	Elastic	-0.363	yes
	2010	2.052	Elastic	-25.901	yes
	2011	7.525	Elastic	-1.191	yes
	2012	24.259	Elastic	-2.991	yes
	2013	1.366	Elastic	-0.120	yes
	2014	8.972	Elastic	0.548	yes
	2015	132.842	Elastic	-2.021	yes
	2016	1.542	Elastic	-0.569	yes
	2017	0.870	Inelastic	-0.571	no

Source: Author's calculation (data from World Bank, International Debt Statistics).
I : Inflow O: Outflow
Note: Yes stands for yes, proposition 1 is confirmed; No, for no, it did not confirm.

- *First observation*: The most interesting periods are post-crisis (after 1997 and 2008). These two periods correspond, for the majority of the countries, to the dates of controls. The Latin American region seems to verify the model proposition, with almost complete validation. For this region, the elasticity of demand for short-term flows on total capital flows is mostly elastic and curbs short-term flows.

- *Second observation*: For the countries of South Asia, in the post-crisis period (and until 2017), when the elasticity of demand for short-term flows is inelastic (i.e., <1), there is a decrease in short-term capital flows. Additionally, when the elasticity is elastic, there will also be a curb in these flows. The finding is interesting for this region. Aside from the years 2011, 2012 and 2017, whether elastic or inelastic demand, capital controls will reduce short-term flows.

- *Third observation*: By analyzing countries, case by case, there is a large confirmation of the model proposition (more "yes" than "no"). Philippines, India, Colombia (except in 1994), Peru, Nigeria show a downward variation in short-term flows when demand is elastic and vice versa when demand is inelastic.

Some other countries, such as South Africa, Turkey, Mexico and Ukraine, contradict the model's proposition. However, these countries have no significant experience with capital controls; the impact of controls is analyzed only for one year (except Peru for two years). Thailand, Brazil, Colombia and Venezuela have several years of experience with controls. For these countries, elastic demand reduces short-term flows and inelastic demand increases them.

4. CONCLUSION

The effectiveness of capital controls to reduce short-term flows is the focus of our analysis. It was necessary to know under which conditions these controls operate well. The model developed helps us to set some of these conditions. It indicates that a curb in short-term flows, following capital controls, is dependent on the elasticity of short-term capital flows relative to total flows. The values of this elasticity determine the variation way of short-term flows. We empirically confirm this finding by computing the elasticity coefficients for each country and each year of instituting controls. When we compare the values of these coefficients with the variation of short-term capital flows, results are satisfactory and validate the model's proposition. The implication of this study highlights the importance of following the evolution of this elasticity. The economic policies can act properly as a result of this monitoring. This is that Hendren (2013) names 'the policy elasticities'. Achieving an elastic demand for short-term flows (> 1) will reduce these flows. Controls can be introduced when this demand is inelastic (< 1). This can tell us about the effective dates in which a country can use controls. It is also a preventive measure before the country's economic situation worsens. The shift from elastic demand to an inelastic demand can give signals to a country that short-term flows are likely to increase. Some previous work has found that short-term flows are dependent on another type of elasticity, the interest rate (Turner, 1991). Short-term capital flows can be highly interest rate elastic. Moreover, as the starting point of our model is the foreign investors, some studies have found that foreign investors are highly sensitive to uncovered interest parity conditions (Goldberg and Krogstrup, 2018). This opens the door to other issues regarding the effectiveness of controls through the computing of the elasticities of short-term flows relative to the changes in interest rate. Thus, monetary policy has a great role to play, by setting the appropriate instruments, to limit excessive short-term flows. Adequate monetary policy with well-designed capital controls can ensure the success of these controls. As the first-generation crises models suggested in the early 1980s, the crises are mainly due to a weakness in economic fundamentals. Based on our analysis of countries' experiences, this can be true with capital controls. Healthy macroeconomic conditions can help the effectiveness of capital controls. Each country must first begin by stabilizing its macroeconomic system, even before instituting controls. Unfortunately, in this study, we have reiterated that the majority of controls occur in the periods of two crises (1997 and 2008). The graphs presented in the appendices are more significant for these periods. There appears a lack of preventive measures before crises, which can reduce the effectiveness of capital controls. Finally, not only capital controls can curb short-term flows. Monetary policy will have a role in reducing interest rate differentials (case of Malaysia). Adequate flexible exchange rate policy discourages speculative flows (case of Chile and Colombia), support the prudential and preventive regulations (case of Chile, Colombia, and Malaysia) and support the confidence of foreign investors (case of Thailand) (Ariyoshi, Kirilenko, Otker, Laurens, Kriljenko and Habermeier,2000).

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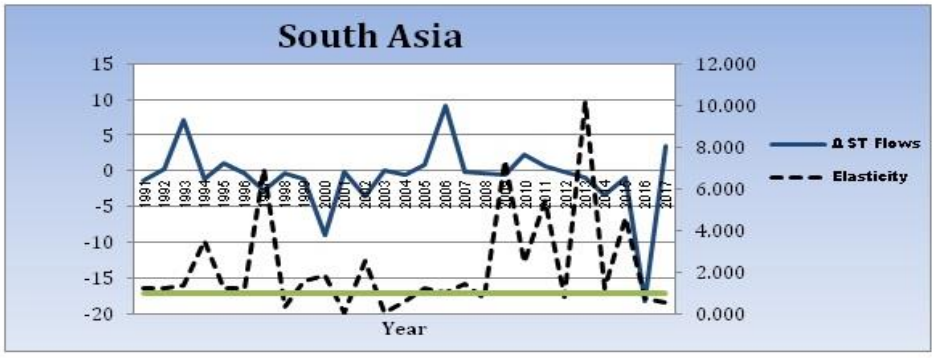
APPENDIX

The analysis is completed by graphs for the region of South Asia and Latin America, and for some case countries. Each graph represents a simultaneous evolution of the calculated elasticity coefficient and the variation of short-term flows. The first axis corresponds to the variation of short-term flows. The second axis corresponds to the elasticity coefficients. The period is larger than what was shown in Table 3 (from 1991 to 2017). The horizontal line corresponds to value '1' of the elasticity. According to the first proposition of the model, above this line, the demand is elastic and it must correspond to a negative variation of the short-term flows. Below, or otherwise between 0 and 1, the demand is inelastic and the variation of the short-term flows must be positive.

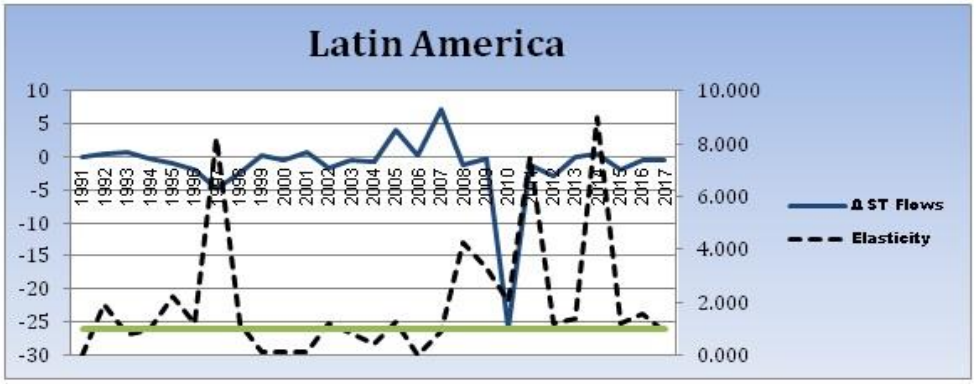
For the South Asia region, there are two clear positive variations in short-run flows, but only before the two financial crises (1992 - 1994 and 2004 -2007). For the rest of the years, we observe a decline in short-term flows. This decline coincides with an elastic demand for short-term flows (coefficient of elasticity > 1), which is in line with the model.

Graph 1: Evolution of the calculated elasticity coefficient and the variation of short-term flows – South Asia



For the Latin American region, the situation is almost similar. The demand is inelastic between the two financial crises (from 1998 to 2007); thus, this period corresponds to a positive variation of shortterm flows. Outside this period, elastic demand coincides with negative variation of short-term flows. There is reason to believe that there has been a capital controls relaxation between the two crises that has motivated the return of short-term flows for these regions.

Graph 2: Evolution of the calculated elasticity coefficient and the variation of short-term flows – Latin America

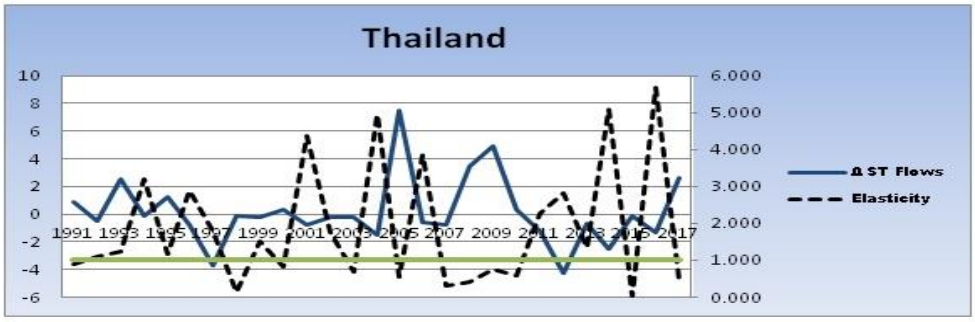


The Ukraine graph shows some failure of capital controls. Despite elastic demand for short-term flows, we did not observe a decline throughout the analysis period. Even if there was a decrease, it was weak.

Graph 3: Evolution of the calculated elasticity coefficient and the variation of short-term flows – Ukraine

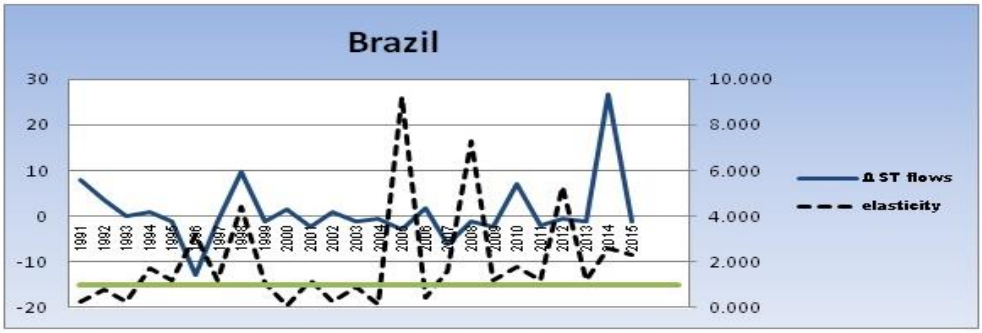
Thailand confirms the proposition of the model, especially between 2007 and 2010. The transition to an inelastic demand in 2007, immediately translated into a positive variation of short-term flows.

Graph 4: Evolution of the calculated elasticity coefficient and the variation of short-term flows – Thailand



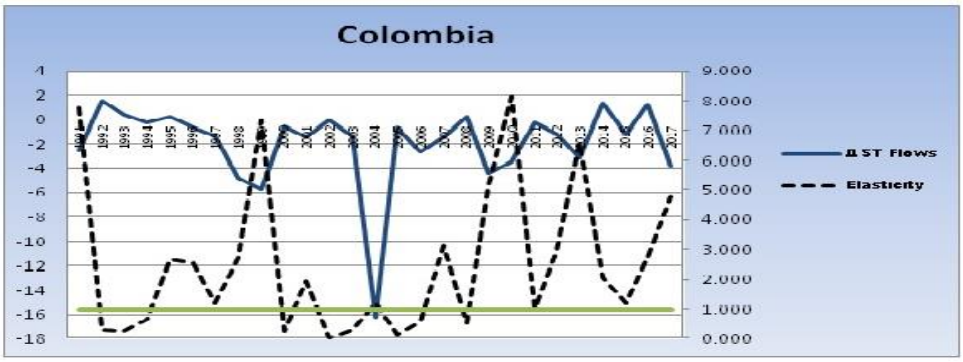
Brazil, which introduced controls in 2014, saw a negative variation of short-term flows in the years that followed and simultaneously a transition to elastic demand for these flows. The other years of controls (from 2006 to 2012) do not the confirmation of the model's assumptions because the variation in short-term flows was low.

Graph 5: Evolution of the calculated elasticity coefficient and the variation of short-term flows – Brazil



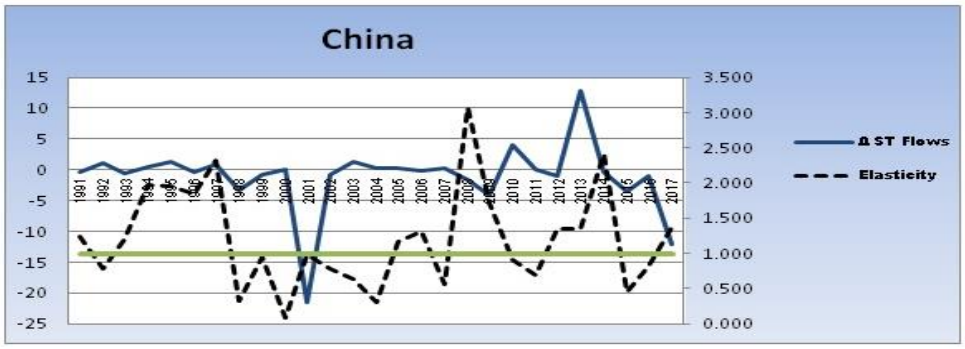
Colombia has mastered short-term capital flows. During the analysis period, there is a decrease in the variation of short-term flows. Demand for these flows is largely elastic except for a few years (from 2001 to 2007). The period of capital controls in this country (1992-1994) is significant; demand coincides with an upward variation of short-term flows, which is in line with our model. The second wave of controls used in 2007 and 2008 also cause a fall in short-term flows.

Graph 6: Evolution of the calculated elasticity coefficient and the variation of short-term flows – Colombia



The case of China does not allow an accurate conclusion of the model proposition. First, the capital controls are spread over a long period. Similarly, with the exception of the years 2000 to 2002 (which contradicts the proposition of the model), short-term flow variations are small. They become more volatile after the crisis of 2007, with a negative variation. The period that is closest to the findings in our research is that between 2007 and 2009, the demand is elastic and the variation of short-term flows is negative.

Graph 7: Evolution of the calculated elasticity coefficient and the variation of short-term flows – China



For Malaysia, the lack of data only allowed a graphical analysis between 1991 and 2000. There are two interesting periods for this country. In the first, between 1994-1995, the demand is elastic and corresponds to a negative variation of short-term flows. The same pertains to the period 1997-1998. These two periods correspond to the instituting of capital controls in this country and confirm the model's suggestions.

CLUSTER DETERMINATION IN THE CROATIAN ECONOMY BASED ON THE INPUT-OUTPUT ANALYSIS

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ABSTRACT

Input-output analysis provides numerous analytical possibilities, of which the scientific and professional literature emphasizes the determination of clusters according to the level of aggregation of the national economy. The cluster represents a group of productive sectors integrated into the entire value added chain, from production and supply of basic raw materials and supplies to the delivery of final products. The purpose of this paper is to determine clusters in the Republic of Croatia based on the input-output table for the Croatian economy for 2015. The intensity of interconnections among individual productive sectors was analyzed from the aspect of the demand channel of intermediate products and from the aspect of the supply channel of intermediate goods and services of the observed productive sector to other productive sectors. Cluster determination is based on a combination of backward and forward linkages and a synthetic flow index. According to the intensity of interconnections between productive sectors measured by the flow index, the most significant clusters in the Croatian economy are: Food products, beverages and tobacco products cluster, Constructions and construction works cluster, Public administration and defense services; compulsory social security services cluster, Land transport services and transportation services via pipelines cluster, Accommodation and food services cluster, Financial services, except insurance and pension funding cluster and Coke and refined petroleum products cluster.

Keywords: *clusters, input-output analysis, productive sectors*

1. INTRODUCTION

Input-output (IO) analysis is a quantitative macroeconomic analysis for determining the dependency between the productive sectors of the national economy (Miller and Blair, 2009; Mikulić, 2018). Economic analysts and economic policy makers apply IO analysis to identify changes in final demand for economic activity, in the analysis of employment, labor productivity, in analyzing the importance of various foreign trade impact to the structure of the domestic economy and others. The IO analysis is based on the IO table, in which the productive system of the national economy is broken down into a number of productive sectors, with each productive sector comprising of a group of producers engaged in the same activity, i.e. producing the same goods and services. In order to achieve the most realistic picture of the structure of productive interdependencies, a greater degree of disaggregation of the economy is needed in such a way that each sector is as homogeneous as possible in terms of the applied

productive processes. According to the Regulation of the European Parliament and the Council on the European system of national and regional accounts in the European Union, for the member states of the European Union (EU), IO tables are disaggregated into 64 productive sectors (European Union, 2013). The importance and role of individual productive sectors in inducing the growth of national economy production should be analyzed from the perspective of the demand channel for intermediate products and from the aspect of supply channel of intermediate goods and services of the observed productive sector to other productive sectors. The demand channel analyses the effects of a particular productive sector on the productive sectors that are included in the value chain of that sector through the demand for intermediate goods and services. Namely, the growth of production of the observed sector implies the need for inputs from other productive sectors, which indirectly increases the production of all productive sectors included in the production chain of the observed sector. These effects are called backward linkages. According to the author, who is considered to be the creator of the demand-oriented IO model, a matrix showing how much production each productive sector needs to meet in order to meet a given level of final demand for different goods and services is called the Leontief inverse matrix (Miller and Blair, 2009; ten Raa, 2005). The Leontief inverse matrix is crucial for the calculation of multipliers[1], i.e. indicators that determine estimates of the effects of final demand for goods and services produced by a given sector on the level of total domestic production of all productive sectors. Recent scientific and professional literature on the Croatian economy has mainly assessed the effects of final demand on output, gross value added and employment (Lovrinčević and Mikulić, 2014; Buturac, Lovrinčević and Mikulić, 2014; Buturac and Vizek, 2015; Keček, Žajdela Hrustek and Dušak, 2016; Mikulić, Keček and Žajdela Hrustek, 2017; Keček, Milković and Mikulić, 2019; Keček, Milković and Boljunčić, 2019). The demand-oriented IO model can be extended to include many other variables such as taxes and import dependency (Mikulić and Lovrinčević, 2018) and effects on renewable energy sources and the environment (Mikulić, Rašić-Bakarić and Slijepčević, 2016; Mikulić, Lovrinčević and Keček, 2018; Keček, Mikulić and Lovrinčević, 2019). Cross-sectoral links through the supply of goods and services of a particular sector to other sectors, or through supply channel of intermediate products are called forward linkages. These links are created by increasing the output of the observed productive sector, which implies additional production of goods and services that can be used for intermediate consumption of other productive sectors. The analysis of the influence of the supply channel of intermediate products of a certain sector to other sectors is based on the matrix of coefficients of intermediate outputs called the Ghosh (Ghosh, 1958) matrix[2]. Unlike the demand-oriented IO model based on the multiplicative effects of demand, Ghosh's supply-oriented IO model is a model in which the supply of particular sectors is considered the driver of the economy. Restrictions on the production capabilities of certain productive sectors, whose products are an important intermediate input to other sectors, can negatively affect the dynamics of economic growth. The Ghosh IO model assumes that the distribution of outputs from productive sectors to other sectors is stable, and that the increase in output in a given sector through deliveries to another sector affects its increase in production (Miller and Blair, 2009; Mikulić, 2018). In domestic literature, Ghosh's multipliers in terms of output, gross value added and employment have been analysed by Mikulić (2018) and Keček, Milković and Boljunčić (2019). The purpose of this paper is to identify clusters, i.e. groups of productive sectors that are strongly interconnected by combining backward and forward effects based on the latest available IO table for the Croatian economy for 2015. The contribution of the paper is the lack of empirical research that questions the interdependence of productive sectors in the Republic of Croatia based on IO analysis.

[1] For details on the type of multipliers with respect to the open or closed IO model, see Oosterhaven et al., 1986; Grady and Muller, 1988; ten Raa, 2005; Miller and Blair, 2009; Cassar, 2015; Mikulić, 2018.
[2] For details on the Ghosh matrix, see Augustinovics, 1970; Miller and Blair, 2009.

This paper is structured as follows: after the introductory chapter, a description of the methodological framework for determining clusters of the national economy in the IO system is given. The third chapter presents the empirical results of backward and forward linkages combination in the IO system for cluster identification in the Republic of Croatia. The final chapter is the conclusion with the final remarks.

2. DEFINING CLUSTERS IN THE INPUT-OUTPUT SYSTEM

Clusters are legal entities, geographic concentrations of interconnected enterprises, specialized suppliers, service providers, enterprises in related sectors and related institutions in areas that are competing with each other but also cooperating (Government of the Republic of Croatia, 2011). According to the Cluster Development Strategy in the Republic of Croatia 2011 - 2020 the advantages of clustering are to strengthen the competitiveness of enterprises, to strengthen the competitiveness of regions, to improve the structure of economic activities, to network the public, business, scientific and research sectors and to understand their own economy. Dragičević and Obadić (2014) point out that cluster policy is not isolated nor independent, but embraces all policies that affect cluster development and provides a framework for dialogue and cooperation between enterprises, higher education and research institutions, public and non-public organizations. Cluster analysis identifies groups of similar objects according to predefined variables. An overview of the two main approaches to economic data cluster analysis, hierarchical clustering and k-means clustering, is described in detail in Řezanková (2014). Within the network analysis framework, clusters or communities within the network can be identified using IO tables and algorithms (Botrić, 2013). Communities within the network represent those economic activities that are more closely related to each other than to the rest of the economy. Given the pre-defined aggregation of the national economy, IO analysis does not allow the determination of enterprise clusters but the identification of clusters of productive sectors. The national economy clustering in the IO system is based on the combination of the effects of individual productive sector from the aspect of the demand channel (backward linkages) and from the aspect of the supply channel of intermediary goods and services (forward linkages). The basis of the IO model is technology matrix A, which shows the direct productive interdependencies of all productive sectors. Elements of the technology matrix are technical coefficients a_{ij} defined as the ratio of the production of sector i which requires sector j for the production of one unit of its product, i.e.

$$a_{ij} = \frac{x_{ij}}{x_j} \tag{1}$$

According to the European Commission (2007) and Mikulić (2018), forward linkages are described with matrix

$$S = [\mathrm{diag}(A \cdot i)]^{-1} \cdot A \tag{2}$$

where A is a technology matrix, and i column vector of ones. Elements of matrix S for every row represent the share of deliveries of sector i to sector j in the total value of goods and services which were delivered by sector i for intermediary consumption of all other productive sectors.

Matrix

$$D = A \cdot [\mathrm{diag}(i^{\tau} \cdot A)]^{-1} \tag{3}$$

includes backward linkages. Elements of matrix D for every column represent shares of intermediary consumption for every productive sector in the total intermediary consumption of that sector. The intensity of connectivity between the two sectors is represented by a flow index (FI) that combines forward and backward effects. The flow index is calculated as the average value of the corresponding elements of the matrix S and D, i.e. it is calculated according to the formula

$$FI = \frac{S+D}{2} \quad (4)$$

The flow index enables the identification of clusters of productive sectors. The index value that implies a high intensity of interconnections between productive sectors is usually arbitrary set. This paper applies the cut-off value from previous research, and it is considered that the productive sectors are intensely related if the value of the flow index between two productive sectors is greater than 0.1 (Mikulić, 2018). In addition to the intensity of interconnections, the methodology used also allows determining the direction of interconnections between individual sectors. Thus, the cluster carrier is in the supply chain, usually closer to the final consumer, and such a sector operates through demand channels to all sectors in the series, from which it procures intermediate products. On the other hand, for certain productive sectors that do not have a high proportion of final deliveries, their impact on other productive sectors through the supply channel is more significant.

3. FLOW INDEX RESULTS

According to the methodology described in the previous chapter and IO table for the Croatian economy for 2015, flow index between all production sector pairs of the Croatian economy have been calculated. Flow index values between two sectors greater than 0.1 were analyzed. The higher flow index value, the stronger correlation between observed sectors. For each pair of productive sectors, there are two flow index. Flow index values per row show significant deliveries of particular productive sector to another sector, while flow index values by columns indicate significant purchase of a particular sector. For example, the flow index of goods delivered from the agricultural sector to the food production sector is 0.41, which indicates the great importance of agricultural products in food production. On the other hand, the intensity of the links between food production sector and agricultural sector is slightly weaker (FI = 0.17), but significant, meaning that the food sector products are used in agricultural production. A high flow index (FI = 0.5) was detected for goods supplied from the mining and quarrying sector to the coke and refined petroleum sector, while the reverse indicates that the coke and refined petroleum products were not significant for the mining sector (FI = 0). It can be observed that the production of mining and quarrying and the production of petroleum products are an example of a vertically integrated cluster in which crude oil is used as a primary raw material for the production of derivatives, while the flows of intermediate products to other sectors are not of high intensity. According to the intensity and direction of deliveries between productive sectors, the most significant clusters of the Croatian economy are:

- food, beverages and tobacco products cluster which uses goods and services of the following sectors: agriculture, fishing, paper, rubber and plastics products, printing and recording services,
- constructions and construction works cluster whose value chain contains following sectors: financial and insurance services, and other non-metallic mineral products,
- public administration and defense services cluster which uses goods and services of the sector accommodation and food services, education services, other personal services, textile products, electricity, other transport equipment,

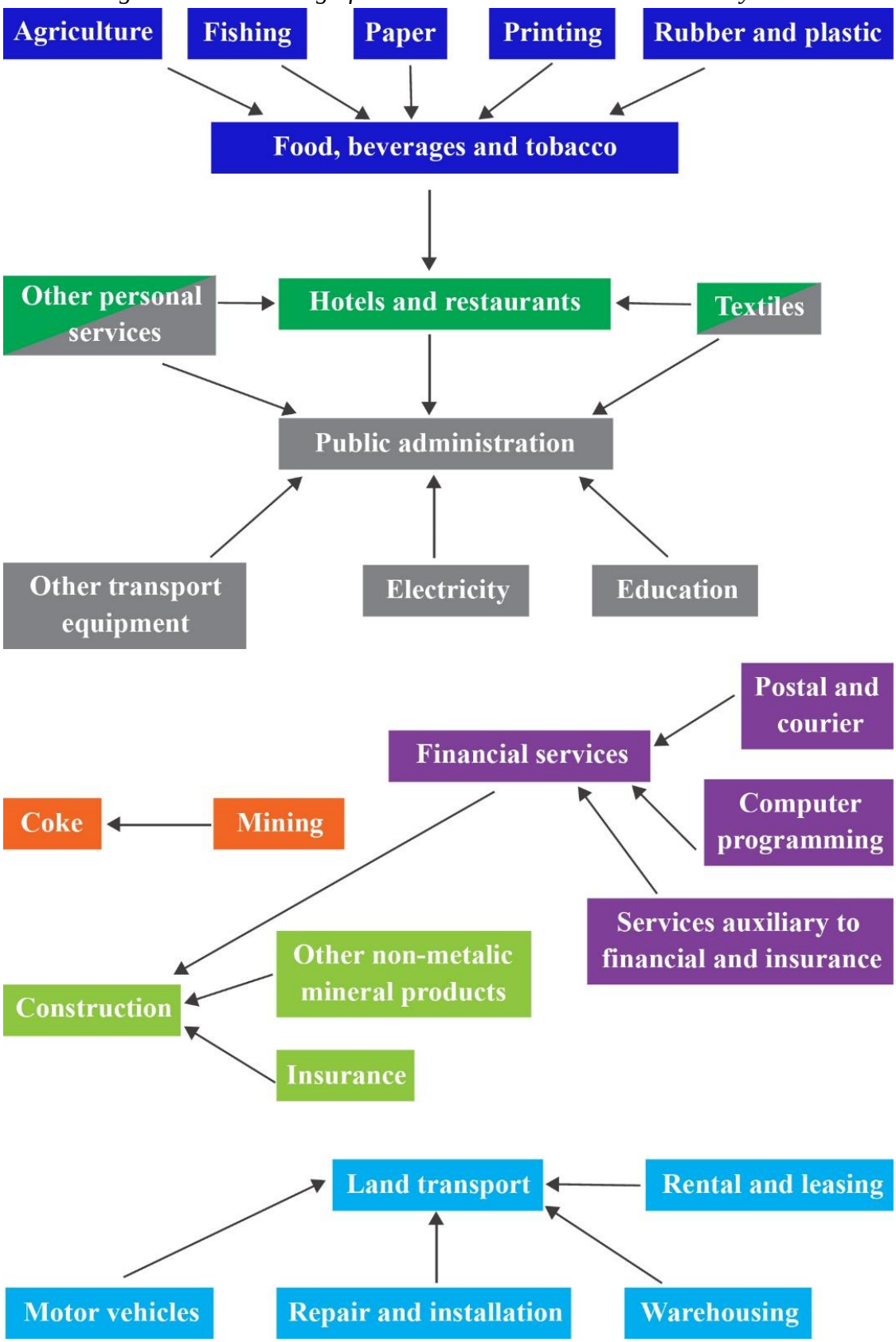
- land transport services and transport services via pipelines cluster which includes motor vehicles, warehousing, repair and installation services of machinery and equipment, rental and leasing services,
- hotels and restaurants cluster which uses food, beverages and tobacco products, textile products and other personal services,
- financial services, except insurance and pension funding cluster includes sector postal and courier services, services auxiliary to financial services and insurance services, computer programming,
- coke and refined petroleum products cluster uses goods and services of the sector mining and quarrying.

Due to the transparency, seven most important clusters for the Croatian economy for 2015 are graphically shown in Figure 1, where arrow indicates the direction of integration, i.e. the flow of intermediate goods and services from one productive sector to another. According to the flow index values shown in Table 1 in the Appendix, in addition to the above clusters, a high intensity of connection was also observed between some other sectors. Among significant, following sectors are highlight: air transport cluster which uses goods and services of sectors repair and installation services of machinery and equipment, land transport and warehousing; retail trade services cluster which includes sectors electricity, real estate services and legal and accounting services; education cluster which uses goods and services of sectors electricity, other professional, scientific and technical services and employment services; insurance, reinsurance and pension funding services cluster whose value chain contains postal and courier services, computer programming services auxiliary to financial services and insurance services. Furthermore, it can be observed that for sector Public administration and defense services and sector Telecommunications only backward effects are significant, while for sector Other non-metallic mineral products only forward effects are significant. The reason for existence only backward effects for the sector Public administration stems from the fact that it is a non-market public services that are primarily used as a final consumption of government. In the case of telecommunications, the absence of intense forward effects towards a particular productive sector can be explained by the fact that all productive sectors use this category of services to some extent, and forward effects are widespread and are not limited to a specific productive sector. Other non-metallic mineral products sector mainly covers the production of construction materials used by the construction sector. Comparing the results obtained in this paper with previous research conducted in Mikulić (2018) for 2013, it can be observed that there are no significant differences in the most significant clusters of the Croatian economy identification. In addition to the food, construction, hotel and restaurant and public services clusters, Mikulić also identified oil products and health cluster among the more significant.

4. CONSLUSION

While backward linkages analyses the effects of a productive sector on productive sectors included in its added value chain through demand of intermediary goods and services, forward linkages examine the effects through the supply of goods and services. Based on the combination of backward and forward linkages, this paper identifies seven major clusters in the Croatian economy, that is, seven groups of productive sectors that are strongly interconnected. These are food, beverages and tobacco products cluster, construction cluster, public administration cluster, land transport cluster, accommodation and food services cluster, financial services cluster and coke and refined petroleum products cluster.

Figure 1: The most significant clusters in the Croatian economy in 2015



** abbreviated names for productive sectors were used according to the most important product based on the Classification of Products by Activity (CPA) (https://ec.europa.eu/eurostat/web/cpa-2008)*

Source: Authors'

The identified clusters of the Croatian economy based on the IO method are a platform for improving sectorial competitiveness as well as the overall economic growth and development of the Republic of Croatia. Future research is expected to apply the IO method for analyzing clusters of productive sectors of other EU member states. A comparative analysis of clusters of Croatian productive sectors with similar economies of the new EU member states would enable a better quality insight into the economic position of a particular sector, and thus its competitiveness in the context of increasing globalization and specialization of economies. The identification of the most significant clusters could serve to economic policy makers as a guide for the adoption of economic strategies aimed at improving those sectors that are expected to contribute more to economic growth and social well-being. The identified clusters provide an analytical basis for analyzing the effects of particular sector-specific economic policies. Thus, it can be concluded that economic policies that stimulate, for example, the tourism sector, i.e. the Hotels and restaurants sector indirectly contribute to the increase of activities and other sectors involved in the value added of tourism: food and beverage production, textile products and other personal services. However, economic policy makers need to be aware of the potential negative indirect effects in the event of market distortions that influence the decline of cluster operators' activities. In such a case, due to the intense cross-sectorial connectivity, the decline in activity will also affect all other sectors that make a particular cluster.

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APPENDIX

Table 1: Flow indices of production sectors of the Croatian economy

Sectorcodes	A01	A03	C10-C12	C16	C17	C19	C20	C21	C22	C27	C28	C31_C32	C33	D35	E37-E39	F	G46	G47	H49	H51	H53	I	J59_J60	J61	K64	K65	M71	M72	M73	N79	O84	P85	Q86	R93	S95	S96
A01		-	0.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A02	-	-	-	0.31	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A03	-		0.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	-	-	-	-	-	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C10-C12	0.17	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.38	-	-	-	-	-	-	-	-	-	-	-	-	-
C13-C15	-	-	-	-	-	-	-	-	-	-	-	0.10	-	-	-	-	-	-	-	-	-	0.10	-	-	-	-	-	-	-	0.15	-	-	-	-	-
C17	-	-	0.13	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C18	-	-	0.13	-	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C19	-	-	-	-	-	-	-	-	-	-	-	-	-	0.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C20	0.15	-	-	-	-	-	0.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C21	-	-	-	-	-	-	-	0.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C22	-	-	0.16	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C23	-	0.10	-	-	-	-	-	-	-		-	-	-	-	-	0.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12
C26	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13	-
C29	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C30	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24	-	-	-	-	-
C31_C32	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.33	-	-	-
C33	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	0.12	0.18	-	-	-	0.18	-	-	-	-	-	-	-	-	-	-	-
D35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	0.14	-	-	-	-	-	-	-	-	-	-	-	0.13	0.11	-	-	-	-
F	-	-	-	-	-	-	-	-	-	-	-	0.14	-	-	-	-		-	-	-	-	-	-	-	-	-	0.37	-	-	-	-	-	-	-	-
G47	-	-	-	-	-	-	-	-	0.12	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

H51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.31	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.21	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-
I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.30	0.12	-	-	-	-	-	-	-	-
J62_J63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.20	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-
K64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-
L68B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M69_M70	-	-	-	-	-	-	-	-	-	-	-	-	-	0.11	-	-	0.11	0.10	-	-	-	-	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.11	0.28	-	-	-	-	-	-	-	-	-	-	-
M72	-	-	-	-	-	-	-	-	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M74_M75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19	-	-	-	-	-	-	-	-
N77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.11	-	-	-	-	-	-	-	-
P85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.15	-	-	-	-	-	-	-	-	-
Q86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q87_Q88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13	-	-	-	-	-
R93	-	-	-	-	-	-	-	-	-	-	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	-	-	-	-	-	-	-	0.13	-	-	-	-	-	-	-	-	-

Source: Authors' calculation

DETERMINANTS OF ECONOMIC BEHAVIOR OF INDIGENOUS PEOPLES OF THE ARCTIC ZONE: RESULTS OF THE EMPIRICAL STUDY OF NENETS REINDEER HERDERS

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ABSTRACT

The study is actualized by the active inclusion of the Arctic into the orbit of global economic and political interests, which inevitably affect the traditional economy and the traditional nomadic lifestyle of small peoples engaged in reindeer husbandry. This article presents the results of identifying the factors and conditions of transformation of economic behavior of indigenous peoples of the Arctic zone of the Russian Federation. Based on the socio-psychological studies of Russian and foreign scientific theories, the reasons for the savings behavior of the indigenous peoples of the North are explained. The modeling of transformation of economic behavior, through the prism of the choice of indigenous peoples' traditional occupation, is carried out.

Keywords: *Arctic, indigenous minority peoples of the North, economic behavior, determinants, transformation of economic behavior*

1. INTRODUCTION

Currently, globalization has a direct impact on all social processes, including the economic behavior of people, regardless of their origin and place of residence. The inclusion of the Arctic in the orbit of global economic and political interests, the active state and supranational influence on the traditional economy and the traditional way of life of the indigenous minority peoples of the North (IMPN) located on the land territory of the Arctic zone of the Russian Federation (AZRF) leads to a transformation of the economic behavior of people related to this category. Sociological and psychological studies reveal many problems in the life of IPON, and they do not always have a positive solution. Moreover, the problems form deviant behavior and contribute to marginalization of IMPN. Despite the numerous theoretical concepts analyzing various aspects of economic behavior, there is a shortage of scientific concepts (models) that explain the formation and transformation of the economic behavior of IMPN. It becomes obvious that in relation to the indigenous peoples, classical theories of analysis of economic behavior require clarification. There is an objective need to develop a fundamentally new optimal model for the transformation of economic behavior and mechanisms that ensure a positive trend of the analyzing process, taking into account the specifics of the existence of IMPN in the global information space and the consumer society.

2. THEORETICAL FOUNDATION

The objective of the study is to develop integration mechanisms for the positive transformation of the indigenous people's economic behavior in the context of globalization, and to increase their subjective and economic well-being. The subject of the study is the types, determinants and characteristics of the indigenous peoples' economic behavior in the context of globalization processes and the modernization of socio-economic relations on the territory of the Russian Arctic. Methodologically, the study is based on the methods of economic science, economic sociology, economic psychology, economic culture, and ethnoeconomics. The work uses the results of theoretical and empirical studies in economics, sociology, psychology and culture, studies of ethnosocial characteristics of indigenous peoples and their influence on the behavior of IMPN. Economics investigates how wealth is formed and distributed as a result of human actions (behavior). Studies in the field of economics are mainly aimed at the analysis and forecast of human behavior, since a person is the primary source of economic relations. Therefore, the studies use an economic approach to explain human behavior, formed on the basis of classical theory. They are based on the assumption of maximizing behavior, market equilibrium and stability of preferences [1]. Proponents of the economic approach consider it a universal tool for explaining and "modeling a wide variety of problems such as language development, church attendance, political activity, the legal system, animal extinction, suicide, altruism and social interactions, as well as marriage, childbirth and divorce." In order to systematize the types of economic behavior, scientific literature was used, including [2-5]. As a result, the types of economic behavior are grouped in three ways: the formation of resources; resource usage; rights to resources presented in table 1.

By the method of forming resources	By the way resources are used	In relation to resource rights
Hired labor behavior	Rational behavior (balance behavior model)	Possession
Entrepreneurial behavior (self-employment)	Investment behavior	Use
Rental behavior	Saving behavior	Disposal
Free – riding behavior	Irrational behavior	
Criminnal (gaming) behavior	Demonstrative behavior	

Table 1: The types of economic behavior

3. DEVELOPMENT OF QUESTIONNAIRE STATEMENTS

Economic behavior is also the subject of Economic Sociology. Sociology explores models related to the concept of a rational man, as well as institutions that promote or impede the rational use of economic resources [2]. Economic sociology provides a wide range of tools for economic science and allows to customize communication with actors and thereby to study the direct and inverse relationships in the regulation of human behavior, individual and typical manifestations of the characteristics of economic behavior. Economic sociology is closely linked to economic psychology, with the only difference that the latter pays more attention to the reasons (preferences, attitudes). Psychology explores "subjective, conscious and unconscious phenomena associated with a person reflecting the economic sphere of life and the regulation of his economic behavior" [6]. This study has used work on behaviorism, one of the principles of which establishes that "the external environment affects the mental (internal) processes of a person and her subjective economic well-being, while her internal attitudes, value orientations and expectations subsequently affect his economic behavior" [7], which leads to the mutual determination of value models of human behavior and corporate social models.

Studies of behavioral economics have shown that people are far from always rational and prone to make mistakes that cause harm not only to them, but also to society [8]. Accordingly, the state has the right to intervene in economic relations, "push" people to more rational behavior, which was the rationale for paternalistic management methods. Studying the features of economic behavior, it is necessary to take into account the economic culture that dominates society. "Economic culture in the narrow sense of the word is a typical way of economic thinking and activity of a people, which is a combination of institutionalized methods of activity (normative standards, economic interests, values, norms, rules, abilities and skills, patterns of behavior, cultural standards, traditions, social habits). Economic culture is a regulator of economic behavior allowing to adapt to specific economic conditions (behavioral stereotypes and economic knowledge)" [9]. "An economic culture formed in specific historical and natural-geographical conditions determines the dominant ways and methods of control over economic resources, forms a matrix of economic behavior and is preserved in stereotypes of mass consciousness" [2]. Ideas and worldview embedded in the culture of the people are the main motivating factors for the actions of individuals [10]. The influence of culture, customs and traditions on people's preferences leads to the need to study the ethnosocial characteristics of the economic behavior of peoples and to identify the values and preferences of ethnic groups that determine various forms of economic behavior, which is the subject of ethnoeconomics. Ethnoeconomics studies the economic relations that arise within a regional economic system under the influence of the traditional economic structure of an autochthonous ethnic group [11]. Thus, the economic activity of a particular ethnos, with its cultural and spiritual component that stably (long-term) inhabits a certain space, is linked to this space, with its natural-geographical, climatic and biological features. "World experience shows that the region succeeds mainly in those sectors that meet historical conditions and national character" [12]. Summarizing the theoretical and empirical knowledge accumulated in works on economics, economic sociology, psychology, culture, behavioral economics, ethno-economics, the main determinants of the economic behavior of indigenous peoples have been identified and theoretically substantiated (Table 2).

Table following on the next page

Determinant	Explanations
Worldview capital	Ideas and worldview of an ethnos including a set of values, norms, rules, behavior patterns, cultural standards, religious beliefs, rites, traditions, social habits. In dynamics - cultural interchange and cultural innovations, the phenomenon of mass culture. Use of worldview potential and its transformation.
Natural and climatic conditions, geoeconomics	Climatic and geographical conditions; geobotanical and biological resources; everything that determines the resource base of the economy including profitability of the location, transport accessibility of markets, and the possibility and the depth of the range of trade and economic links. In dynamics - the growth or stagnation of the ethno-economy.
Geopolitical conditions	Geopolitical conditions and events including relations with neighboring peoples, regionsж unification or joining of other peoples and states, migration, settledness, war and political tension, recognition or restriction of the rights of indigenous peoples. In dynamics - the processes of globalization and glocalization.
Ethno-social features	Ethno-social stratification and stratification into phratries, genera, classes, srata, social groups that differ in their role in the socio-economic life of society; hierarchical attitudes of ethnic self-identification; status, privileges.
Legislation	Legislation in general and in particular in Ethnoeconomics formal regulatory rules; institutions of the country (region) of residence; public policy related to the conservation and development of Ethnoeconomics; paternalism.
Technology	Technologies of ethnoeconomics and external technological environment. In dynamics - industrial and post-industrial transitions.
Education	Competencies in the field of ethnoeconomics and related areas, level of education, vocational training, skills.

Table 2: Determinants of economic behavior

The given determinants of economic behavior are naturally inherent in other (non-IMPN) peoples with the only difference being that the IMPN have a traditional worldview. Moreover, IMPN are more dependent on natural and climatic conditions and traditional resources and have less impact on geopolitics, geoeconomics and legislation. Finally, they have unique ethnosocial features and life and are dependent on the external technological and educational environment. To identify the peculiarities of the indigenous minority peoples of the North' behavior, the works of ethnographers, historians, sociologists, economists and lawyers have been used. Khomich L.V., Vasilieva V.Y., Karapetova I.A., Golovneva A.V., Yuzhakova A.A., Mukhacheva A.D. and Kharyuchi G.P. have studied the Nenets culture, everyday life and internal organization. The culture of the Khanty, their social organization and religious beliefs, the functions of the tribal structures, have been studied by Lukina N.V., Fedorova E.G., Golovnev AB, Sokolova Z.P., Kulemzin V.M., Gemuev I.N. , Zenko A.P., Ryndina O.M. Ethnogenesis of the Selkups has been explored in the works of Khelimsky E.A., Glushkov S.V., Becker E.G., Tukova N.A., Chindina L.A., Ozherodov Yu.I.

4. RESULTS

Below are examples of the influence of the determinants on the formation of characteristics of economic behavior among IMPN.

- *Worldview capital* - Determines the choice of the traditional life style (TLS) and the occupation of traditional economic activity (TEA) in the clan territories. Herding reindeer, fishing, hunting, life outside the urban environment, self-employment.

Potentially provides the opportunity to be an agricultural entrepreneur. In case of a deer stock loss, hired labor behavior, but seek to return to independent activity. The loss of the ability to conduct TEA leads to "free-riding" or criminal behavior. Whenever possible, rent behavior is also used - providing clan lands for grazing other people's flocks, providing deer for use. [13] Cultural innovations and innovations in the political economy (religion, unions, market) are woven into the traditional consciousness, but do not change the underlying values. In relation to the rights to resources of the traditional economy, the preferred image is the owner of the livestock and patrimonial lands. “The processes of globalization associated with economic changes destructively affect ethnic culture. There are some changes in the system of traditional institutions of socialization, and a partial loss of elements of national life, beliefs, customs, traditions, and national language. Modern world trends negatively affect the awareness of the ethnicity and initiate the shaking of the ethnic principle in the individual” [14-16]. Ethnopsychological features are an obstacle to finding work in industrial fields (the fuel and energy complex, construction, and transport). Rational and saving behavior is preferred over the way resources are used [17].

- *Natural and climatic conditions, geoeconomics* - It determines the predominant sphere of economic activity (agriculture, the extraction of biological resources, crafts) and their economic orientation (commodity, natural, auxiliary) [18]. TEA is forced to focus on the market in order to improve living standards. Available resources of the traditional economy determine the size of the economy of farms (large, medium, small). The finite resources of the traditional economy do not limit the extent of their use. The consumer attitude to nature is due to an increase in consumption within households (abandonment of material and household minimalism), a departure from traditional technologies, and an increase in the number of farms conducting TEA. The overuse of natural resources triggers the mechanisms of self-regulation (cases, diseases) [19]. The attitude to natural resources is formed, among other things, by their alienation from the IMPN conducting TEA since the use of resources (pastures, reservoirs) is usually carried out without any rights to them [20] - the determinant of legislation. The use of territories for industrial and infrastructural development stimulates the indigenous minority peoples of the North' consumer behavior. The resources of the subsoil are perceived as “their own” belonging to the indigenous people. A request is expressed not only for preserving the environment, reducing production and supporting families leading a traditional lifestyle, but also for a more equitable redistribution of income from the extraction of natural resources. IMPN, not conducting TEA, lose touch with nature, then assimilate and leave their traditional places of habitation.

- *Geopolitical conditions* - They determine the possibilities of farms in the forms of income generation and use. Political and economic periods impose features on the types and forms of management, but generally leave the core of the TEA ecosystem untouched. Market relations provide more opportunities for conducting TEA, as well as the ability to move to other activities and return to TEA. Various types of economic behavior are available by the way resources are formed and their use. Opened social lifts, the use of which is limited to ideological and educational determinants. Globalization processes provide the best conditions for trading in TEA products. The possibility of export sales is realized, to the detriment of own consumption. The development of antler reindeer husbandry [18].

- *Ethnic and social features* - It determines the scope of employment and income. At the heart of TEA, a family, and a clan - a family-clan enterprises. Status forms economic behavior. Three groups of indigenous minority peoples are distinguished: 1) the population employed in traditional sectors of the economy preserving traditional settlement, lifestyle and culture;

2) the settlement of IMPN who abandoned traditional occupations, including those who maintain constant relations with relatives who are leading the traditional life style and a part of the population that is completely divorced from traditional conditions; 3) city representatives of IMPN, mainly assimilated. A separate group is the national intelligentsia emerging from the environment of indigenous peoples, which is present in both the rustic and urban areas. The intelligentsia is different because it actualizes the problems of national culture, problematizes one or another aspect of cohabitation of traditional culture and modern civilization, and distributes public finances [13]. Conducting TEA are self-employed. Girls, unlike young people, almost do not want to return to nomadic life [21]. The urban and rural population works in accessible sectors of the economy, mainly budget (education, medicine) and service. The national intelligentsia holds positions in the areas of governance. The urban youth are more assimilated into a multinational urban environment. However, they are aware of their nationality and are in solidarity with the tundra population and national intelligentsia on environmental issues and the preservation of traditional nature management. For the towns, the problems of the countryside are topical - the lack of jobs, control by the district government, and the underdeveloped sphere of leisure [13]. There is an increase in the share of the poor population, its subsidence in villages, and a tense social situation.

- *Legislation* - It determines the forms of relations including economic, of IMPN with the formal institutions of the state and society. The recognition of the rights of the indigenous peoples, carriers of ethno-economics, in many respects contributed to strengthening the role of ethno-economies in the regulation of geopolitical and geoeconomic processes. At the same time, the legislative regulation of natural-resource relations does not allow the indigenous peoples' representatives leading TEA to fully (traditionally) use the natural potential of the territories and force them to criminal behavior (for example poaching) [22]. The remoteness from the places of registration of administrative procedures does not allow them to be in the legal field in a number of areas of economic and economic activity. Depending on the self-sufficiency of the region, the social basis of farms is being formed. In economically self-sufficient regions, state paternalism is developed, which stimulates consumer behavior. The actions aimed at maintaining the nomadic population are perceived as not sufficient. The measures for state support of TEA focus on the stimulating of large organizational and legal forms and the hired-labor type of formation of resources (industrial model of using natural resources).

- *Technology* - It determines the main methods and spheres of production, as well as the means of production. The technological development of the Russian economy directly changes the economic behavior of the indigenous peoples. For example, the “snowmobile revolution” [23] in reindeer husbandry allowed family-tribal farms to increase the number of grazing herds. The availability of technical means for fishing made it possible for each farm to produce commercial fish, while fishing, like TEA, is impossible, and fishing permits are required. Information technology allowed to participate in any kind of economic behavior, integrate into new types of economic relations, and equalize the opportunities with urban residents. Researchers have noted a high level of the indigenous peoples' perception of the innovations in relation to traditional activities [13]. At the same time, global scientific and technological development, automation and digitalization of the economy and the public sphere is a serious challenge for the indigenous population of villages, a side effect of which will be a general reduction in low-skilled jobs.

- *Education* - The level of education (awareness) is crucial for the choice of economic behavior. The level of training that is received in boarding schools is usually insufficient to choose modern professions and enter higher education institutions, which determines a return to TEA or settling in villages [16, 24]. The villages, in turn, are not able to provide everyone with low-skilled work, which causes unemployment, deprivation, consumer and criminal types of economic behavior. Improving the quality and level of education in the boarding schools could be a key model for the positive transformation of the indigenous peoples' economic behavior in the context of globalization. At the same time, this is a rather non-trivial task for the educational system. The young generation that has been trained in boarding schools and vocational schools is choosing the hired-labor model of resource formation. The professions demanded in the village or a near town are selected. Significant are financial restrictions when continuing to study at professional educational institutions. After graduation the young people do not want to return to the tundra, however, they are not going to leave far from their parents.

Taking into account the proposed tools, the study of the characteristics of the indigenous peoples in the North' economic behavior can be carried out using the available arrays of information on religion, culture, everyday life, internal socio-economic organization, language, folklore, social and psychological characteristics of the indigenous peoples, developed by ethnographers, historians, archaeologists, sociologists, psychologists, philologists, economists and lawyers. At the same time, special studies are needed to establish quantitative indicators of the significance of these determinants in the economic behavior of indigenous peoples. Features of the economic behavior of IMPN in domestic literature are rarely considered. In this study of the peculiarities of the economic consciousness of the indigenous peoples' representatives [17], it was concluded that there are conflicting trends in the economic consciousness of this group, especially in relation to money, which may cause ineffective economic and psychological adaptation. One of the trends in the economic behavior of young indigenous peoples' representatives is a tendency to passive, safe, low-risk financial strategies. Appreciating savings as a guarantee of confidence in the future, they are more inclined to save money for the future, which is considered as a consequence of the factor of culture. Based on sociopsychological studies and the proposed determinants, the reasons for such indigenous peoples' behavior are detailed below. General factors affecting the saving behavior can be generalized into the following groups: personal characteristics; emotional condition; socio-demographic characteristics (gender, age, education, family life cycle) [25]. However, the most important external determinant of saving behavior is uncertainty. Uncertainty about financial prosperity in the future is a frightening prospect, which creates an intention to save [26]. The typical determinant of the indigenous minority peoples in the North' life is the climatic factor, weather variability, the struggle against harsh reality, which generate uncertainty, isolation, caution, endurance patience, and humility. Therefore, “Reindeer herder in the economic sense is a “bank card ”. Surplus in the herd is perceived as the insurance in emergency circumstances” [19]. When giving reindeer for slaughter, the reindeer herder withdraws money from the bank card as much as necessary, the rest remain as insurance against death. Today, for “farms owning within 1000 heads, pestilence will not significantly affect the family’s economic income system, but for owners of a reindeer herd of less than 250 heads, the death of the main herd of reindeer” can lead to a decrease in the standard of living of reindeer herder families and an increase in social dependence transfers [27]. Thus, the saving behavior of the tundra Nenets is due to difficult environmental conditions and the compelled insurance of risks. Although this behavior is sometimes mistakenly perceived as pathological hoarding. “It can be said that, unlike other deer-breeding peoples of Russia, the Nenets live in order to raise deer, and do not raise deer in order to live” [28].

The size of the reindeer herds on private herders is determined by the needs of reindeer herders, not only traditional but also characteristic of modern society. To meet growing needs, livestock is growing. At the same time, livestock growth is limited by the lack (degradation) of pastures, as well as increased competition for them, which further enhances uncertainty, forming a vicious circle of risks [18, 20]. These restrictions are a latent condition for criminal behavior. The economic approach assumes that criminal offenses, such as thefts or robberies, are committed mainly by less affluent people, not because of anomalies or alienation, but because of a lack of general education and training (information), which reduces their "profit" from legal activities [1]. Forensic studies [29] of the indigenous peples in the North' criminal behavior show that the socio-psychological characteristics associated with the national mentality and the conditions of the traditional lifestyle are the main determinant of criminal behavior. The next most important determinant is the state paternalistic policy aimed at "the active involvement of the indigenous peoples in public life, accompanied by migration from the national settlements to cities and towns with different population structures, not connected by ties of kinship or religious unity; reprofiling these individuals from traditional nomadic ways of doing business in other areas of employment; active support from the state, which gives the rise to the social dependency among these IMPN; narrowing the sphere of social contacts to intra-family ones, which does not take into account all the socio-psychological characteristics of IMPN. The determinant of criminal indigenous behavior in the field of ecology is the legislative activity of the state, which prohibits the free exercise of certain types of traditional economic activity. Thus, the determinants formulated in the framework of this study allow us to interpret the peculiarities of the formation and transformation of the indigenous minority peoples in the North' economic behavior, and in the future they can be used to design models of economic behavior and mechanisms providing a positive vector, taking into account the specifics of the indigenous minority peoples in the North' existence in the global information space, and "consumer society". In addition, through the prism of the types and determinants of economic behavior, it seems possible to model and predict the behavior of indigenous peoples in various life situations (Table 3).

Life Situations	Types of Economic Behavior	Determinants of Economic Behavior
1. Graduation - the choice of professional activity	**By the method of forming resources:** Hired labor; Entrepreneurial (self-employment); Rental; Dependent (consumer); Crime (gaming). **By the way resources are used:** Rational (balance model); Investment; Savings; Irrational; Demonstrative. **In relation to resource rights:** Possession; Use; Disposal.	1. Worldview capital; 2. Natural and climatic conditions, geoeconomics; 3. Geopolitical conditions; 4. Ethnic and social features; 5. Legislation; 6. Technology; 7. Education.
2. Loss of work (business), deer herd		
3. The deterioration (improvement) of the socio-economic situation in the country, region, industry		
4. Non-demand in the market for products of the traditional industries		
5. Lack of deer pastures with the growth of the indigenous population engaged in reindeer husbandry		
6. Improving the quality of education in the boarding schools		

Table 3: Examples of life situations to model economic behavior

An illustration of the use of types and determinants in modeling the indigenous economic behavior of IMPN is proposed by the example of the situation "Graduation - the choice of professional activity". The following possible scenarios for choosing economic behavior are identified. Let us suppose that a young person has graduated from his/her high school, a boarding school or a vocational school, he/she will have to choose his/her occupation or continue to study. If his/her determinant of education is strong, then it is likely that he/she will continue to study at a higher educational institution; since there is no personal income the dependent behavior occurs if there is a source of funding. If the determinant of education is weak or there are no sources of funding, then, in accordance with the determinant of the ethnosocial characteristics, a positive choice will occur between hired-labor and entrepreneurial behaviors, while a negative choice is to continue the dependent way of forming resources without training or to be criminal. At the same time, the determinant of legislation can affect behavior in different ways. The hired-labor type of formation of resources will be closer to the people from the countryside and the urban environment. Natives of family-clan households conducting traditional life stile have the opportunity to return to their families and engage in traditional economic activities - self-employment, with the possibility of further legalization (entrepreneurship), this choice also depends on the law. The background for the choice of behavior in all cases is the determinant of a person's worldview capital, since the attitude to preserving the traditional way of life and culture of ancestors remains strong. At the same time, among girls, the choice in favor of traditional life style will be less. The geoeconomic determinant (industrial and infrastructural development, climate) limits the choice in favor of TEA and self-employment. The determinant of technology gives hope for the emergence of new types of employment, increasing productivity in traditional industries. In general, trends in all determinants contribute to the accumulation of young generations in villages. The behavior of the use of resources will depend on financial capabilities and individual characteristics. Lack of resources leads to rational behavior; when surpluses arise, a savings strategy arises. The investment behavior requires certain knowledge and skills, psychological propensity. Irrational and exponential behavior is associated with personality traits or can be aimed at maintaining social status, in accordance with the ethnosocial determinant. the Irrational behavior is explained by the high costs (monetary, psychological, etc.) necessary to obtain information that provides the rational behavior. Similarly, one can investigate both negative situations "Loss of work (business), reindeer herd" and positive "Improving the quality of education in the boarding schools". To use the method and determine the typical types of economic behavior, it is necessary to use the methods of sociology and psychology to identify the relationship of economic attitudes and life values among IMPN with reference to location, nationality, and age [30]. It is also necessary to determine the stability and mobility of certain attitudes (preferences) to use the model for prognostic purposes.

5. CONCLUSION

1) As a result of studying the theoretical and empirical data, systematizing the types of economic behavior, formalizing and theoretically substantiating the main determinants of the economic behavior of the indigenous peoples of the Russian Arctic, using the available information on their religion, culture, everyday life, internal socio-economic organization, language, folklore, the features of the economic behavior of IMPN has been formulated.
2) Based on sociopsychological studies and the proposed determinants, the reasons for the indigenous minority peoples of the North' saving behavior, which is caused by difficult natural conditions and the compelled risk insurance, are developed. It is indicated that the strengthening of negative trends in determinants of geoeconomics, legislation and education will contribute to the formation of criminal behavior among representatives of indigenous peoples.

3) Through the prism of the types and determinants of economic behavior, as an example, the possible scenarios for the selection of economic behavior by representatives of the indigenous minorities of the North after graduation, associated with the choice of further professional activity, are identified.
4) The determinants formulated within the franework of this study allow to interpret the features of the formation and transformation of the economic behavior of IMPN, model and predict the behavior of the indigenous peoples in various life situations, and in the future they can be used in designing models of economic behavior and mechanisms that provide a positive vector.
5) This research can be continued in two directions: firstly, based on the available scientific material, to continue modeling the behavior of IMPN in critical life situations; secondly, to develop a program of the empirical research of the determinants and characteristics of the economic behavior of the indigenous minority peoples of the Russian Arctic to form the databases on individual and typical types of behavior with the possibility of machine processing of the results.

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THE EFFICIENT STRUCTURE OF GDP IS THE FACTOR OF SUSTAINABLE DEVELOPMENT

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ABSTRACT

The mega goal of Azerbaijan is diversifying the economy. But how can we do it? Let us apply to physiology for answering this question: Is a champion athlete's body structure different from that of an ordinary person?. Yes. When athlete does exercise, his lungs grow,his muscles,bone system are stronger. Should an ordinary person improve his body structure to become a sport champion? Yes. So is the economy. The Group of Seven can be taken as champions as. As a result of the analysis, we found that the structures of their GDP are very similar. Maybe the key to the success of these economies is that the structures of their GDP are efficient? There are differences between Azerbaijan's and The Group of Seven's GDP structures. How can we eliminate the differences? I think that the base of any GDP is the fixed assets of that country. So it is important to make changes in the structure of fixed assets for making changes in the structure of GDP. For that, investment in areas where growth is desirable, should be increased. In order to promote this, the investment climate needs to be improved and the state regulatory instruments should be used effectively. The strategy of Sustainable Development of our country must be prepared and rapprochement of the structure of Azerbaijan's GDP to the structures of GDP of The Group of Seven must be included to this document as a goal as . When the efficiency of the structure of GDP increases, per capita GDP, the population's welfare level increase.

Keywords: *the structure of GDP, sustainable development*

"Thousands of directions move away from the goal and only one leads to it".
Michel de Montaigne.

1. INTRODUCTION

The mega goal of Azerbaijan is diversifying the economy, increasing the share of non-oil economy. But how we can do it? To answer this important question, I suggest that we apply to medicine, or rather its two sections: Anatomy and Physiology. Is a champion athlete's body structure different from that of an ordinary person? No, so both of them have the same body parts. But is their physiological structure different? Yes, it is different. Athlete's lungs are larger than normal, his muscles are stronger, and his bone system is much stronger. In the moment the question arises: Should an ordinary person improve his anatomical structure to become a sports champion? Yes.

2. THE EXAMPLE FROM THE ECONOMY OF THE GROUP OF SEVEN

I think that so is the economy. The Group of Seven can be taken as champion as. As a result of the analysis, we found that their GDP's structures are very similar. Even the figures on some items are incredibly close to each other. Maybe the key to the success of these economies is that their structures are efficient? The data in Table 1 make it clear.

Table following on the next page

Table 1: The Group of Seven's and Azerbaijan's GDP and GDP's structures by sectors

	GDP(2018 Billion, dollar)	Agriculture % of GDP	Industry % of GDP	Construction % of GDP	Trade % of GDP	Transport % of GDP	Services % of GDP
1.USA	20 580.2	0.81	14.8	4.1	14.4	10.4	55.5
2.Japon	4 971.3	1.1	22.9	5.6	16.7	10.2	43.5
3.Germany	3 949.5	0.85	25.4	5.1	11.6	9.0	48.0
4.France	2 778.9	1.8	13.4	5.6	13.3	9.8	56.0
5.United Kingdom	2 855.3	0.71	13.6	6.1	13.7	10.9	55.1
6.İtaly	2 084.9	2.2	19.6	4.2	15.9	9.2	48.8
7.Canada	1 712.6	2.0	17.8	7.9	12.6	7.6	52.1
Azerbaijan	46.9	5.7	48.0	8.6	12.9	8.5	16.2

Source: compiled by author based on these sources: (1).http://be5.biz/makroekonomika/profile/us.html,(2).http://be5.biz/makroekonomika/profile/jp.html,(3).http://be5.biz/makroekonomika/profile/de.html#t_structure,(4).http://be5.biz/makroekonomika/profile/fr.html#t_structure,(5).http://be5.biz/makroekonomika/profile/gb.html#t_structure,(6).http://be5.biz/makroekonomika/profile/it.html#t_structure(7).http://be5.biz/makroekonomika/profile/ca.html#t_structure(8.)http://be5.biz/makroekonomika/profile/az.html#t_structure

I would like to note that looking at the analogical indicators of countries The Group of Seven for 1970 year it is clear that their GDP's structures had differences before. (9) Convergence in these indicators has increasingly occurred. These countries are located in different climate zones, their natural resources are different and there is a difference between traditions and economic management systems. This proximity in the indicators gives us a reason to say that either these countries are managed from the same center/by recommendations of the same center or they enforce the management strictly observing each other in the competition. Education, health, finance, business management and support services, tourism, design, software, legal services, etc. belong to the spheres of increased services. Decreasing in industry share in these countries is due to tougher environmental requirements, as well as inventions, transfer of mass production to the 3rd world countries according to the "product life cycle" theory, keeping the "brain product" in the mother country(10). By the way, I would like to point out some useful information.

Table 2: When The USSR was on the verge of collapse in 1990,the structures of The USSR's and USA's economies

	GDP (billion, dollar)	Agriculture % of GDP	Industry % of GDP	Construction % of GDP	Trade % of GDP	Transport % of GDP	Services % of GDP
1.USA	5 963	1.5	21.6	4.2	15.1	8.9	48.7
2.The USSR	790.9	18.1	28.5	9.1	11.2	4.7	28.5

Source: compiled by author based on these sources: (11) http://be5.biz/makroekonomika/profile/us.html,(12)http://be5.biz/makroekonomika/profile/su.html#t_structure

Although the share of agriculture in the structure of USA's economy is small, in absolute expression this country is the world's largest exporter in this area, providing itself with agricultural products. The GDP of USA has grown rapidly due to the superior development of other sectors. The table data also provides insights into the economic roots of collapse of The USSR during a global conflict.

Let's make a conditional analysis based on the data in the table. It is about the capacity of the transport of the GDP. The construction's and services's capacity of transport is not as other areas as. Let's make such a comparison. The product of agriculture + the product of industry + trade = loads which must be transported definitely.

In USA 1.5 + 21.6 +15.1 = 38.2 8.9 transport carried it.

8.9/38.2 = 0.23 ratio

In The USSR 18.1 + 28.5 + 11.2 = 57.8 4.7 transport carried it

4.7/57.8 = 0.08 ratio

Here comes the conclusion that the economy of USA was be provided with the system of transport well. Let us also note that China is also following global trends. The following table shows this.

Table 3: The structure of GDP of China for 1970 and 2018 years

	GDP	Agriculture % of GDP	Industry % of GDP	Construction % of GDP	Trade % of GDP	Transport % of GDP	Services% of GDP
1.1970	92.6	35.1	36.7	3.7	8.3	4.4	11.8
2.2018	13608.2	7.5	33.9	6.9	11.1	4.5	36.1

Source: compiled by author based on these sources:(13) http://be5.biz/makroekonomika/profile/cn.html

The economy of China which ranked second in the world today has grown by 146.9 times over the past 48 years. So it has earned the name of miracle. The representatives of the Jewish people have an interesting feature. When a Jew arrives in a new city, he learns what the Jews living here are doing. He is also doing the work . In his opinion, his compatriots have already done marketing research and found the most effective way. To repeat this way will be lucky for him.

3. APPLICATION TO AZERBAIJAN

Let's apply this approach to our country. So let's bring the structure of our economy closer to the structures of economies of countries of The Group of Seven: USA, Japan, Germany, France, United Kingdom, Italy, Canada. There are differences between the structure of the GDP of Azerbaijan and the structures of the GDP of The Group of Seven. How do we bring closer this? I would also like to point out that it is important to pay attention to the internal structure of the areas in the table. It is useful direction to processing from production in the structure of industry. We report this on the basis of the generalization of global trends in developing countries. One quote by the well-known Russian scientist, professor G.Kh. Popov, supports this view: Which product 's 1 kg brings more profit: 1 kg of fat 30 $, 1 kg of equipment $ 20, 1 kg of aviation equipment $ 1000, 1 kg of information technology $ 5,000?" I think that the base of any GDP is the national wealth of that country. (Note: I detailed the National wealth at the conference organized by ESD organization in Baku in 2019) (14) It is necessary for improvement to make changes in the 2 elements of the national wealth: the wealth created by man and the structure of human wealth. That is, it is important to do it for making changes in the structure of GDP. For this purpose, investment in areas where growth is desirable, should be increased. It must be invested to both wealth created by human:fixed and turnover funds and human wealth: education, professional development, health, happiness, improvement of space, etc. directions.

Table 4: Share of investments in Azerbaijan and The Group of Seven GDP for 2018 year

	Share of investments in GDP(% of GDP)
1.USA	20.7
2.Japan	24.2
3.Germany	21.1
4.France	22.9
5.United Kingdom	17.1
6.Italy	17.9
7.Canada	22.5
Azerbaijan	20.6

Source: compiled by author base on these sources: (1).http://be5.biz/makroekonomika/profile/us.html,(2).http://be5.biz/makroekonomika/profile/jp.html,(3).http://be5.biz/makroekonomika/profile/de.html#t_structure,(4).http://be5.biz/makroekonomika/profile/fr.html#t_structure,(5).http://be5.biz/makroekonomika/profile/gb.html#t_structure,(6).http://be5.biz/makroekonomika/profile/it.html#t_structure(7).http://be5.biz/makroekonomika/profile/ca.html#t_structure(8.)http://be5.biz/makroekonomika/profile/az.html#t_structure)

As can be seen from the table by the ratio of investments to GDP Azerbaijan keeps pace with the countries of The Group of Seven.But these investments should be encouraged to focus on areas where they are needed. Should these changes be made by the state or the private sector? The state creates a normative base and organizes infrastructure. The private sector invests in areas with a higher rate of return. As long as there is a lot of money left to the private sector, it will do so soon. In order to promote this, the investment climate needs to be improved, and the effectiveness of state regulatory instruments should be increased. As a result, the structure of investment will also improve. The strategy of Sustainable Development of our country must be prepared and rapprochement of the structure of Azerbaijan's GDP to the structures of GDP of The Group of Seven must be included to this document as a goal as. Conformity of regulatory acts and systemic decisions with this principle should be examined.

4. CONCLUSION

We think that when the efficiency of the structure of GDP increases, per capita GDP, the population's welfare level increase. For example, in Japan the structural efficiency of the economy has increased and GDP per capita increased 19.3 times between 1970 and 2018, from $ 20,37.56 to $ 39,290.(15) Thus, we come to a conclusion that welfare will increase if the directions of the development of the national economy coincides with the regularities of the development of the world economy. A lot of work is being done to increase the efficiency of the economy of Azerbaijan. But if the process goes the way which I say it will be more useful. As the French said as: the key is not running, the key is starting to run quickly. This does not mean that we should try to change the structure of GDP in a hurry. It is not to keep alive stress effect to the economy. We can improve the structure by striving for superior development of the desirable areas. Of course, this process must be implemented in stages, taking into account economic security factors, and setting the right intermediate goals.
This approach will be useful for other developing countries too.

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WATER SUPPLY AND IRRIGATION IN THE COMPETITIVE AND SUSTAINABLE DEVELOPMENT OF THE AGRARIAN SECTOR IN AZERBAIJAN

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ABSTRACT

Recently principles of sustainable green economy are considered as the basis of the competitive economic development. One of the main non-oil directions in the economy of Azerbaijan is agricultural sector. In this regard its development and research set as priority task by government. Lack of water resources in Azerbaijan push the government to take a measure for sustainable management of water. In this paper we analyze the water demand for agriculture (irrigation) use. In our research we used the local and regional data, we made a field visit and did consultations with specialists to complete and verify these data. The method of the research is based on a technical-legal analysis of the statistical data on water sector in Azerbaijan, which is drawn up by the Water Resources Agency (WRA) of the Ministry of Emergency Situations (MES), Azerbaijan Ministry of Economy and other regulatory authorities such as amelioration and irrigation institutions. Further the irrigation and water demand figures analyzed in detail.

Keywords: *Azerbaijan, competitive economy, sustainable development, water management, agrarian sector, water supply, regional development, irrigation*

1. INTRODUCTION

Over the past few decades, environmental concerns have received growing attention. Nowadays, climate change, pollution control, over-exploitation of fisheries, preservation of biodiversity and water resource management constitute important public preoccupations at the local, state and even world scales. Crises, degradation and risks affecting human health or the environment, along with the permanency of poverty, have fostered public suspicion of the evolution of technology and economic growth while encouraging doubts about the ability of public policies to handle such problems in time. The sustainable development concept and the precautionary principle both came on the scene in this context. In this regard agricultural sector become perspective sector of economy to provide food and health security. Agriculture is one of the most important sectors of the economy in Azerbaijan, a country that is considered to be one of the earliest sites of human agricultural activity [1]. Today, the agricultural sector employs over 37% of the active labour force of the country.

The fertile lands, abundance of water and climatic diversity create favourable conditions for a strong agricultural sector. The existence of nine climatic zones allows the country to produce a variety of agricultural products, and provides new opportunities for the introduction of new kinds of goods. Being one of the leading producers of agricultural goods in the CIS, Azerbaijan seeks to further develop its agriculture and food industry for import substitution as well as for export. Azerbaijan has 4.8 million hectares of agricultural land, which comprises over 50% of its total territory, of which 39.6% is arable. [6] Crop production accounts for around 46.9% of agricultural production with livestock farming making up the remaining 53.1% [13]. Meanwhile, the food-processing sector constitutes an important component of the national economy and accounts for over 38% of total manufacturing industry. Furthermore, Azerbaijan trades intensively in agricultural and food products. [6] Traditionally the main destination and the largest consumer of agricultural and food exports has been the CIS market, but in recent years this market has expanded to include many other countries in Europe, Asia and the Americas. The main export products are fresh vegetables and fruits, vegetable and animal oils, sugar products, tea, processed vegetables and fruits, beverages, tobacco products, cotton and others [13]. The years of fast economic growth in the national economy have led to a rapid growth in consumption and changes in consumer tastes in the food and beverages sector. Consumption of agricultural goods and food products in many categories has grown by more than 50% in the last ten years. In some selective categories this figure is around 200% [6]. Domestic production of the main food products has, however, fallen short of meeting market demand. In order to decrease the dependence of the domestic food market on imported products and to create reliable food reserves, the country has taken a number of measures to improve the business and investment climate in this sector by incentivising producers, providing subsidies, and creating a firm institutional and economic basis for further development. To this purpose, the "State Program on the Reliable Supply of Food Products to the Population for 2008-2015" was drafted and signed into law in 2007. The main objective of the program is the qualitative and quantitative increase in production of agricultural and food products to ensure the country's food security. Possessing great potential for development, the widest range of investment incentives and high economic profitability, the agriculture and food processing sector remains one of the most attractive for investment in the economy of Azerbaijan.

2. METHOD

The method of the research is based on a technical-legal analysis of the statistical data on agricultural sector in Azerbaijan, which is drawn up by the Ministry of Agriculture, Azerbaijan Ministry of Economy, Water Resources Agency (WRA) and other regulatory authorities such as amelioration and irrigation institutions. Further the irrigation and water demand figures analysed in detail.

3. DEVELOPMENT OF AGRICULTURAL SECTOR IN AZERBAIJAN

In recent years, along with the development of the non-oil sector, which is one of the key sectors of the economy, the dynamic and sustainable development of agriculture has been provided and it plays an important role in increasing employment. Significant steps have been taken towards the efficient use of arable land and available water resources, thousands of hectares of land have been involved in crop rotation, and as a result, sustainable growth trends in agricultural production have been formed. Important measures have been taken to improve irrigation water for irrigated areas and the commissioning of new irrigated lands in order to achieve a significant increase in the production of cotton, grain and other agricultural crops and livestock products in the country. Water reservoirs, pumping stations, main canals and other water economy facilities were built and put into operation. During 2018, at least 300 subarthenian wells have been drilled and 100,000 hectares of non-irrigated land have been supplied.

The construction of rural roads is now also widespread. In 2017, 42 local roads (863.2 km) were reconstructed in the regions as part of the "40 Road Projects" [15]. Approval of "Main Directions of Strategic Roadmap for National Economy and Key Sectors of the Economy" came into force by the Decree of the President of the Republic of Azerbaijan dated March 16, 2016 No. 1897. Subsequently, the Strategic Roadmap for the Production and Processing of Agricultural Products in the Republic of Azerbaijan was developed [13]. This Strategic Roadmap provides a strategic overview of the country's agricultural development until 2020, a long-term vision for the period until 2025, and a target view for the period after 2025. This means that the state has a clear roadmap to be implemented in successive stages to achieve strategic development goals in the medium and long-term. At present, there is extensive support from the government for the development of agriculture [15]. State support measures for the general area:

- Agriculture is exempt from taxes
- Producers are given preferential loans from the budget
- Most imported means of agricultural production and processing industry apply customs privileges
- 40% of the value of agricultural machinery, machinery and equipment sold by Aqrolizing OJSC is paid from the budget and sold through leasing;
- 50% of the accrued insurance premium on insurance of agricultural property and certain insurance events is paid by the state.

State support measures in the field of plant growing:

- 50 manat[1] subsidies for each hectare of arable land (including re-cultivation) to ensure that the state pays 50 percent of the cost of fuel and motor oils for agricultural production.
- manat for each kilogram of cotton sold, 0.1 manat for every kilogram of dry tobacco and 0.05 manat for every 10 kg of fresh tobacco.

Persons engaged in cocoon production receive 5 (five) manat subsidies per kilogram of all types of cocoon (except crooked and carapace cocoons) accepted by silk mills. The legal entities engaged in the processing of sugar beet and the individuals engaged in entrepreneurial activity without the establishment of a legal entity, shall be paid a subsidy of 4.0 (four) manats per each ton of sugar beet;

State support for agricultural producers:

- The cost of irrigation water for every 1000m^3 is 0.5 manats for agricultural producers.
- 40% of the cost of modern irrigation equipment sold by Aqroleasing OJSC is paid from the budget.
- Subsidies for seed production and sale.
- Measures to combat quarantineable and specially dangerous pests of agricultural plants are funded from the state budget.

4. SUSTAINABLE MANAGEMENT OF TRANSBOUNDARY WATER AND COLLABORATION OF BASIN COUNTRIES TO PREVENT TRANSBOUNDARY DEGRADATION

The basin of the Kura and Aras Rivers is the largest basin in the country (excluding the occupied zone and the zone declared neutral in May 1994)[2]. The Kura River rises in the Kars upland in

[1] Central Bank of the Republic of Azerbaijan, 1 Euro = 1,91 AZN (2020) http://en.cbar.az/pages/national-currency/banknotes/azn/

[2] https://www.un.org/press/en/2008/ga10693.doc.htm

northeast Turkey. It then flows into Georgia and crosses the border to Azerbaijan in the northwest. The total length of the Kura River system is 1 515 km, of which 900 km is located within Azerbaijan. The total annual inflow from Georgia is estimated at 11.91 km^3. The Aras River also rises in the northeast of Turkey. It forms the border between Turkey and Armenia, Turkey and Azerbaijan, the Islamic Republic of Iran and Azerbaijan, the Islamic Republic of Iran and Armenia, and the Islamic Republic of Iran and Azerbaijan again, before flowing into the eastern part of Azerbaijan. About 100 km downstream of the border it joins the Kura River, which continues to flow southeast towards the Caspian Sea. The total inflow of the main branch of the Aras River and its tributaries from Armenia and Iran is estimated at 13.47 km3/year, bringing the total inflow into Azerbaijan to an estimated 25.38 km3/year [10]. It is estimated that internal renewable water resources amount to about 8.12 km3/year. Annual surface runoff is estimated at 5.96 km3 and groundwater recharge at 6.51 km3, of which 4.35 km3 constitutes the base flow of the rivers. The estimated incoming surface flow is 25.38 km3/year, of which 11.91 km3 from Georgia, 7.50 km3 from the Islamic Republic of Iran and 5.97 km3 from Armenia. The Sumar River, with a total flow of 2.36 km3/year, forms the border between Azerbaijan and the Russian Federation. The total renewable surface water resources (RSWR), including incoming and bordering flows, are therefore estimated at 32.52 km3/year. In the case of the Kura and Aras Rivers, which flow through Turkey, Georgia, Armenia, the Islamic Republic of Iran and Azerbaijan, discussions are under way on a water sharing agreement [1]. From 2000 to 2002, USAID, in collaboration with Development Alternatives Inc. (DAI), implemented the South Caucasus Water Management project. Its aim was to strengthen co-operation among water agencies at local, national and regional levels and demonstrate integrated water resources management. In parallel, between 2000 and 2006, the EU and the Technical Assistance Commonwealth of Independent States (TACIS) carried out the Joint River Management Programme on Monitoring and Assessment of Water Quality on Transboundary Rivers for the prevention, control and reduction of the impact of trans-boundary pollution. The programme covered four basins, including the Kura River Basin. In addition, regional organisations such as REC, Eurasia Foundation, and numerous local foundations have promoted national and regional activities concerning water resources management and protection [17]. Between 2002 and 2007, OSCE realized the South Caucasus River Monitoring Project. Its general objectives were to establish the social and technical infrastructure for a joint international Transboundary River water quality and quantity monitoring, data sharing and watershed management system among the Republics of Azerbaijan, Georgia and Armenia. Project Reducing Transboundary Degradation in the Kura-Aras River Basin, implemented by the UNDP Bratislava Regional Centre in collaboration with the Global Environmental Facility (GEF), has involved four of the basin countries: Azerbaijan, Georgia, Islamic Republic of Iran and Armenia. Efforts are being made to involve Turkey in the project as well. The preparation phase, which is co-funded by Sweden, began in July 2005 and will last 18 months. The objective of the project is to ensure that the quality and quantity of the water throughout the Kura-Aras River system meets the short and long-term needs of the ecosystem and the communities that rely upon it. It will be achieved by fostering regional cooperation, increasing the capacity to address water quality and quantity problems, demonstrating water quality/quantity improvements, initiating required policy and legal reforms, identifying and preparing priority investments, and developing sustainable management and financial arrangements. Currently there are no water treaties between the three south Caucasian countries owing to the political situation in the region. Aggressive and occupation policy of Armenia against Azerbaijan in Nagorno-Karabakh is one of the main obstacles, making it difficult for Azerbaijan and Armenia to sign a treaty even one only relating to water resources management [1]. Thus water management in Azerbaijan can be done when taking the upstream water related activities and development plans into account.

Ideally, international river basin councils should be established to serve as platform where riparian countries can coordinate issues like integrated river basin management, conflict resolution, etc. This is presently nonexistent. To assess the urban, industrial and the agricultural water demand for the KuraAras River basin located within Azerbaijan many activities have been undertaken. Official data have been collected assessed and have been used as a starting point for the water demand assessment. [10]. All of these measures also serve to improve the management of relevant institutions. The aim of the water resources management analysis is to describe water availability and demand under a large variation of hydro-meteorological circumstances. Therefore, the hydro-meteorological time series should be as long as possible.

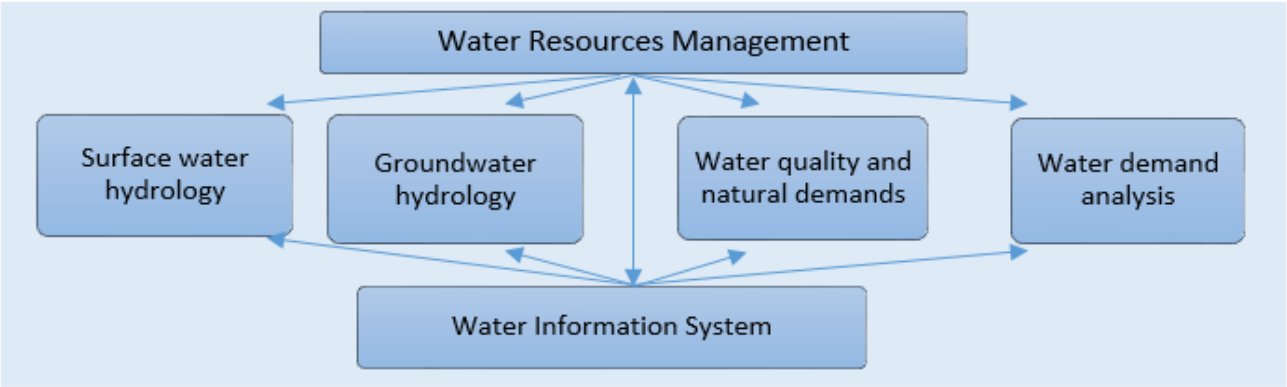

Figure 1: Schematic presentation of the water resources management interactions

The above description of the water resources of Azerbaijan presents the picture of a country that has currently sufficient water resources in average years, but where water resources are under stress due to the following issues: [9]

- Contamination of surface water and especially the Kura and Aras rivers
- Contamination of groundwater
- Water shortage in drier years
- Declining trend in surface water availability
- Relatively high dependency on transboundary water resources, especially from the Kura and Aras rivers
- Potential impact of climate change that might further decrease water availability

The following description of the water resources of Azerbaijan is based on the Updated Transboundary Diagnostic Analysis of the Kura-Aras river basin (TDA) as prepared by the UNDP/GEF project "Transboundary degradation in the Kura-Aras river basin" [10] unless stated otherwise. Azerbaijan has widely varying conditions regarding its water resources due to its topographic heterogeneity. The mountainous areas in the north form part of the Greater Caucasus and receive up to 1800 mm of precipitation per year. The Lesser Caucasus and the Talysh Mountains in the south also receive ample precipitation. The low area in between is much drier with a low of 150 to 200 mm on the Absheron peninsula. Two thirds of the country receives less than 400 mm of rainfall per year, which is not enough to support rainfed agriculture other than extensive livestock herding. In these areas growing of agricultural crops is only possible under irrigation. Groundwater aquifers in the mountains are mainly fresh, while aquifers in the central lower area experience a higher mineral content due to the presence of fossil marine groundwater and the precipitation deficit. The average annual volume of potentially usable fresh and lowmineralized groundwater is estimated to be around 2 billion m^3 [4] or almost 9 billion m^3 [3]. Over two thirds of the territory of the Republic of Azerbaijan is located in the river basin of the Kura and the Aras (Figure 2).

The Kura originates in north-eastern Turkey and flows east through Georgia to Azerbaijan. It drains the southern slopes of the Greater Caucasus and the northern slopes of the Lesser Caucasus. The Aras is the main tributary of the Kura. It originates in eastern Turkey somewhat to the south of the Kura and forms the border between Armenia and Turkey, between the Nakhchivan exclave of Azerbaijan and Turkey, between Nakhchivan and Iran, between Armenia and Iran and between Azerbaijan and Iran. The Aras flows into the Kura at Sabirabad in Azerbaijan. [10]

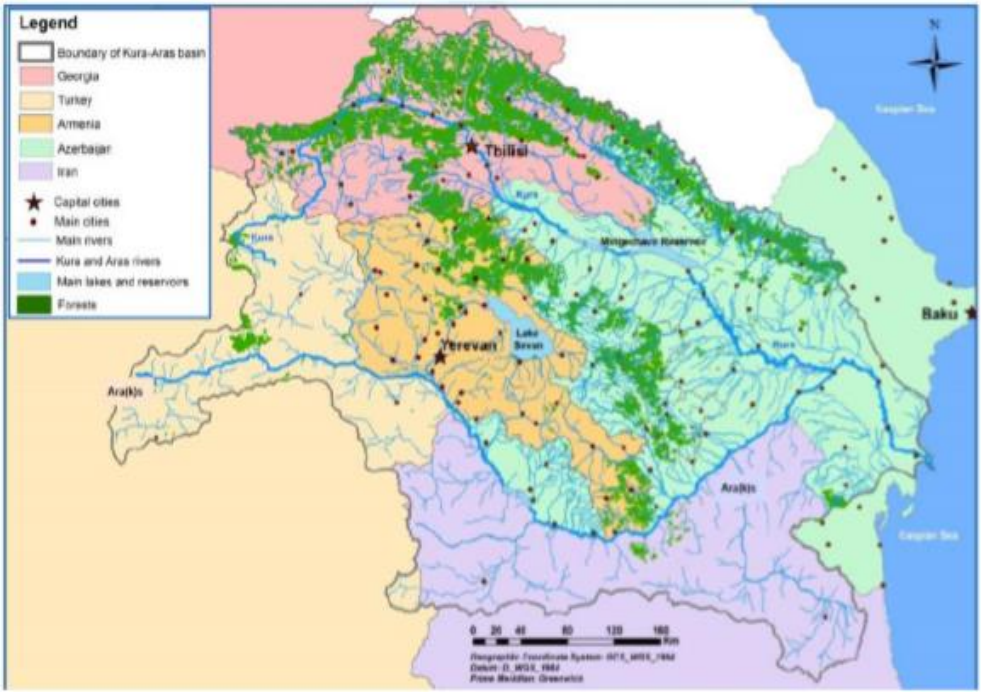

Figure 2: Azerbaijan in the Kura-Aras river basin [6; 8]

In the Kura-Aras basin many rivers are fed by snow and glacial melt during late spring and early summer. The annual flow of the Kura into Azerbaijan is estimated as some 12 billion m3 and for the Aras and its tributaries as 13 billion m3. Total annual runoff within Azerbaijan is estimated at 6 billion m^3 [5]. The TDA points to a notable decrease in the average annual flow of both the Kura and the Aras as expressed by a declining five-year running average. Due to lack of reliable data it is not clear whether this is caused by increased withdrawal or climate change or a combination of both [2]. The total reservoir capacity within Azerbaijan is around 21 billion m3. The two largest reservoirs are Mingacevir (15 billion m3) and Shamkir (2.7 billion m3) located on the Kura just downstream of the border with Georgia [5]. Two main irrigation canals are fed by the Mingacevir Reservoir: the Upper-Karabach Canal flowing southeast and the Sirvan Canal flowing east. Drainage water from irrigation is collected in a number of large. Total water withdrawal of water resources is estimated at 12 billion m3 annually divided over agriculture (77%), industry (19%) and public water supply (4%). 6% of withdrawal is estimated to come from groundwater, 1% is re-used from treated waste water and the remainder is withdrawn from surface water. Per capita water withdrawal is estimated at 1500 m^3 per year. [5]. The rivers Kura and Aras are considered heavily contaminated by untreated waste water discharges from industrial and domestic sources and return flow of polluted irrigation water. The pollution sources are located both in the upstream part of the river basin in Armenia and Georgia and in Azerbaijan itself. The Kura and Aras rivers form the most significant recharge sources of groundwater and thereby threaten the quality of the groundwater [3].

Flooding is pervasive throughout the Kura Aras river basin as exemplified by the extensive 2010 floods in Azerbaijan. Although this project does not focus on flooding, there is a link through the operation of water management infrastructure, such as the main reservoirs on the Kura River. It appears that the reservoirs have been operated prior to the 2010 floods on a high level to maximize the hydropower generation. Since 2010 they are operated at a relatively low level to maximize flood storage and prevent flooding downstream of the reservoirs. This, however, decreases the water available in dry summers in the Kura and the irrigation canals downstream of the reservoirs. Expected impacts of climate change are listed in the TDA as a decrease in precipitation and increases in temperature, glacial melting, evapotranspiration and frequency of severe weather events [12] mentions furthermore an increase in winter precipitation and a decrease in summer precipitation [8].

5. WATER SUPPLY AND IRRIGATION IMPACT ON AGRICULTURE

The Amelioration and Irrigation Open Joint Stock Company (Amelioration) in Azerbaijan was established in 2006 from the State Amelioration and Irrigation Committee and was given the roles of providing bulk water supplies to irrigation systems and overseeing the development and management of irrigation and drainage systems throughout the country. Amelioration is a large agency with about 21,000 employees around the country. [20] One of the main responsibilities of district irrigation departments is to plan and implement bulk water supplies to Water Users Associations (WUAs) at on-farm level. The main departments of Amelioration are on below table 1.

Operational department of water reservoirs, hydro-systems and main channels, responsible for the operation and maintenance of the water reservoirs and main irrigation channels.
Collector offices (CO): responsible for the operation and maintenance of collector drains.
Irrigation systems office (ISO): responsible for the operation and maintenance of the irrigation systems.
Mechanical system office (MSO): these offices are also responsible for the operation and maintenance of the irrigation systems.
Sub artesian wells operation offices (SWOO): responsible for the operation and maintenance of (sub) artesian wells.
Forest Amelioration office: responsible for the forest area.

Table 1: Main departments of Amelioration and its responsibilities [20; 18]

ISOs/MSOs are located in most of the districts having irrigated lands. Some ISOs are responsible for more than one district. These offices are responsible for providing sufficient water to the farmers to be able to satisfy the water demand of the crops. This includes the operation and maintenance of the structures and pumps in the irrigated area as well as the operation and maintenance of the canals. The main collectors are operated and maintained by six collector offices, each being responsible for the operation and maintenance of one or two of the main collectors. Water User Associations (WUAs) are responsible for the actual agricultural practices. Each district has several WUAs, which are mainly organised along distribution major canals. [7; 8] Over 500 WUAs have been established in Azerbaijan. Each WUA prepares its cropping plans for the next agricultural year around November / December, specifying which crops will be grown and what will be the planted area for each of these crops within the WUA. The cropping plans of the WUAs situated along the same distribution canal (i.e. using the same water source) are accumulated by the responsible ISOs / MSOs, and the actual monthly gross water demand at the intake point is calculated (using the net water demand for each crop, multiplied by the cropped area, the application efficiency coefficient and a distribution efficiency coefficient) [7].

This methodology will be referred to as the Amelioration method. In many places irrigation water is also used for domestic use and therefore also (a part of) the domestic water demand has to be taken into account calculating the discharges at the various intake points. In this way the water demand is calculated at each of the intake points. Large distribution canals may run through more than one ISO, and the water demand for each of these ISOs at their respective intake points along the distribution canal will have to be combined to arrive at a water demand estimate at the location where the distribution canal takes its water from the source [7; 8].

Figure 3: Main rivers, canals and collector drains in Azerbaijan [8; 14]

Although data are available from the ISOs and MSOs for each district, these data have to be assessed and validated before the actual water demand for irrigated agriculture can be calculated. Data have been collected by visiting the offices of Amelioration in a number of selected districts, have discussions with the responsible officers and through field visits. The assessment of the data collected is done using open source data, through field studies and the application of Remote Sensing/GIS techniques for the command areas in selected districts. [7; 8; 20] The command areas have been selected based on agro-ecological areas to become representative command areas for similar command areas situated in the same agroecological zone: the cropping pattern for different command areas located within one agroecological zone will be very similar and therefore the crop water demands will be very similar. One district may have command areas situated in different agro-ecological zones comprises the identification of the agro-ecological zones. The following representative command areas have been selected to be visited during the study:

Agro-ecological zone 1	Sabirabad District, having an ISO and a MSO
Agro-ecological zone 2	Goychay District and Shabran District both having an ISO
Agro-ecological zone 3	Shamakhi District and Jalilabad District both having an ISO

Table 2: Agro-ecological zones [13]

Irrigation plans provided by the ISOs have been assessed by comparing these data with the calculations of the crop water demand and the irrigation water demand using CropWat (this software has been prepared by the Food and Agricultural Organisation of the United Nations and is widely used for the calculation of crop and irrigation water requirements. More information can be found on the website of the FAO). Differences between the Amelioration method and the CropWat calculations will be assessed. The first data collection / field mission to the five selected command areas took place from 2 May 2016 to 20 May 2016. Part of the water entering the irrigated area at the intake will be used by the planted crop, part of the water will evaporate, part of the water will be lost through deep percolation and part of the water will return to the main surface water system through the discharge channels. In addition to the intake points, discharge points have also been identified and the discharge from each of the intake points has been attributed to one of the discharge points. The monthly gross water demand will have to be determined at each of the intake points, whereas monthly discharges will have to be determined at each of the discharge points. Figure 4 provides an overview of the approach adopted for this study. The two major advantages adopting this approach are:

- The schematization is in line with the approach currently followed by Amelioration. The plans and measurements made by Amelioration therefore can be easily included in a database and this database in its turn can be linked to the RIBASIM[3] model.
- The RIBASIM model can apply the same level of detail, but can also aggregate data if required to reduce the complexity of the model.

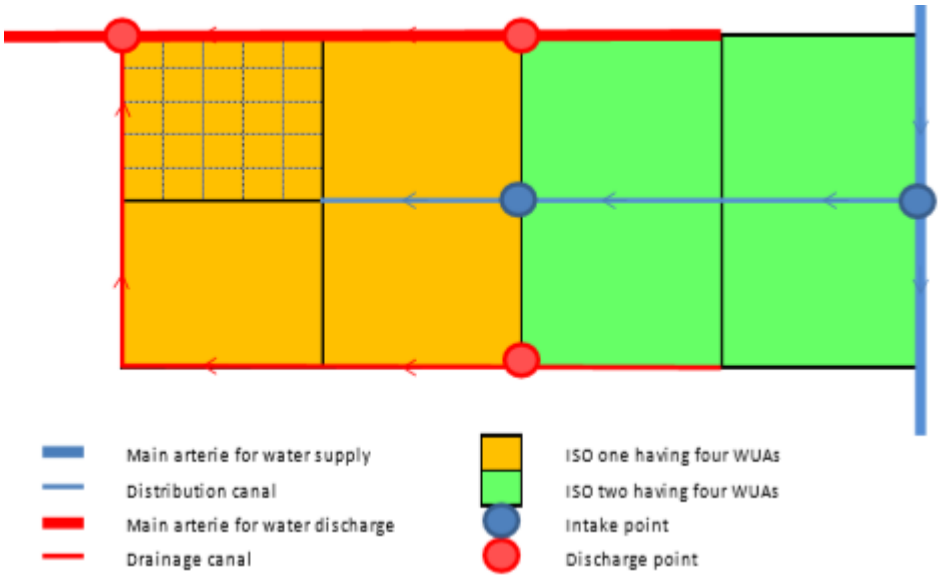

Figure 4: Schematic overview of intake points and discharge points for irrigated areas per ISO [8]

The assessment of official data collected in the representative command areas confirm that a standard method is used to determine the planned irrigation water demand (Amelioration method). It is likely that this method is applied in all ISO[4]'s and MSO[5]'s throughout Azerbaijan, but this is yet to be verified. Three documents which are available at ISO/MSO level will be obtained per district to determine the irrigation water demand at each intake point: 1. Irrigation

[3] River Basin Integrated Management
[4] Irrigation systems office
[5] Mechanical system office

norms used; 2. Planned irrigated area (ha) per crop per month per main water source (intake point); and 3. Efficiency coefficients used. Based on the findings of the first mission and with sufficient data a standard method will be developed for each agro-ecological zone to determine water demand at the intake points for each ISO/MSO. In this way the monthly irrigation water demand will be calculated, which can be used as input for the RIBASIM model [8].

6. CURRENT IRRIGATION WATER DEMAND ASSESSMENT

Each district office from Amelioration in Azerbaijan identifies the (main) sources from which irrigation water is abstracted. Often there is not one single intake point per source (e.g. multiple pumps abstracting water from one river, multiple intakes on a big canal). In such case the point where the water from the source enters the district is taken as intake point. For the districts visited during the field visits the location of these intake points from the sources is known. For all other districts an estimate of the location of the intake points is made based on areal images and open source data. This results in a total of 185 'intake points' as shown in Figure 5. an additional 12 intake points in Nakhchivan derived from areal images are also included in this figure. Intake points registered as 'sub-artesian wells' have not been included in this assessment.

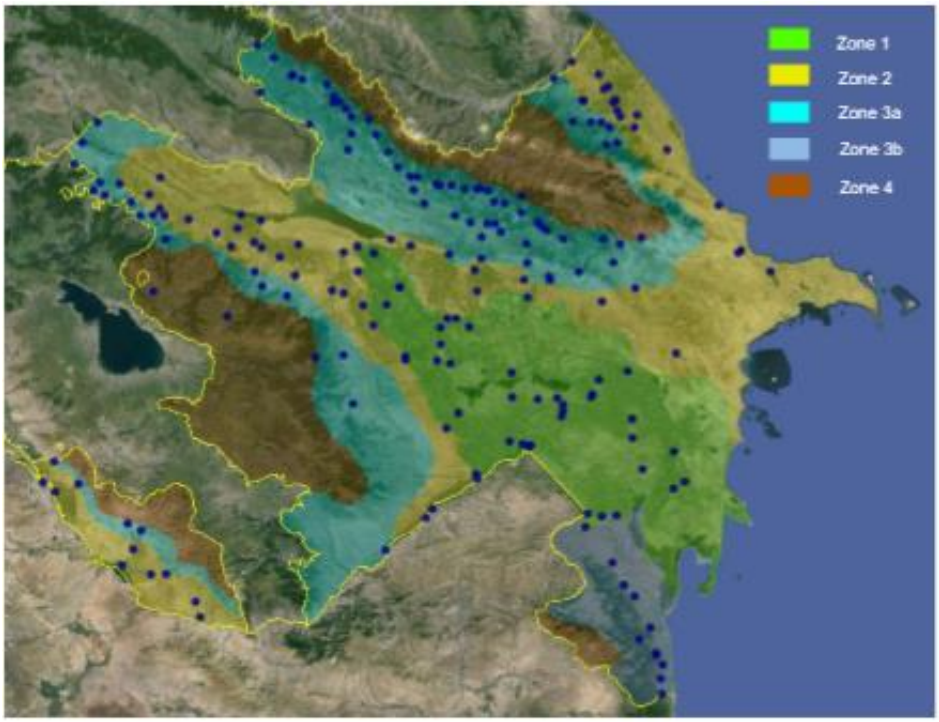

Figure 5: Intake points in Azerbaijan and agro-ecological zones [8, 14]

For each intake point a command area has been delineated by Amelioration (with the exception of the intake points in Nakhchivan). The accuracy of these data is to be assessed as part of this study. The command areas as specified by Amelioration will be used. The irrigation water demands have been calculated for the districts visited during the first field survey using the Amelioration method and by using CropWat. CropWat determines the actual water demand, whereas the official data from Amelioration do take water distribution (planning) into account, which spreads the demand more evenly over the months. For the time being the average of the water demand calculated with the Amelioration Method and the water demand calculated using CropWat has been applied to determine the monthly irrigation water demand. This approach will be fine-tuned when more information becomes available. Using this methodology the demand per ha per month is determined for each intake point and for each agro-ecological zone.

The field study identified large differences in agro-ecological zone 3 between the intake points located in the area around the Caucasus in the north of the country and the intake points located around the Talish mountains in the southeast of the country. For this reason this agro-ecological zone has been spilt in agro-ecological zone 3a representing the command areas located around the Caucasus and agro-ecological zone 3b representing the area around the Talish mountains.

Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.07	0.07	0.30	0.53	0.68	0.74	0.74	0.61	0.20	0.05	0.05	0.03
2	0.01	0.04	0.24	0.36	0.25	0.23	0.28	0.19	0.04	0.10	0.07	0.01
3a	0.03	0.03	0.03	0.06	0.23	0.22	0.21	0.10	0.01	0.00	0.00	0.00
3b	0.04	0.03	0.25	0.44	0.65	0.62	0.25	0.12	0.02	0.02	0.02	0.02

Table 3: Estimated irrigation water demand in the agro-ecological zones (l/s/ha) [18; 20]

Depending on the location of the intake points the demand figures from Table 3 are multiplied with extent of the command area serviced to derive an irrigation water demand. This gives a total monthly irrigation water demand in Azerbaijan as shown in Table 4.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
m^3/s	49.5	62.9	282.1	475.5	554.5	574.1	575.6	447.4	134.7	69.6	56.0	23.6
MCM	128.4	163.1	731.2	1232.6	1437.4	1488.0	1491.8	1159.8	349.2	180.4	145.0	61.1

Table 4: Total irrigation water demand in Azerbaijan [18; 20]

The total annual irrigation water demand in Azerbaijan is thus calculated to be 8,568 MCM, which is close to the FAO estimate of 9,330 MCM annually for irrigation and livestock. Actual livestock demands can be estimated based on data from the statistical office regarding heads of livestock9. Water consumption per head of livestock is taken from the FAO Livestock Guidebook in Tropical Countries (1960).

	Cattle	Sheep	Goats	Pigs	Poultry	Horses	Donkeys	Camels	Mules
Number in 2015 (x 1000)	2697.5	7987.3	658.1	6.1	28851.7	75.4	40	0.3	0.1
Annual demand (m^3/head)	7.88	0.73	0.84	1.2	0.039	8.1	3.07	8.98	3.07
Annual demand (Mm^3)	21.26	5.83	0.55	0.01	1.13	0.61	0.12	0.00	0.00

Table 5: Total livestock water demand in Azerbaijan [18; 20]

The total annual water demand for livestock consumption is thus approximately 29.5 MCM, which can be neglected as compared to the irrigation water demands. The estimate irrigation water demand per month per intake point is included in a separate excel file made available together with this report [18]. During the fieldtrip the main goal was to visit the rivers and hydrological stations of the Lesser Caucasus. Since large part of the Lesser Caucasus is located in neighbouring countries and occupied area, the locations which are open for visiting are limited. Nevertheless, the Lesser Caucasus rivers are important in the water balance of Azerbaijan. These rivers flow into Mingacevir, or directly into the Kura and Araz rivers. The rivers from the Lesser Caucasus also contribute to the irrigation of the agricultural lands between the mountains and the Kura River [14].

The duration of the fieldtrip was 3 days. During the fieldtrip the following stations and important locations were visited:

- The main gauging station at the Kura, Kura Kirkasaman station.
- Aghstafacay reservoir, river and canals.
- Semkir reservoir, river and canals.
- Koshkarcay – Saritapa station.
- Gancacay – Zurnabad station.
- Kurakcay – Chaykend station.
- Tertercay at Terter.
- Kura gauging station at Zerdab.
- Garusa gauging station at Zerdab.
- Kura-Surra gauging station at Sabirabad.
- Araz-Novruzlu gauging station at Sabirabad.

More use of various innovative service provision modalities is expected in the future and is an interesting lesson on mixed public-private provision of a public service. Another trend in Azerbaijan has been the consolidation of many small water service providers into larger aggregates. This enables the larger firms to take advantage of "economies of scale" and try to keep costs down. [1] The one dimension of Azerbaijan water resources development that is not as transferable to many other countries is the very large role of government subsidies at all levels. Construction costs are heavily subsidized by the national government (with an appropriate sliding scale of higher subsidies for agricultural uses, sewage treatment and waste water collection, and lower subsidies for domestic water supply and industrial water supply). The level of subsidies reflects both the ability and willingness-to-pay of the water users, as well as the public goods nature of certain services (such as wastewater treatment). [18]. However, in Azerbaijan there are also subsidies for management at the local utility level. These result in lower water prices to almost all users, and the subsidies both create continuing budgetary drains, but also do not encourage water conservation. The utilities lose some of the "edge" that comes from having to pay most of their operating costs, and consumers view water as a "cheaper' commodity than it really is. Since market prices do not send full information on the costs of supplying water, Azerbaijan has tried a number of different policy measures to encourage conservation and promote better efficiency of water use. These include both traditional command and control measures (especially important for pollution control problems) as well as various economic–based measures. [7; 9]. Azerbaijan has used both types of measures extensively, and, especially with the economic measures, has a system in place to generate revenues to help pay for water systems operation and management (although the large role of subsidies makes water relatively "cheaper" than it would otherwise be). The most interesting point is the clear use of legal measures to set broad policy guidelines, and the use of annual plans to then design the sustainable water resource management and their implementation. [8]

7. CONCLUSION

Conjunctive use of ground and surface waters (i.e., maximizing use of ground waters when river flows are low and resting them when river flows are high) can greatly increase yield from existing resources. New agricultural and industrial development increases not only demand for water resources, but also demand for wastewater disposal and surface water drainage. Irrigational must be matched by drainage to protect soil structure, and drainage without adequate collector systems degrades river quality by increasing salt content. A National Commission for regulation of Water resources should be set up and that water resources management responsibilities, financial resources, and facilities be transferred to it from the various bodies currently involved.

A National Water Resources Strategy should be developed within a National Water Sector Policy to articulate views on the nation's current and future economic, social, and environmental needs for water resources management. The strategy should be reviewed and rolled forward at regular (perhaps two-year) intervals. The impact of water management strategies will also be evaluated the strategy that focused on increasing water supply by increased water storage and optimal use of existing reservoirs in the Kura-Aras basin; A strategy focused on decreasing water demand by increasing efficiency of water use in irrigation and industrial and domestic use combined with a minimum environmental flow requirement for the downstream parts of the Kura and Aras Rivers. An overhaul and reorganization of information and monitoring systems, including field and laboratory measurement facilities, should be undertaken. Its key elements include: specification of information requirements; data quality requirements, particularly in flow metering and environmental control procedures; specifications should be attainable and related to needs; and effective data storage, processing (including validation), and dissemination to the point of use. To develop the information-gathering and plan-development processes and necessary skills, a pilot water resources survey and planning exercise should be carried out in one subcatchment area, where surface and ground waters are both significant and a wide range of uses exits.

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21. https://www.un.org/press/en/2008/ga10693.doc.htm General Assembly adopts resolutıon reaffırmıng territorial integrity of Azerbaıjan, demandıng wıthdrawal of all Armenian forces
22. http://www.gwp.org/
23. http://www.sukanal.az/
24. http://www.un.org/waterforlifedecade/iwrm.shtml

APPLICATION OF MARKETING COMMUNICATION OF INTEGRATED CITIZEN SERVICE POINT

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ABSTRACT

In both of the business and public sectors, Marketing Communication is very important to understand the needs of the customer. Properly applied marketing communication leads to linear or increased revenues in the postal sector. The theoretical basis of this article is devoted to the terms: marketing, communication, customer, sales, profit, eGoverment, Integrated service point of the citizen, which is operated by the national postal operator in the Slovak Republic. The analysis of the current state of the Integrated Point of Service in the Slovak Republic is compared with the analogous point of the Czech POINT, which provides similar services. The Czech Republic is characterized by better marketing communication in the field of customer orientation. The Slovak Republic is increasing efforts in providing quality eGovernment services. In the practical part of the article we focused on primary research, which was carried out in the form of a questionnaire. The research was carried out within the Žilina self-governing region. The research was focused on monitoring customer satisfaction with e-Government services at the Citizen's Integrated Service Point. Individual respondents expressed their views, suggestions and comments on improving the services of the Citizens' Integrated Service. After the evaluation of the main research it was obvious that it was necessary to improve the marketing communication of the given workplace as well as to improve the awareness of the citizens of the Žilina self-governing region in the area of public services of the postal operator. The main point of change in marketing communication is communication through social networks. Then we designed a prototype of marketing communication by creating a web interface on the Facebook social network. The Slovak Republic is gradually developing in the field of digitization, therefore it is necessary to provide better marketing communication in the field of e-Government, which could lead to greater customer satisfaction, increase in the number of customers, improved services and increased profits of the workplace.

Keywords: *Czech POINT, Integrated Service Point, Marketing communication*

1. INTRODUCTION

Electronic services have been booming in the last decade. The countries of the European Union are trying to bring electronic services closer to their citizens. One of the important success factors in the present is marketing communication. It expresses the basic marketing tool, which is focused on evoking and satisfying customer needs.

The requirements and needs of the client are met through the provision of services to consumers. Communicating in marketing philosophy is to make consumers aware of the service, highlighting its value, quality, utility and use. It also leads to the satisfaction of the customer's needs and requirements, which in turn leads to an increase in sales and profit. In public administration, such marketing communication is the basis for the realization of modern public administration, which is necessary for informatisation of society. The development of marketing communication is rapid due to the use of information and communication technologies that are part of everyday life. Appropriate marketing communication is manifested in various areas such as business sector, public sector, postal sector and the like. The application of appropriate marketing communication was used in the postal sector on the example of a specific assisted workplace, which is the Integrated Citizen's Place of Citizenship. An Integrated Citizen Service Point is a place (hereinafter referred to as "IOMO") where assisted services are provided. The IOMO provides access to electronic services of the state. In the postal sector in the Slovak Republic, the IOMO provider is the national postal operator, which is Slovak Post. A similar workplace in the Czech Republic is Czech POINT, t. j. Czech Posting Verification and Information National Terminal operated by Czech Post. In general, it could be said that it is a universal public administration contact point of the Czech Republic, which provides citizens with certified extracts from the public administration information system. The provision of electronic services in the aforementioned workplaces falls under the area of electronization of public administration, ie e-Government. Nowadays e-Government is a very important topic in terms of theory, research and government policy (Morgesson & Mithas, 2009; West, 2000). E-Government is characterized as an electronic form of public administration performance using information and communication technologies (Electronic Public Administration, 2018). Given the focus of this article, we can state that e-Government marketing communications in the postal sector is a process of providing customers with information about electronic services within contact points.

2. ANALYSIS OF E-GOVERNMENT ELECTRONIC SERVICES

In the analysis of the current situation we dealt with the comparison of e-Government services in the Slovak and Czech Republic. These countries are comparable in the field of e-Government. Within the scope of the comparison, we compared the e-Government contact services provided by national postal operators of selected countries. The following table shows the selected national postal operators:

- Slovak Post – service provider is IOMO,
- Czech Post – service provider is Czech POINT.

The above providers are then associated with e-Government services, which are provided through the focal point. The analysis is focused on the comparison of IOMO and Czech POINT services. If the site provides the given e-Government service, the service is marked with (✓), if the analyzed site does not provide the e-Government service, in the table such service is marked with (✕).

Table following on the next page

Table 1: Comparison of electronic services provided through contact points in the Slovak and Czech Republic

E-Government services provided by national postal operators	Slovak post	Czech post
Extract from the Commercial Register for legal purposes	✓	✓
Extract from the ownership letter for legal purposes	✓	✓
Criminal records	✓	✓
Depreciation of criminal records for legal purposes	✓	✓
Extract from the Land Register	✗	✓
Image from the cadastral map	✗	✓
Extract from the driver's score	✗	✓
Extract from public registers	✗	✓
Extract from the Trade Register	✗	✓
Extract from the list of qualified suppliers	✗	✓
Mediated filing under the Trade Licensing Act	✗	✓
Extract from the insolvency register	✗	✓
Register of participants of the car wreck operating module	✗	✓
Extracts from the basic registers	✗	✓
Realization of identification and compilation of authentic	✗	✓
Authorized document conversion	✓	✓
Data box requests and notifications	✗	✓
Guaranteed conversion	✓	✓
Change of address	✓	✗

Source: Custom processing

Essential electronic services such as authorized document conversion, guaranteed conversion, business register, legal title, criminal record and criminal record are provided by both postal operators at the same speed and quality. If we focus on additional services, which are only allowed in Slovakia by the Real Estate Cadastre and other relevant state and local authorities, we will find that the Czech Republic, in cooperation with Czech POINT, gives customers more space for easier and faster equipment of these services that IOMO does not provide. It is an extract from the cadastre of real estate, a picture of the cadastral map, an extract from the driver's point evaluation (the driver's point evaluation is not used in Slovakia), an extract from the public registers, insolvency register, register of participants of the car wrecks operating module, extracts from basic registers. Likewise, IOMO does not provide information to natural and legal persons regarding applications and notifications concerning data boxes. One service is excluded from IOMO in the Slovak Republic, which is a change of address that is not allowed in Czech Republic Czech POINT. After the coparation we found out that most of the provided electronic services within the e-Government have the Czech POINT contact point. From the total of 19 compared services, the Czech POINT office provides up to 18 electronic services. It follows that the Czech Post, is not lagging behind foreign countries, on the contrary, this postal company provides various new electronic services that could be introduced in other countries. On the contrary, Slovak post, provides only 7 electronic services within the IOMO workplace out of a total of 19 compared services.

It follows that Slovak post enables low number of electronic services compared to Czech Post. Consequently, we can state that the Slovak Post within the IOMO workplace could create new approaches in e-Government services that would lead to improvement of the product portfolio and at the same time to the development of electronization of public administration in the Slovak Republic. After analyzing the current situation, we then focused on individual IOMO services and their marketing promotion.

3. METHODOLOGY

The aim of the article was to define the electronic services of the Integrated Service Point and then to carry out the primary research aimed at improving the electronic services provided at this workplace. After the primary research we realized that the marketing communication of the IOMO workplace was insufficient from the citizens' point of view. For this reason, we focused on improving marketing communication in the workplace. Subsequently, we created a design of the IOMO facebook page, which should bring increased information about the workplace. Methods such as the excerpting method, the abstraction method, the compaction method, the primary research, the induction and deduction method as well as the synthesis method were used in this article. The method of excerpting was used in the study of scientific literature from non-homogeneous authors, whose insight into the issue was placed at the beginning of the scientific article. The method of abstraction was applied in narrowing the extent of the theoretical issue examined from a large number of opinions of individual authors on the issue. Subsequently, a comparison method was used in the analysis of the current situation, by means of which we compared the services of two identical workplaces, IOMO and Czech POINT. Primary research has been used to track customer satisfaction with e-services at the IOMO site. The primary research was carried out in the Zilina self-governing region. Due to the fact that e-Government services can be used only by citizens who hold an identity card, it was then necessary to determine the population in the Žilina self-governing region from 15 years, as of 31 June 2018 590 518 citizens are registered. We found this data from the internal materials of the Statistical Office. Given the size of the base sample, we used a calculation for the size of the base files, using the following formula:

$$n \geq t_{1-\frac{\alpha}{2}}{}^2 * \frac{\sigma^2}{\Delta^2}$$

where:
n - is the minimum sample size (minimum number of respondents),
t_(1-α/2) - s the critical value determined from the tables (critical values of the normalized normal distribution),
σ2 - is the variance calculated from the standard deviation,
Δ - is the maximum allowable margin of error.

Then we put the values into the formula:

$$n \geq \frac{1{,}96^2}{0{,}08^2} \text{ x } 0{,}5^2 = 150{,}062 \doteq 151 \text{ respondents}$$

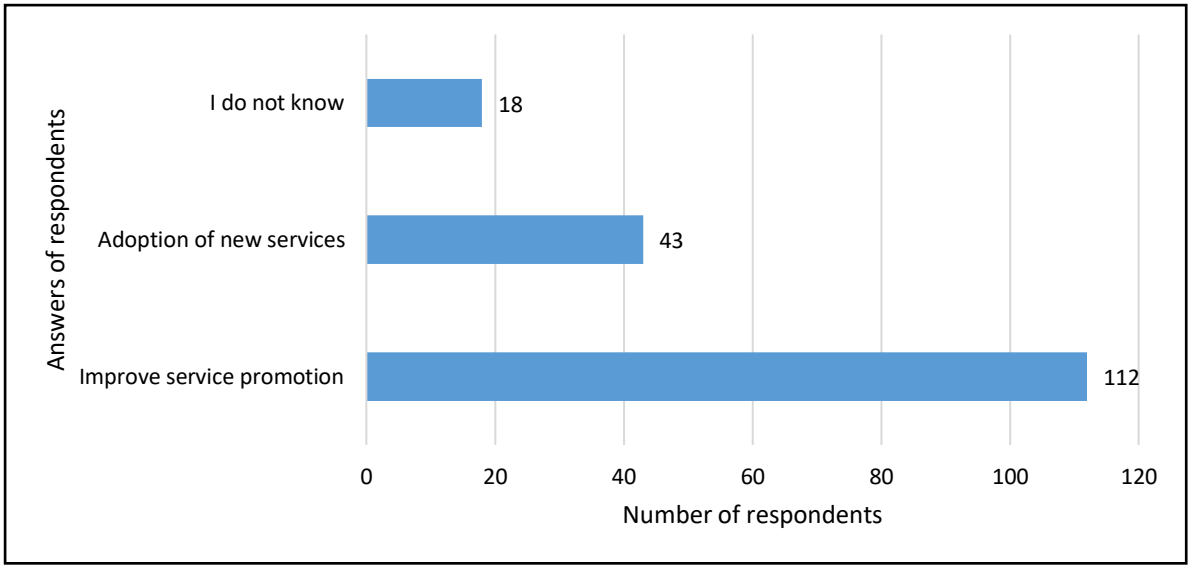
After substituting the values into the formula for the large sample population calculation, we found that at 95% confidence and 8% error ranges, the minimum sample size was 151 respondents. In conducting the primary survey, we were able to reach up to 173 respondents. Therefore, it can be stated that the requirement to fulfill the minimum sample size has been met.

Other methods that were used in this article were the method of induction and deduction. These methods were used in the evaluation of primary research. The last method used was the synthesis method. By means of this method, individual conclusions were established.

4.CONCLUSION

In the practical part of this article we focused on the evaluation of primary research, which was focused on how it would be necessary to improve electronic services within the IOMO workplace. As a part of primary research, the question was formulated as follows: "If you have any suggestions, comments or suggestions that would improve the electronic services at the IOMO workplace in the Slovak Republic, please include them in this questionnaire." This question was open which means that respondents expressed their own incentives to improve electronic services at the IOMO workplace. In FIG. 1 we can see the individual answers given by the respondents.

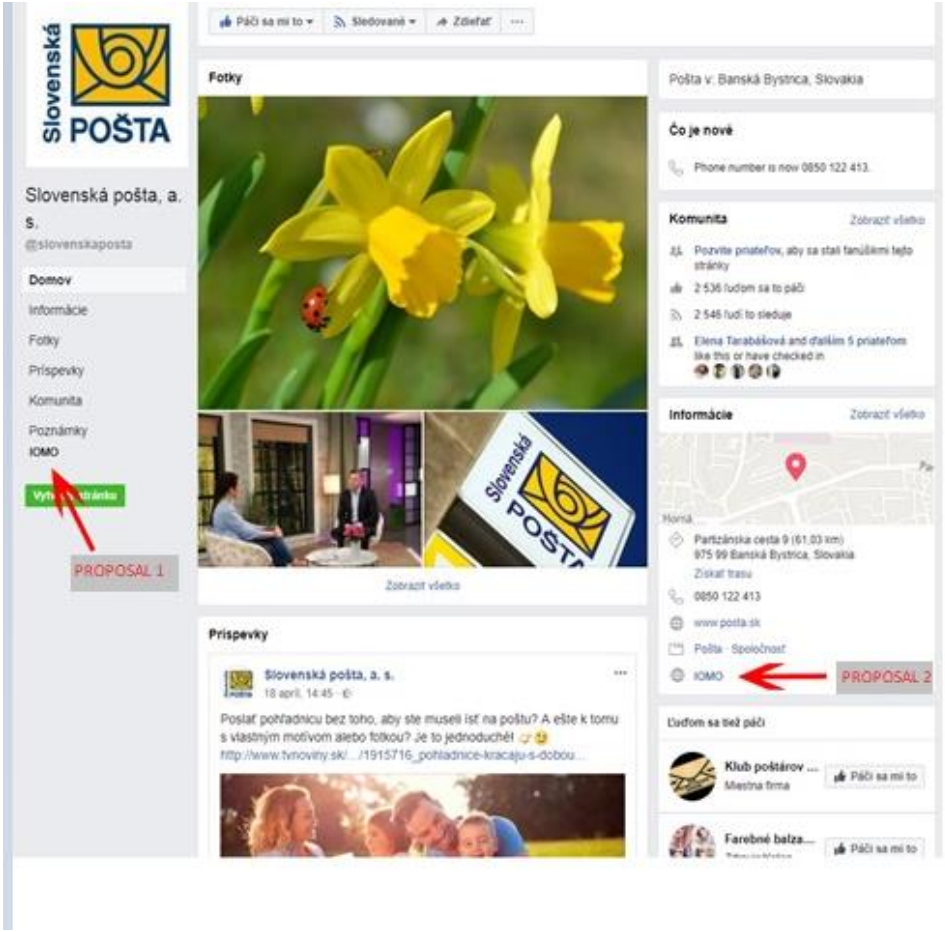
Figure 1: Návrhy na zlepšenie služieb pracoviska IOMO



Source: Custom processing

From Figure no. 1 shows that the respondents in the Zilina self-governing region have specific incentives that could lead to the improvement of the electronic services of the IOMO workplace. Of the 173 respondents, 43 respondents (24.9%) said they would accept more services at the IOMO workplace. This result was also confirmed in the comparison, when we found out that the IOMO workplace provides few services compared to the analogue workplace Czech Point. Subsequently, up to 18 respondents (10.4%) out of 173 respondents stated that they could not comment on what they would change in the workplace. Most respondents in primary research would accept an improvement in the promotion of electronic services at the IOMO workplace. Up to 112 respondents (64.7%) out of 173 respondents stated this answer. For this reason, it is necessary to improve marketing communication and subsequently to inform citizens about IOMO services provided at the Slovak Post. Among the proposals that could improve marketing communication and raise awareness of e-Government services at the Slovak Post. we have included the option to create a separate IOMO page on the Facebook social network. Slovak post it has an official Facebook social page, but a subpage could be created on this home page to find the electronic services that are provided at IOMO. Subsequently, the site could have various up-to-date information relevant to the site. In the following Figure no. 2 we can see the link of the official website of the Slovak Post with our IOMO preview.

Figure 2: Design of facebook page Slovak Post

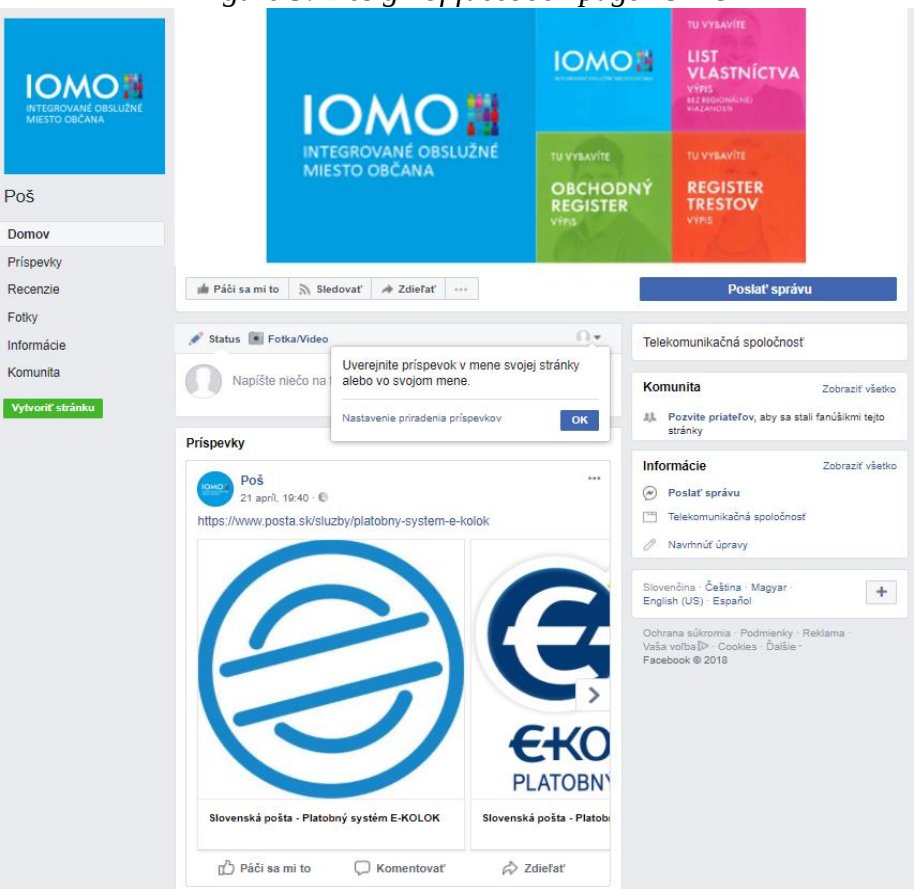


Source: Custom processing

In the first draft, the IOMO page is visible in the left toolbar. In the second proposal, the IOMO site is visible on the right under the Information folder. Clicking on the IOMO page would bring up the official IOMO site, managed by Slovak post. The design of such a page can be seen in the following Figure no. 3.

Figure following on the next page

Figure 3: Design of facebook page IOMO



Source: Custom processing

We have designed the Facebook page of the IOMO workplace because Facebook is a social network that can be used to address a wide range of current and potential customers of the Slovak Post. This proposal could subsequently lead to an improvement of the marketing communication and at the same time to an increased number of customers, which could influence the increase of revenues and the overall profit of Slovak Post. Other possibilities for improving the marketing communication of IOMO's electronic services could be to promote various promotional materials in the form of posters found, for example, in public transport or in various print media. Such a way of marketing communication could be beneficial for more informing citizens with IOMO services provided at the Slovak Post.

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DIGITAL LITERACY: FROM MACRO - TO MICROANALYSIS

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ABSTRACT

This paper argues that digital literacy consisting of various capabilities associated with the use and development of digital technologies may enhance countries', regions' and businesses' ability to draw on existing know-how and create new industrial paths. The analysis of Russian and international assessment methodologies is based upon such evaluative indicators as information, computer, communicative and media-literacies as well as the attitude toward technological innovations. Being a qualitative criterion, digital literacy alongside with such quantitative indicators of digital ecosystem as Internet connectivity, data rates, Internet costs, etc. is a key factor in developing digital economy at national and regional levels. The authors have proved that the choice of digital literacy assessment methodology allows for a more accurate developing of the digitalization support programmes.

Keywords: *digital competences, digital divide, digital economy, digital literacy, evaluative methodology*

1. INTRODUCTION

Policymakers and regulators need to adapt and develop more flexible, innovative and liberal regulatory systems which include a traditional primary telecommunication sector and take into account the multi-faceted and multi-stakeholder digitalizing world in order to meet the expectations of the rapidly evolving digital ecosystem. In 2016, 55 out of 122 countries announced the adoption of policies, regulations and laws concerning electronic and mobile apps and their interaction with other economic sectors and within their intersection. In Russia, the problem of a universal digital literacy among population is becoming a challenge at the national level whose importance is matched by the universal elimination of illiteracy at the beginning of the last century. The strategic approach to solving the problem of a digital divide among population was launched in the National Program "Digital Economy" [1] that provides for the establishment of communication networks, digital databases and educational and research facilities in the country. In this regard, the emerging digital economy needs a universal digital literacy among population enabling to establish the foundations for the ecosystem of the digital economy, prepare citizens to deal with new digital resources and ensure information security [2].

2. CURRENT APPROACHES TO DIGITAL LITERACY

Recently, the concept of the digital literacy has become increasingly valuable. Most researchers try to combine in it all kinds of literacies needed to use infocommunicational technologies and emphasize those of them essential in a world where the Internet is highly prevalent. The concept of digital literacy has been transformed from "computer literacy" [3], "information literacy" [4], "media literacy" [5], "ICT-literacy" [6]. The information literacy was first introduced in the USA in 1977 and used in the national program of higher education reform. Digital literacy was defined as an ability to understand and use the information distributed via computers in various formats and from various sources in the monograph by P. Gilster in 1997. The author identifies four key digital literacy competencies: knowledge assembly, evaluating information content, searching the Internet, and navigating hypertext [7]. After a decade, due to the widespread ICT circulation, M. Fieldhouse and N. Nicholas (2008) suggested the terms "literacy" and "fluency" to describe users' skills in searching for and critically evaluating the information in the digital space [8].

2.1. Evaluating digital literacy at the macro-level: Russia's example

Currently, the basis for the sustainable development of the economy is set by the technologies of digital economy, digital data processing and transfer. The recent digitalization trends are accompanied by the development of a new digital ecosystem infrastructure designed to give an impetus to the innovative potential of the country. The need to involve Russian citizens into the increased use of ICT and their access to digital dividends raises the importance of methodological approaches to estimating the degree of digital penetration and digital proficiency. The potential economic impact of economic digitalization in Russia is forecast to increase Russian GDP by 4.1-8.9 trillion roubles in 2025 which amounts to 19-34 per cent of the expected GDP growth [9]. The penetration of the digital economy results in the need for intellectual resources and the increase in the level of digital literacy among the population. In 2013-2019, Russia has managed to boost its innovative potential in the context of current global development and improve its position in the Global Innovation Index (GII) from 62 to 46 out of 129 countries [10]. However, in recent years, the innovative activity has declined in growth in Russia. The proportion of digital economy in Russia is 2.1per cent which is 1.3 times higher than 5 years ago and 3-4 times lower than that of the digitalization leading countries. Table 1 shows our calculations of the results of Russia's digital transformation as compared with the leading countries in various ratings.

Table following on the next page

Table 1: Rating indicators of digital transformation in Russia and abroad

Indicator	Russia's position	The positions of leading countries
Global Innovation Index [10] (2019)	46	USA - 1 Switzerland - 2 Singapore - 3
Digital Society Index (Dentsu Aegis Network), level of digitalization [11] (2019).	23	Singapore - 1 USA - 2 China - 3
Mastercard and Digital Planet Ranking position (developed by Tufts University) according to the progress level in developing digital economy [12] (2019)	42	US - 1 UK - 2 Netherlands - 3
E-government Development Index, UN DESA [13], (2018)	32	Denmark - 1 Australia -2 South Korea -3
ICT Development Index (International Telecommunication Union), the level of ICT development [14] (2017)	45	Iceland - 1 South Korea – 2 Switherland - 3
BCG e-Intensity Index, the level of digital economy development [15] (2016)	39	Denmark – 1 Luxembourg – 2 Sweden - 3
International Networked Readiness Index [16] (2016)	41	Singapore – 1 Finland – 2 Sweden – 3

Source: Worked out by the authors

The growth in digital economy is bound up with how positive is the population's attitude towards the digital environment. The results of the research [17] showed that the average level of digital involvement amounted to 45 per cent worldwide. The highest results demonstrate the countries with developing economies. Thus, China occupies the first position with the 70 per cent involvement, Russia – the second one with 50 per cent, Spain – the third one with 48 per cent. The most developed digital economies showed the lowest digital involvement levels. The basic sources of monitoring information on the digital economy and information society in Russia is collected by the Federal State Statistics Service of the Russian Federation – Rosstat (the questionnaire of population sample survey on the use of information technologies and ICT networks); the Russian Ministry for Mass Communications (the penetration of cellular mobile network, the number of internet subscribers, financial indicators of mobile operators, etc.), the Russian Ministry of Culture (data on the Internet use by culture institutions); the Russian Ministry for Education and Science (data on the Internet use by general, secondary and higher education establishments); the Russian Ministry for Economy (information on the provision of state and municipal services). The National Agency for Financial Studies (NAFS) and the Regional Social Centre for Internet Technologies (RSCIT) do their own research on estimating digital literacy (see Table 2). The NAFS uses the methodology suggested by G20 summit in 2017 [18].

Table 2: Ranking indicators of digital literacy in Russia

Indicator	NAFS [19]	RSCIT [20]
Digital Literacy Index (2019)	60	4,52

Source: Worked out by the authors

Russian population are increasingly looking to the Internet as a source of information, the level of social networks consumption is increasing, as well as the range of digital devices used by the Russians is expanding. The sub index of digital competences has made a huge breakthrough from 4.48 to 5.27 [20]. The increase in use values, and not just the introduction of digital technologies is an integral part of digital transformation resulted from the Industry 4.0 technologies. The development of information and communication technologies enables to match a producer with each end consumer thus avoiding the middleman, including the institutional ones. The population's access to digital technologies and services in Russia is relatively high. The primary digital needs in Russia (the access to the Internet and mobile communication, as well as confidence in the use of personal data) are 37 per cent taken care of, while in China the same indicator amounts to 69 per cent, in India – to 67 per cent, being the highest in the world where the average is 49 per cent. In 2018, Russian people used more financial online-services, public e-services and search engines. The proportion of those who used search engines every day or almost every day was 49.7 per cent of all population, with 38.9 per cent in 2015 [21]. According to the Russian Association for Electronic Communications (RAEC) and TIAR-Center, the number of transactions in sharing online-services functioning in Russia has increased in 2019 to 769.5 bln roubles which is an improvement compared to the previous year. The sharing leader in Russia is C2C sales (about 566 bln roubles) followed by online labour exchanges or P2P services (140 bln roubles), car sharing (20.5 bln roubles), carpooling (17.8 bln roubles) and short-term rental housing (15.6 bln roubles). The five leading industries have not changed as compared to 2018, also car sharing changed its position with carpooling (ride share services) and outstepped the last one in the number of transactions. However, a general pattern of growth in the sharing market has taken a new peak – 50 per cent instead of 30 per cent in the previous year [22].

3. REGIONAL AND INDIVIDUAL INDICATORS OF DIGITAL LITERACY IN RUSSIA

The digital economy needs additional resources and capabilities to operate with digital data which are processing power and data channels. The regions with the highest innovative and patent activity are becoming the main IT importers being the priority blocks of production processes in the post-industrial economy as they are the main instruments to work out the intellectual assets. It is generally accepted that the level of the Internet penetration and its impact on various economic spheres (the structure demand for labour and employment, e-commerce, public and municipal services) characterize the level of regional economic digitalization [23].
Digital literacy includes personal, technical and intellectual (digital) skills necessary to live in a digital world. Digital skills are established and blindfolded behaviours based upon knowledge and skills in the domain of using digital devices, apps and networks for accessing information and managing it [24]. Let us consider the trends in the distribution of digital literacy levels across Russia using expert studies data of 2015-2017 (see Table 3) [20].

Table following on the next page

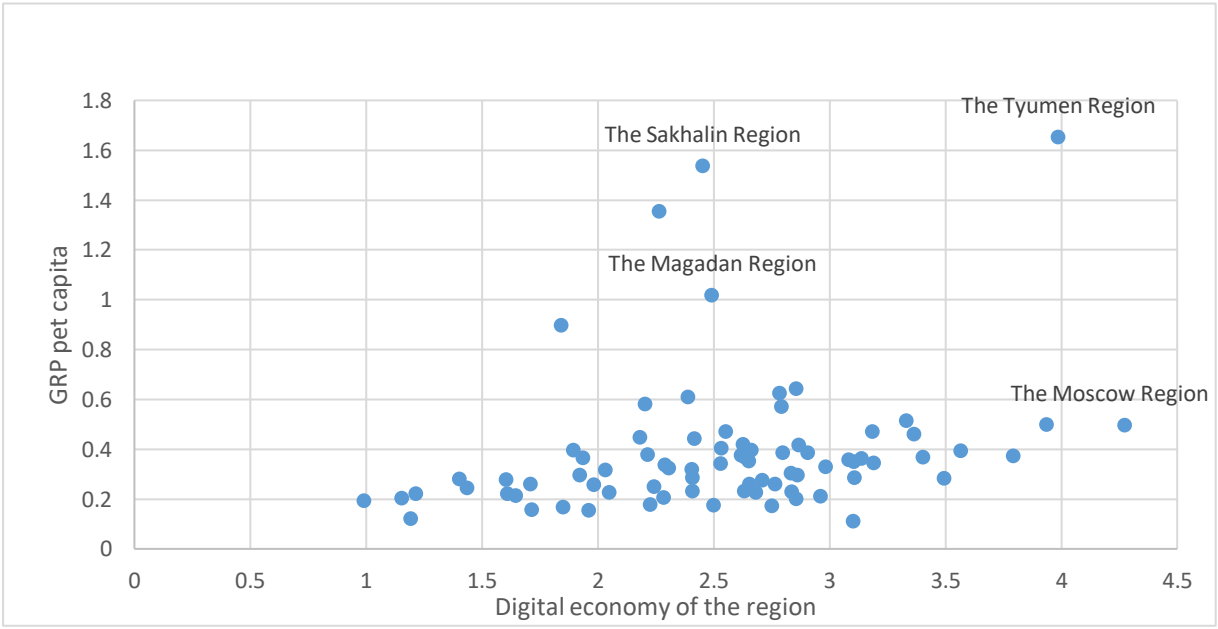
Table 3: Rating indicators of digital literacy in Russia

Federal District	Digital Literacy Index					
	Value	Rank	Value	Rank	Value	Rank
	2015	2015	2016	2016	2017	2017
Central	5.83	2	6.78	1	6.41	1
Northwestern	6.46	1	6.39	2	5.95	2
Ural	5.02	4	5.07	3	5.07	3
Far Eastern	5.17	3	4.17	6	4.17	8
Southern	4.72	5	3.47	8	4.28	7
North Caucasian	4.19	6	4.47	4	4.40	6
Volga	3.30	8	4.42	5	4.42	5
Siberian	3.97	7	3.71	7	5.03	4
Russia	**4.79**	-	**5.42**	-	**5.99**	-

Source: worked out by the authors

The most successful in developing digital literacy were the Northwestern, Ural and Volga Federal Districts. They have managed to preserve their positions in the ranking over four years of changes due to sustainable and balanced development of their indicators with the rates of development in these districts varying greatly. The highest increase in digital literacy was shown by the Siberian Federal District. Though the information and communication technologies are an important development tool changing many aspects of activities, the digital divide is rather high in Russian regions due to the differences in access to ICT and their use. The research by G. Khmeleva, E. Chirkunova, E. Koroleva and M. Kurnikova [25] showed the digital divide across Russian regions reflecting the dependence of digital maturity on regional economic development, average per capita income, consumer prices and other offline components. The industrialized regions have more active advantage of digital economy (see fig. 1).

Figure 1: The generalized model of GDP and digital economy



Source: worked out by the authors

It is important to consider, however, that the rapid development of the Internet industry needs a steady influx of qualified IT-personnel. This gives greater importance to programming skills by specialists of other spheres such as finances, business analytics, etc.

About 2 mln people including the self-employed are now working for the companies at the Internet markets. However, the educational system does not manage to adjust to the changes in the IT markets. Currently, IT programs are offered by every third university in the country. However, this does not deal with the problem of digital literacy among ordinary users or the experts without the higher profile IT education. In this context, self-learning and online services are developing fast where the educational system leaves gaps. According to the NAFS results, the level of digital literacy among Russian teachers is 88 points out of 100; the average level of digital literacy in Russia is 52 points being unequal across age and professional groups: 77 points in the 18-24 age group, 73 points in the 12-17 age group, 64 points among graduated people [26]. The platform "Digital GTO (Ready for Labor and Defense)" is designed to enhance and evaluate the level of digital literacy in Russia. The project is sited on цифроваяграмотность.рф operated by the University 20.35 with digital literacy being estimated by High School of Economics. The pilot program in 2019 included 5 Russian subjects: Bashkortostan, the Republics of Sakha (Yakutia) and Tatarstan, the Rostov and Tula Oblasts [27]. The Digital Dictation was launched in 2019, with 39,398 people have taken part in it: 30,325 adult people and 9,073 teenagers aged 14-17. The average level of digital literacy scored 7.15 out of 10 points. The best results were demonstrated by the population in the Udmurt Republic, the Nizhny Novgorod Oblast, the Perm Krai, the Republic of Tatarstan, the Kirov and Saratov Oblasts, the Republic of Mari El and the Samara Oblast aged 25-34 and 35-44. The participants with the digital literacy of 8-10 points in the Volga Federal District are less frequent in the age group of 60 and above – only 14.3 per cent of them could show high digital literacy [20]. Specific actions in digitalizing a certain sphere of everyday life in a town or a small city may enhance synergies among all sectors of digital economy as they increase the digital literacy among population, business digitalization. For instance, the introduction of food and goods delivery services, Yandex.Taxi may improve all infrastructural elements for the further development of a municipality.

4. CONCLUSION

The paper was aimed at demonstrating the genesis of digital literacy and its estimations at the macro-, meso- and micro-levels. The authors attempted to show that the Internet penetration being the engine of the digital economy does not necessarily result in all advantages of digital transformation for Russian regions. The increase in digital literacy among the population will significantly improve the contribution of all participants into the digital transformation of Russian economy. Practically all economic processes have been within the business centric paradigm of interactions: B2B, B2C, B2G. However, the development of technologies enables individuals to play an important part in business processes resulting in some new types of interactions such as C2B and C2C. The examples of the first one are freelancers, the second ones – CrowdFunding startups such as the US kickstarter.com and the Russian planeta.ru.

There is a wide variety of mechanisms of providing economic sectors with highly qualified IT personnel that can be used in Russian regions:

- the launch of competence centers by universities designed to improve digital skills among all students;
- the creation of a support digital infrastructure (secure communication lines, data centers) that can guarantee the conditions for quality development of the innovative environment;
- free access of citizens to online communications (free access for public services provision);
- manage information flows and digital ecosystem with the platform of digital economy;
- ensuring information security.

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ACCOUNTING, CREATIVITY AND THEIR IMPACT ON VALUE OF COMPANY

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ABSTRACT

The value of the company is determined for various purposes (for example, sale, obtaining a mortgage in a bank, etc.). It can also serve as a marketing tool for companies to present themselves in front of their internal and external business surroundings. Depending on this purpose, the company may try to influence this value by various instruments. These practices may include creative accounting. It results from accounting theories, but it records distorted economic changes in the company according to the wishes of the partners. In this article, we focus on influencing accounting data and how this information affects business value. Creative accounting practices have a significant impact on the business structure. The share of assets and liabilities of the company influences the financial stability of the evaluated company and also the overall picture of the company. In this paper we will try to influence the profit of the company and the structure of assets and liabilities of the company. We apply the changes to the company in a simplified example and describe how they impact on the value of the business.
Keywords: *value of the company, creative accounting, assets and liabilities of the company*

1. INTRODUCTION

Accounting is a scientific discipline that deals with recording true economic changes in a company. It is intended to provide a true and fair view of the company's management. [8] The company that is required to keep accounts must ensure continuous and true reporting of:

a) the state of property and its movement
b) the status of commitments and their movements
c) differences between assets and liabilities
d) income
e) costs
f) income
g) expenditure
h) profit or loss. [18]

Šlosárová et al. Describes accounting as an information system of a company. This system varies from one company to another in terms of degree of sophistication and design. Each information system consists of collection of accounting data and its subsequent classification, adjustment of these data at the end of the accounting period, summarization for presentation purposes and publication of accounting information [10]. For the expert activity, the accounting of the company and its outputs are one of the basic documents for determining the value of the company. For expert practice the general value of the company, resp. of the enterprise as defined in Decree 492/2004 Coll. on the determination of the general value of assets as the resulting objectified value of the assets, which is an expert estimate of the most likely price of the assets being valued at the valuation date at a given location and time, which it should achieve on the market usually including value added tax [2, 8].

In practice, the most widely used valuation methods are based on the property and income principle. For the property principle, the value of an enterprise is calculated from the value of the individual components of the enterprise's assets, minus the value of the liabilities. In Decree no. 492/2004 Coll. on the determination of the general value of assets this principle corresponds in particular to the property and liquidation methods. This method takes into account the static view of the enterprise as a whole at a specific date [1, 2]. As of that date, the contracting entities are presented to the expert the reports of assets and liabilities in detailed breakdown by individual components, ie. detailed according to property cards, inventory records, cash and bank accounts, detailed records of each receivable and payable, together with the relevant contracts, repayment schedules, set-off agreements and the like, depending on the specific structure of the company. It requires cooperation of experts of technical and economic expert fields, precise organization of works and their mutual relationship, securing of documents, inspections of property. The yield principle of valuation [7, 9] works with data for a longer period of time, as it is necessary to prepare an analysis of the past development of the company. The decree uses the revenue principle in the business method. An analysis of past developments will show the feasibility of the business plan and the financial plan on which this principle is based. Compared to the property method, it is less laborious because it does not require such a team of experts as the property method. The sponsor obtains information about the value of the company as a whole by this method, but does not know the value of individual components of assets and liabilities. This, in turn, is an advantage of the property method. Each of the methods based on the property or income principle has its own positives but also negatives. It is up to the expert's experience and also to the structure of the submitted data and information that the methods are applied correctly.

2. CREATIVE ACCOUNTING IN THE COMPANY

In this article, we focus on knowingly influencing accounting data and how this information affects business value. The value of a business is determined for a variety of purposes (sale, non-monetary investment, merger, borrowing, etc.) and, depending on this purpose, the company may try to influence that value through various instruments to the extent possible. These practices may include creative accounting, which results from accounting theories, but records distorted economic changes in the business as desired by several entities. Creative accounting can be understood as a conscious distortion of economic changes in a business for a predetermined purpose [11]; It is at the discretion of the entity that uses these creative accounting practices, as it is in any case a misrepresentation and manipulation of the data and in some cases it can commit crime. According to the Criminal Code in Slovakia, anyone who makes false or grossly misleading data or conceals mandatory facts about a material fact in the statement, report, input data entered into the computer or in other documents used for accounting purposes "commits an offense against economic discipline [13, 16]. Such an offense shall be punishable, depending on the severity and magnitude of the damage, by imprisonment for 3 to 8 years if it causes considerable damage by such behavior and by imprisonment for 5 to 12 years if its actions cause large-scale damage or disturbance of the economy [13, 16]. "Anyone who carries out the offense of misrepresenting economic and commercial records and causes large-scale damage will be punished by imprisonment of up to three to eight years" [13, 16]. There can be several purposes for misrepresenting accounting information (financial statements). The most common reason is to reduce the tax base, but a rare case is the artificial improvement of the results achieved. Different groups may be interested in misrepresenting financial statements, such as employees - if they receive remuneration from employee shares, management if they are directly or indirectly remunerated according to their profit or loss, or investors wishing to secure and capitalize on their investments. Company management may be interested in presenting the entity in a “better light” for, for example, competitors, the public,

banks, manipulating the financial situation through the creation of reserves and provisions, in order to defend transfer prices between related parties. Manipulations in accounting can be eg:

- excessive VAT deductions, chaining of VAT transactions, fraud in foreign trade in exempt supplies
- fraud in the valuation of non-current and current assets
- fictitious reporting of costs and revenues through tax documents
- Incorrect reporting of the short / long term timing
- substitution of operational for financial leasing
- credit fraud, fraud
- Off-balance sheet reporting
- lowering the income tax base.

Creative accounting practices have a significant impact on the business structure. The share of own and external sources of coverage of an enterprise affects the financial stability of the evaluated company. In equity, the profit or loss that is largely subject to distortion is included in equity. A high share of own funds makes the company more stable, while their low share makes the company more labile. Conversely, what is the value of liabilities, i. The higher the debt, the higher the indebtedness of the company, which decreases the resulting value of the company determined by the expert. Distorting economic results may: [13]

- NON-CASH ACCOUNTING OPERATIONS - in this case, the results of the company in the financial statements may be influenced, for example, by reserves - their creation and use; fixed assets, inventories, provisions, depreciation method
- NON-OPERATIONAL ACTIVITIES - non-operational activities include, for example - damages, bad debts, impaired inventory

Of these options, this paper focuses on reserves, their creation, impact on profit or loss, and provisions for receivables, and we look separately at liabilities to state institutions. We apply changes to the company in a simplified model and consider how they impact on the value of the business.

3. CREATIVE ACCOUNTING APPLIED TO THE COMPANY

The company to which we apply the above mentioned changes was established in 2016 and the main activity is related to the realization of constructions, finishing construction work in the realization of exteriors and interiors. The company is classified as a small entity, keeps double-entry bookkeeping and the number of employees is 5-9. The company is a payer of value added tax.

3.1. Analysis of provisions and receivables

Provisions are Liabilities of uncertain timing or amount (Section 26 (5) of the Accounting Act) Provisions are created on the basis of the risk and loss caution principle; If the amount of this obligation is not known, it shall be measured at an amount sufficient to meet the obligation at the balance sheet date. As this is an estimate, there is ample scope for manipulating this type of accounting data, to the extent that the entity can justify it. The company under review does not report short-term or long-term provisions. Pursuant to the provision of MF SR no. 23054 / 2002-92, a company may create certain types of provisions that are closely related to its line of business, thereby affecting profit or loss (Table 1).

Table following on the next page

Table 1: Creation of provision from an accounting point of view

Accounting of Reserves	Debit	Credit
Creation of provisions for claims and warranty repairs	568	459

Source: Own processing of accounting procedures [14]

The company offers the customer a guarantee for the work during the construction work. There may be a risk that the company must pay the customer some financial compensation for the damage incurred. Therefore, the Company creates a provision for claims and warranty repairs. For example, the company under review may create a reserve of 5% of total revenue for services rendered, as the business is building. The amount of the reserve for claims and warranty repairs will therefore be € 19,536. From the tax point of view, this type of reserve is not a tax expense, it affects the economic result. However, since it is not a tax expense, it has an effect on the tax return in the form of an attributable item - ie the tax base will be increased by the stated value of the provision.

3.2. Receivables and provisions

An allowance is created for an entity if it can be assumed that an asset has been impaired compared to its carrying amount in accounting. A provision for a receivable is created primarily for such a receivable where it is reasonable to assume that the debtor will not pay it in whole or in part and for the disputed receivable from the debtor with whom the recognition dispute is being conducted. On the basis of § 26 par. 3 of the Act on Accounting, the accounting entity is obliged to adjust the valuation of assets, create reserves and depreciate assets in accordance with accounting principles and methods as of the date of the financial statements. This means that the recognition of a provision for receivables belongs to financial statements. Pursuant to Section 20 of the Income Tax Act, we may include provisions for tax expenditures, for example on receivables:

- which we recognized as taxable income at the inception,
- debtors in bankruptcy or restructuring,
- unsecured claims.

We will take a closer look at the non-statute-barred risk receivables. These are receivables where it is assumed that the partner will not pay them in part or in full, while the receivables have not yet passed 4 years from their due date. From the accounting point of view, we create them as expenses in full or in part of the outstanding debt (Table 2).

Table 2: Creation of provisions for receivables by the accounting point

Posting of provisions	Debit	Credit
Creation of provisions for receivables	547	391

Source: Own processing of accounting procedures [14]

From a tax point of view, this expense is a recognized expenditure for us only to a certain amount. This is determined according to how many days the receivable is overdue [5]:

- 20% of the nominal value of the claim - 360 days from maturity
- 50% of the nominal value of the claim - more than 720 days expire
- 100% of the nominal value of the claim - more than 1080 days elapse.

An invoice of € 4,000 with VAT was issued in a specific company, payable on March 15, 2018. Due to the insolvency of the partner, we assessed it as a risk receivable as of December 31, 2018 and decided to create a provision for it in full. receivables, t. j. € 4,000.

We also need to look at the creation of OPs from a tax perspective. Less than 360 days have passed since the due date of the receivable, we cannot include the allowance in tax expenses. We charge 547/391, but for account 547, we introduce the analytical account number that we use for the creditable items pointing to line 130 of the corporate tax return. In this tax period, we will increase the profit for the calculation of income tax by this amount. We look at the status of the company as of 31/12/2018 and monitor the impact on the value of the company at that date. Later, for example, when a company settles a repayment schedule with a customer or a receivable is settled, the provision is released.

Table 3: Company assets as of 31.12.2018

Assets		**31.12. 2018**	**Modification**
	Total assets	182 294,00	**178 294,00**
A	Non - current assets	75 813,00	75 813,00
A.II.	Tangible fixed assets	75 813,00	75 813,00
A.II.3	Separate movables and sets of movables	37 896,00	37 896,00
A.II.7	Acquisition of tangible fixed assets	37 917,00	37 917,00
B	Current assets	106 481,00	**102 481,00**
B.III.	Short-term receivables total	47 198,00	**43 198,00**
B.III.1	Trade receivables	26 496,00	22 496,00
B.III.7	Tax receivables and subsidies	20 702,00	20 702,00
B.IV.	Financial accounts total	59 283,00	59 283,00
B.IV.1	Money	4 296,00	4 296,00
B.IV.2	Bank accounts	54 987,00	54 987,00
C	Accruals	-	-

Source: Own processing

The provision reduces the value of receivables and thus the current assets and total assets together in net value (Table 3 and 4).

Table 4: The resulting structure of the Company's assets and liabilities after the creation of the provision and provision and the profit / loss

Liabilities		**31.12.2018**	**Modification**
	Total equity and liabilities	182 294,00	**178 294,00**
A	Equity	105 122,00	**81 586,00**
A.I	Share capital sum	5 000,00	5 000,00
A.I.1	Share capital	5 000,00	5 000,00
A.III	Profit funds total	500,00	500,00
A.III.1	Legal reserve fund	500,00	500,00
A.IV	Profit / loss from previous years	78 407,00	78 407,00
A.IV.1	Retained earnings	78 407,00	78 407,00
A.V	Profit / loss for the accounting period after tax	21 215,00	-2 321,00
B	Liabilities	77 172,00	**96 708,00**
B.I	Reserves total	-	19 536,00
B.II	Long-term liabilities total	41 301,00	41 301,00
B.II.9	Liabilities from social fund	151,00	151,00
B.II.10	Other long - term payables	41 150,00	41 150,00
B.III	Short-term liabilities total	13 371,00	13 371,00
B.III.1	Trade payables	1 439,00	1 439,00
B.III.6	Liabilities to partners and associations	8 041,00	8 041,00
B.III.7	Payables to employees	2 072,00	2 072,00
B.III.8	Social security payables	1 189,00	1 189,00
B.III.9	Tax liabilities and subsidies	912,00	912,00
B.III.10	Other liabilities	-282,00	-282,00
B.IV	Short-term financial assistance	22 500,00	22 500,00
B.V	Bank loans	-	-
C	Accruals	-	-

Source: Own processing

The creation of the provision increased the total liabilities and at the same time decreased the equity of the company. This is due to a decline in the economic result for 2018 (Table 5).

Table 5: Income statement for 2018 year before and after modification

	Income Statement 2018 Adjustment	**2018**	**Modification**
I.	Sales of goods	-	-
A	Cost of goods sold	-	-
II.	Production	390 739,00	390 739,00
II.1	Revenue from own products and services	390 739,00	390 739,00
B	Production consumption	296 323,00	296 323,00
B.1	Consumed material, energy and other non-storable supplies	148 280,00	148 280,00
B.2	Services	148 043,00	148 043,00
+	Added value	94 416,00	94 416,00
C	Personnel costs sum	40 928,00	40 928,00
C.1	Labor costs	30 162,00	30 162,00
C.3	Social security expenses	9 376,00	9 376,00
C.4	Social costs	1 390,00	1 390,00
D	Taxes and fees	1 111,00	1 111,00
E	Depreciation and provisions for intangible and tangible fixed assets	15 950,00	15 950,00
III.	Sales of fixed assets and material	417,00	417,00
F	Net book value of fixed assets and material sold	9 305,00	9 305,00
G	Creation and settlement of provisions for receivables	-	**4 000,00**
IV.	Other income from economic activities	9 663,00	9 663,00
H	Other costs of economic activity	6 180,00	6 180,00
*****	**Profit / loss from operating activities**	**31 022,00**	**27 022,00**
N	Interest expense	1 804,00	1 804,00
P	Other financial expenses	432,00	**19 968,00**
*	Profit / loss from financial activities	-2 236,00	-21 772,00
**	Profit / loss from ordinary activities before tax	28 786,00	**5 250,00**
S	Income tax on ordinary activities	7 571,00	7571
**	Profit / loss from ordinary activities after tax	21 215,00	**-2 321,00**

Source: Own processing

4. EFFECT OF ADJUSTING THE ACCOUNTING DATA ON THE VALUE OF THE ENTERPRISE

Such data shall be obtained by the expert for the preparation of the expert opinion. The data presented presents the company in its surroundings and it is also data for example for state institutions or banks. As an expert, he further treats the data, which may affect the resulting value of the business, and where and to what extent creative accounting in expertise can be revealed is a question of reflection. Both cases may have a significant effect on the value of the business, depending on the amount of the value of the particular item and also on the method by which the expert calculates the value.

4.1. In the case of reserves

The value of reserves is shown on the liabilities side and increases the value of liabilities. The ratio of own and external resources is changing. This step will increase the indebtedness of the company as the reserves are included in the company's liabilities. The original indebtedness of the company was 42.33% and increased to 54.24%. Equity will also change due to changes in profit or loss. In determining the general value of an undertaking by an expert, the above-mentioned adjustment of the data affects both methods, the equity method and the business method. In the equity method, if the value of liabilities is increased by a reserve value of EUR 19,536, then the amount of the enterprise as a whole is reduced by the equity method for determining the enterprise's value. The creation of the reserve significantly reduced the economic result, which also has an impact on the business method.

This change will have an impact on the company's financial plan on which the calculation is based. A detailed analysis of the reserves and their dissolution is required to be incorporated into the plan. The company has a short history, so the expert must be very careful when assessing the feasibility of a plan. The structure of own funds and external funds affects the amount of capitalization, where it directly enters the calculation.

4.2. In case of provisioning of receivables

This adjustment by creating an allowance for a risk receivable affects the financial statements on the assets side as well as current assets. At the same time, it has an impact on the economic result and thus also on the liabilities side, namely equity. The equity method determines in detail the value of each asset component as well as the receivable. The information and supporting documents are submitted to the expert for each invoice issued. The created provision is for the expert only information that the receivable is risky. The expert at work is based on the original amount of the receivable and objectifies it himself according to the procedure given in Decree 492/2004 Coll. In the income method, the allowance is expensed and thus affects the profit or loss. What is the same as for reserves, the economic result is one of the main variables in the calculation. Therefore, the provision created as of 31/12/2018 has a significant impact on the business method.

5. LIABILITIES TO STATE INSTITUTIONS

A separate group of liabilities consists of liabilities to state institutions. However, they have their specific status, as they are tied to a specific person and are subject to public law. Pursuant to the decision of the Supreme Court file no. Mark 6Sžf / 21/2015 [4] a claim of the type as above is excluded from the assignment according to § 524 et seq. Of the Civil Code. The decision states: Tax receivables and payables are receivables and payables of a public nature, which do not arise on the basis of contractual freedom, respectively. other matters governed by civil law, but are the consequence of a statutory tax regime based on the taxpayer's obligation to respect the tax arrangements laid down by the State and carried out in the exercise of the powers of the tax authorities as a manifestation of the State's power. It is evident that their establishment does not depend on the existence of a civil relationship within the meaning of § 2 para. 2 of the Civil Code, pursuant to which the parties have the same status in civil relations, nor are they legal acts in connection with the administration of state property under Act no. no. 278/1993 Coll. The public nature of this obligation also implies that both the liabilities and the receivables relate solely to the person of the taxpayer, so their assignment is not possible under § 524 et seq. Of the Civil Code. The actual sale of a business (a company or a natural person), a non-monetary contribution, the division of the company is linked to the business, respectively. Civil Code. The component of a public asset or liability may have a significant effect on the resulting general value of the business, particularly in the case of significant excess VAT deductions or failure to pay tax and levy obligations. Therefore, at the outset when starting work on each report, the legal substance of the legal issue should be considered in order not to distort the resulting general value for a specific purpose. In the case of a purpose for which a receivable or liability of a public nature should be transferred, it is necessary to exclude these elements of property from the subject of valuation at the beginning of expert evidence. Expert practice suggests that many companies have a very high level of obligations. There are many companies that are prosecuted because they do not pay the obligations. When we look at the calculation of the general value of a company, both methods have a significant impact on both methods. In the equity method, liabilities generally reduce the overall value of the asset components in their entirety. Therefore, if the company is in bankruptcy and the value of the liabilities is higher than the value of the assets, the situation is that we quantify the negative value of the company.

Managers often fail to comply with legal procedures and do not apply for restructuring or bankruptcy. On the contrary, their inactivity only deepens the indebtedness of society. Some want to get rid of their companies by selling them. However, he is not relieved of his responsibility. Pursuant to the Commercial Law (Section 135a of the Commercial Code [3]), the Managing Director is obliged to perform his / her function with professional care and in accordance with the interests of the Company and all its associates. Executives who have breached their duties in the exercise of their powers shall be jointly and severally liable for the damage caused by the companies. In addition to responsibility for the performance of the function regulated by the Commercial Code, however, much more serious consequences are caused by such acts of the executive or by his inactivity, which the Criminal Code classifies as committing a crime. Criminal liability of executives p. r. about. is the most serious consequence of the infringement. Under the current legislation, only individuals are currently criminally liable. The executive of the company can commit the offense in the performance of office, if the facts of the offense requires so-called. special entity, which is a member of the statutory body (eg fraudulent bankruptcy offense), or may be the perpetrator of offenses on the basis of § 128 para. 8 of the Criminal Code, which establishes a rule used in situations where a member of a company body acting as a natural person acts on behalf of a legal entity - a limited liability company (the so-called "acting for another" rule). In the case of property crimes which may be committed by a company where the offender is a debtor (a limited liability company as a legal person) under the Criminal Code, the director may be punished as a natural person (eg a creditor favoring offense) [17].

6. CONCLUSION

Creative accounting practices have a significant impact on the structure of the company and its economic results. In simple examples, we have shown how significant the impact of the creation of a provision or provision can be on the company's results and consequently on the value of the company. The expert activity is connected with many requirements that the expert has to fulfill, but also with great responsibility, creativity and also the expert's intuition. In many cases, creative accounting practices are very difficult to detect and difficult to prove. For each asset component, the necessary documents are required to determine its value. The expert can only rely on translated documents, information. Therefore, it must work with particular care with the submitted documents, study in detail, and seek interconnections between the components of assets and liabilities. It is also necessary to pay attention to the components of assets and liabilities that we know to be subject to the results of the company.

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CONTEMPORARY STRUCTURE OF RUSSIAN BUSINESS

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ABSTRACT
The article is aimed to analyze the structure of Russian business within small, medium-sized, and large enterprises in every Federal District. The research discovers the complexity of Russian business structure with domination of small business along with negligible share of large business. The authors reveal the period when every Federal District demonstrated significant reduction of medium-sized and large enterprises which influenced further changes in Russian business structure. One of the main reasons for the changes in the number of enterprises in every sector is identified. The article defines the quantity of enterprises redistributed between different sectors of business. The research is based on economic and financial reports of Russian enterprises for the period 2013-2017, provided by The First Independent Rating Agency (Fira.pro). The results of the research allow not only to continue the study of Russian business structure within the framework of dominant spheres in every category of business, but ultimately can serve as a basis for future efficiency assessment of business structure in terms of contribution of every sector to GDP.
Keywords: *Business, Russian business, Business structure, Small business, Medium-sized business, Large business, Federal Districts*

1. INTRODUCTION

Business is a driving for force for economic development in every country. Small and medium-sized businesses can be characterized as the most flexible sectors, capable to fill new market niches swiftly, provide healthy competition, and to keep up with consumers' requirements. Large business, for its part, serves as the foundation of economy with significant share in GDP. Nevertheless, it must be noted that a trend in development within the categories of business still fall below expectations with the lack of dynamics. Business, particularly small and medium sized enterprises, is yet vulnerable to the impact of market conditions, and needs the government support. Effective business structure ensuring sustainable development of Russia and its regions is still to be formed. Five years have passed since the last shake-up in Russian economy. Stagnation in 2013 with following external effects in 2014 (sanctions, fall in oil prices) forced the Russian Government to take measures, and develop new programs for economic and social sustainability. The implementation of the measures was initiated by a government order N 98-r, issued on January 27, 2015. It consisted of priority measures including cost savings for business and support for small and medium-sized enterprises (2015). Today it cannot be said that the measures mentioned above remained on paper.

The system of support for small and medium-sized businesses was developed. It included creation of new financial and business institutes, programs of the government support etc. New platforms for collaboration between business, society, and the State, along with brand new business projects were developed. However, we need to answer the following questions. Did the measures fulfil their intended purposes? Did they contribute in support of small and medium-sized businesses? Did they stimulate the creation of new businesses? Can we observe quantitative and qualitative growth? Did the measures to support small and medium-sized businesses have any influence on the structure of Russian business? Did the share of large business decreased towards small and medium-sized business? The research is focused on finding the answers to these questions. The article is aimed to analyze the structure of Russian business within small, medium-sized, and large enterprises in every Federal District. The structure of Russian business, regardless of the framework of research (type of economic activity or the size of business), is a pressing issue for political elite as well as for scientific community. For instance, formation of small and medium-sized business structures in modern conditions is studied by Burmistrova (2012). Stepanenko (2018) surveyed forms, models, and features of interaction between small, medium-sized, and large businesses. Institutional aspects of management within the system of infrastructural support of small and medium-sized businesses, including inefficient distribution of grants between regional budgets ignoring their actual needs, are studied by Rudenko (2019). Barhatov and Belova (2017), Nikolaeva and Pletnev (2015) introduced a considerable number of works on issues of small and medium-sized business, in particular, factors of success, development of methodology for integral assessment of success within small and medium-sized business, analysis of successful practice in Russian medium-sized business, and modelling of successful Russian enterprises. The research of large business industry structure within Russian and foreign enterprises was presented by Zaverskiy and Kononova (2013), and furthermore, large business was studied by Barhatov, Benz, and Belova (2017) through the prism of its key sectors, and its structure on regional level. Influence of business on regional economic development in Latvia was presented by Krumins et al. (2015). Current condition of large business in in Kazakhstan was assessed by Kirdasinova et al. (2016). Analysis of the key factors for successful business continuity in certain sectors of Lithuanian economy was made by Langvinienė and Daunoravičiūtė (2015). The modern economic community is diveded into two groups. One group believes that government must not interfere in large business functioning. Second group vice versa is convinced that business should be regulated by the State. Influence of State reforms of business regulation on economic growth in 172 countries was studied by Haidar (2012). According to the results of Haidar's research every business regulating reform stimulates a 0.15% of GDP increase. In addition, the works of Djankov et al. (2006), Haidar (2009) demonstrate negative influence of cumbersome procedures in business regulation on economic development. The studies on institutional environment, institutional factors of development, and functioning institutions of business development was undertaken by many scientists. For instance, the influence of regional institutional environment on the structure of capital in Spanish small and medium-sized business was revealed by Di Pietro, Sanchez, and Roldan (2017). The research of factors affecting successful functioning of small business was made by Perez, and Rodriguez (2015). Comprehensive analysis of influence of institutional environment on strategic growth of small and medium-sized business among the emerging countries, based on internationalization, was presented in the work of Volchek, Henttonen, and Edelmann (2013). The research on political environment, institutions of internal and external support, and their impact on successful functioning of small and medium-sized business in Ghana, and Malawi was conducted by Kayanula and Quartey (2000). The relationship between the sectors of small and medium-sized entrepreneurship, and economic growth in Brazilian microregions was described in the work of Cravo (2010).

The research of Jeppesen (2005) covered the issues of improving competitiveness, and providing sustainable growth of micro, small, and medium-sized business.

2. METHODOLOGY AND INFORMATION

Theoretical and methodological basis for the research is presented by analytical and op-ed articles on the issues of Russian business. The scope includes formation of small and medium-sized business structures, features of interaction between small and medium-sized, and large business, institutional aspects of infrastructural support regulation among small business, study of business success, analysis of large business sectoral composition. Methodological toolkit for the article is presented by general-science methods including comparative analysis, graphical analysis, induction, deduction, synthesis, systematic approach, economics and mathematics methods of research. Information base for the research consists of financial and economic reports of Russian enterprises for the 2013-2017. Data is provided by The First Independent Rating Agency (Fira.pro).

3. RESULTS

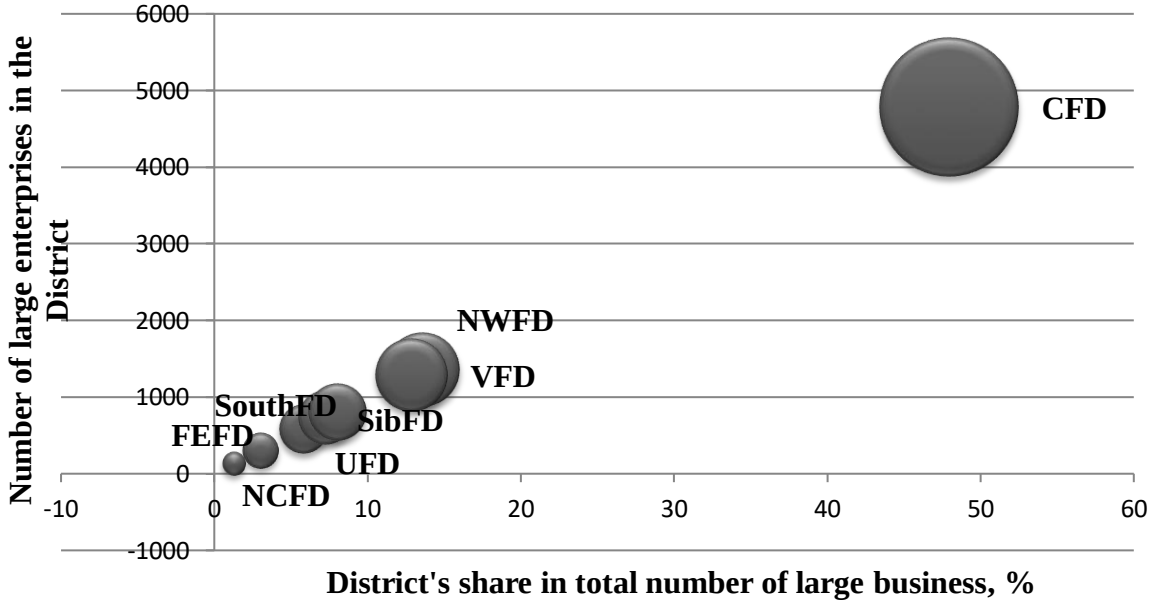
In order to draw representative samples of small, medium-sized, and large business, based on the level of business scale, the authors use the indicator of the annual net proceeds raised by enterprises (goods, services). It should be noted that during the period 2013-2014 enterprises with total income of ≤ 400 million rubles were classified as small business, medium-sized business was identified by income of ≤ 1 billion rubles (2007). In 2015-2017 threshold values of annual income for small and medium-sized business increased by half: ≤ 800 million rubles and ≤ 2 billion rubles respectively (2015). Taking into consideration absence of legislative criterion distinctly determining large business, the research regarded all the enterprises with total income of 1 billion rubles in 2013-2014, and 2 billion rubles in 2015-2017 as large business. The article does not cover the period of 2018, because at the moment when research was held information and analytical service Fira.pro did not provide the data. Spatial distribution of business among Federal Districts of The Russian Federation in 2017 is presented by the Figure 1.

Figure 1: Spatial distribution of business among Federal Districts of The Russian Federation in 2017

Source: Calculation of the authors on the basis of data provided by Fira.pro

Analysis of Figure 1 leads us to the conclusion that spatial distribution of business among the Federal Districts during the considered period is of heterogeneous nature. Almost one-third of all business is concentrated in Central Federal District, while distribution of the remaining enterprises among the Districts is even and slightly varies (band of fluctuation - 8,9 – 17,5 %). Exceptions are the Far Eastern and North Caucasus Federal Districts, located further from the center. And furthermore, business distribution between the Districts in 2013-2016 differs only 0,1-0.5% (proportion of total numbers of enterprises) from 2017 and can be called identical. That is why this period does not have graphic presentation. Next step is to examine the issue of business distribution among the Federal Districts in more detail within the framework of large, medium-sized, and small business. Figure 2, Figure 3, and Figure 4 represent regional distribution of large, medium-sized, and small business respectively in 2017.

Figure 2: Distribution of large business among the Federal Districts in (the size of the bubble defines the number of large enterprises in the District)



Source: Calculation of the authors on the basis of data provided by Fira.pro

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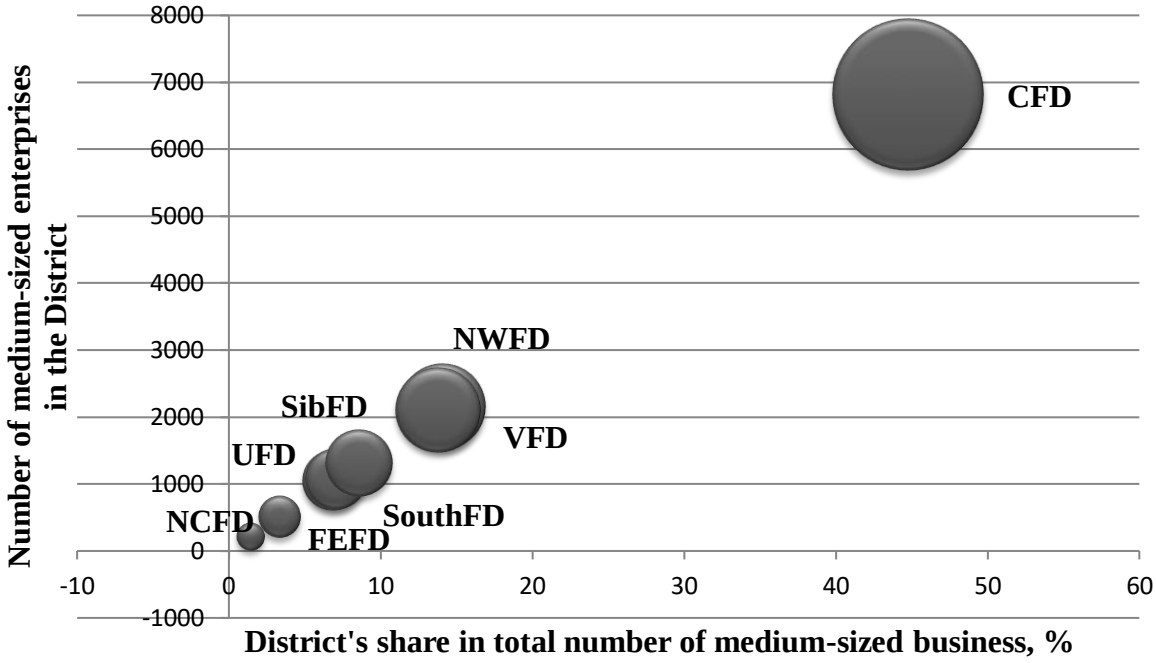
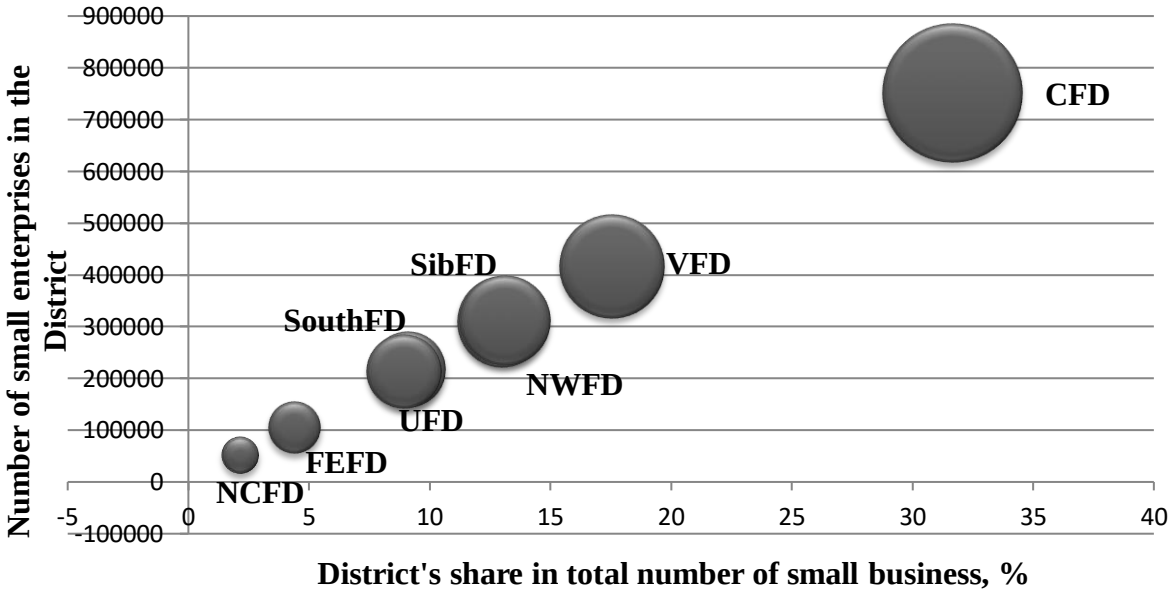
Figure 3: Distribution of medium-sized business among the Federal Districts in (the size of the bubble defines the number of medium-sized enterprises in the District)



Source: Calculation of the authors on the basis of data provided by Fira.pro

Figure 4: Distribution of small business among the Federal Districts in (the size of the bubble defines the number of small enterprises in the District)



Source: Calculation of the authors on the basis of data provided by Fira.pro

The picture of the regional business distribution in every category of business (large, medium-sized, and small) is quite predictable. The Central Federal District occupies the leading position with the share of 48% in large business, 45% in medium-sized business, and 32% in small business. The Northwestern and Volga Federal Districts show second largest business concentration and rank second. The third place is shared by the Southern, Urals, and Siberian Federal Districts. Minimal business concentration is observed in the North Caucasus Federal District, and Far Eastern Federal District.

But despite the differences in geographical business distribution, the regions have one in common. The vast majority of enterprises are represented in wholesale-retail trade. Analysis of the data on the number of small, medium-sized, and large enterprises in 2013-2017 demonstrates positive trend in 2013-2014 in every Federal District. However, the growth of the threshold values of annual income for small and medium-sized business in 2015 resulted in redistribution of business from one category to another. Some medium-sized enterprises transitioned to small business, and some large enterprises – to medium-sized business. Redistribution of Russian business from one category to another is demonstrated in the Table 1.

Table 1: Redistribution of Russian business in 2015-2017

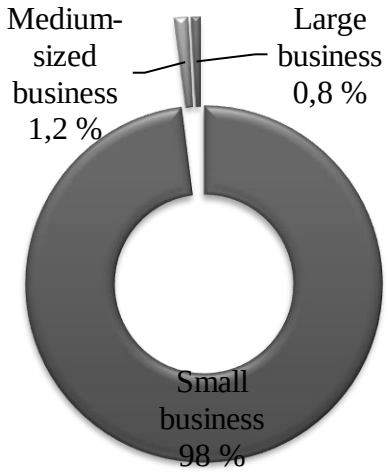
Federal District	Small business		Medium-sized business		Large business	
	+, - ⌂	%	+, - ⌂	%	+, - ⌂	%
Northwestern Federal District (NFD)	9440	1,1	-5412	-47,4	-4027	-51,8
Central Federal District (CFD)	30060	1,4	-16882	-46,0	-13181	-49,5
Volga Federal District (VFD)	9566	0,8	-5653	-49,0	-3914	-52,5
Southern Federal District (SouthFD)	4518	0,7	-2571	-46,6	-1947	-54,2
Urals Federal District (UFD)	4696	0,8	-2739	-48,1	-1957	-49,6
Siberian Federal District (SibFD)	5831	0,7	-3440	-48,6	-2391	-51,6
Far Eastern Federal District (FEFD)	2457	0,8	-1488	-49,5	-969	-52,5
North Caucasus Federal District (NCFD)	1197	0,8	-752	-53,0	-444	-55,8

Source: Calculation of the authors on the basis of data provided by Fira.pro

Analysis of the Table 1 leads us to a number of conclusions. First, the rise in number of enterprises could be seen only in small business with 1,4% growth in the Central Federal District. Slightly smaller growth of 1,1% is demonstrated by the Northwestern Federal District. The remaining regions show 0,7-0,8 % of growth rate in small business. Second, number of enterprises in medium-sized and large business in comparison with small business is in decline. The North Caucasus Federal District demonstrates the most dramatic decrease (-53% in medium-sized business, -55,8% in large business). Thus for the period 2015-2017 the number of medium-sized and large enterprises among all the Federal Districts had almost been halved. At the same time it should be noted that the enterprises mentioned above did not go out of business, they just transitioned from the categories of large business and medium-sized business to the categories of medium-sized and small business respectively. Russian business structure couldn't avoid the consequences of such transitions. In particular, in 2017 the share of medium-sized and large business in total number of enterprises was half the figure in 2013. The structure of Russian business in 2013 and 2017 is represented by the Figure 5 and Figure 6 respectively.

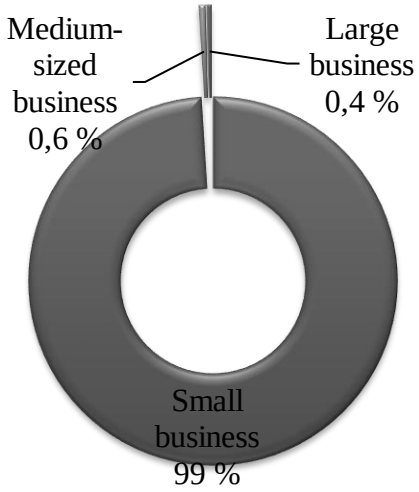
Figure following on the next page

Figure 5: The structure of Russian business in 2013



Source: Calculation of the authors on the basis of data provided by Fira.pro

Figure 6: The structure of Russian business in 2017

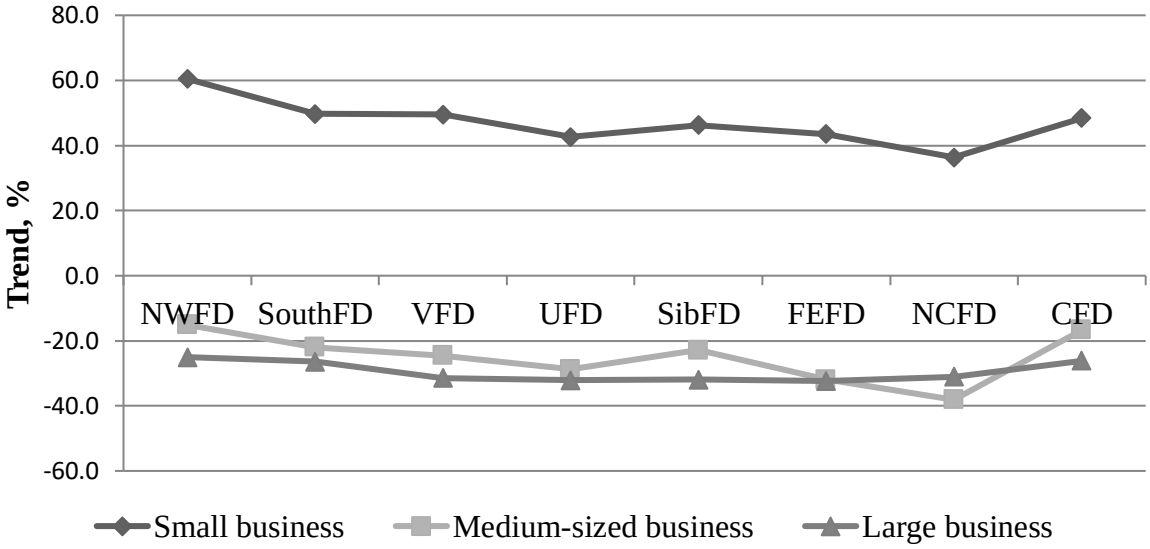


Source: Calculation of the authors on the basis of data provided by Fira.pro

Based on the data from the Table 1, and the Figure 1-Figure 6, overall trends in number of small, medium-sized, and large business among the Russian Federal Districts for the period 2013-2017 are presented in the Figure 7.

Figure following on the next page

Figure 7: Trend in the number of small, medium-sized, and large enterprises within the Russian Federal Districts in 2013-2017



Source: Calculation of the authors on the basis of data provided by Fira.pro

The Figure 7 allows us to make a number of conclusions. First, all the Federal Districts show growth only in small business, wherein the biggest numbers are demonstrated by the Northwestern Federal District (60,4%), the lowest – by the North Caucasus Federal District (36,4%). The other Districts demonstrate growth ranging within 43,5-49,7 %. On average the number of enterprises in 2017 grew by 48,8% in comparison with 2013. Second, the number of medium-sized and large enterprises decreased, in particular, decline was most pronounced in large business, reduced by 28%. The biggest decline (almost one-third) was demonstrated by the Urals, Siberian, and Far Eastern Federal districts. The average rate of decrease in medium-sized business in Russia reached 20,5%. Thus, the biggest reduction was observed in the North Caucasus Federal District with 38,1% decline, and the lowest – in the Northwestern Federal District with 15,1% decline.

4. CONCLUSION

The results of the research lead to certain conclusions. First, heterogeneous nature of spatial business distribution within the Federal Districts is clearly observed. Almost one-third of all the enterprises are concentrated in the Central Federal District, while the distribution of the remaining enterprises among the Districts is even and slightly varies (band of fluctuation - 8,9 – 17,5 %). Only two districts differ significantly which is explained by their remoteness from the center with total 6,6% of business. Second, the article reveals uneven distribution among the Federal Districts in every category (large, medium-sized, and small). The Central Federal District occupies the leading position with the share of 48% in large business. At the same time the share of medium-sized and small business is 45% and 32% respectively. Relatively even distribution of every business category is observed only in The Volga and Northwestern Districts. Third, the reason for redistribution of business between the categories in 2015-2017, which ultimately affected the structure of Russian business, was detected. Its cause lies in the growth of the threshold values of net proceeds for medium-sized and small business. When this indicator doubled the share of medium-sized and large business halved. Fourthly, change in number of small, medium-sized, and large enterprises within the Federal Districts during the analyzed period is established. Nevertheless, only small business demonstrates positive dynamics with average growth by 48,8%.

As for medium-sized and large business, average decrease by 20,5% and 28% respectively is observed in all the Federal Districts. The research reveals the current structure of Russian business. It's difficult to assess whether this structure is effective or not. It requires, first of all, the exploration of what "the effective business structure" is, what are the criteria for the effectiveness; it's also necessary to determine quantitative and qualitative indicators of effectiveness etc. To a first approximation to the issue it may be assumed that business structure is effective when every sector makes a maximum contribution to the GDP which demands at least creation of maximum added value independently of the size of business. Business must be of a productive character, while wholesale-retail trade prevails in the modern sectors of medium-sized and small business in Russia. Furthermore, small and medium-sized enterprises need effective platforms and models of collaboration with large business; it must be done at the state level. The State support needs systematic approach, mobile measures are no longer effective. Only in this case all measures will have a synergistic multiplier effect.

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DESIGN AS A DEVELOPMENT FACTOR FOR THE CORPORATIVE CULTURE AND BUISENESS THINKING

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ABSTRACT

In a turbulent economy, it is important for business to achieve relative stability and positive dynamics. Design as a technology of creative thinking and a way to form a rational organized environment can contribute to these processes in at least two important aspects. As an activity in creating of different aesthetic forms, it helps to get a corporate culture and business communications through a semantically intelligible corporate identity (or a visual identification system), ensures harmonization of space, ergonomic workplaces, memorability of products, environmental friendliness of their packaging and, ultimately, brand uniqueness. As a way of creative thinking, it teaches specialists of various professions non-standard moves and is increasingly used by businesses that require unexpected decisions. Both aspects are relevant for the competitiveness of Russian companies, which do not use the design potential fully, being satisfied with not completely professional or replicated graphic images placed on stocks. Such quasi economic moves are in fact dead ends and rarely justify themselves. Successful design always has a systemic character, each of its elements is determined by the tasks of the company. This cannot be taken into account by accidentally found solutions that are not capable of development and do not have the necessary conceptuality. The solution could be cooperation between business and universities that are developing today new design approaches based on scientific data and experimental results, especially at the level of master's programs. The article provides an overview of foreign sources about design thinking and two cases on a professional and unprofessional approach to company design.

Keywords: *business communications, company image, competitiveness, conceptuality, corporate culture, corporate identity, creativity, design, design form, design rationality, design thinking, professional design*

1. INTRODUCTION

Appearing at the turn of the 20th century as a special profession and a unique type of project activity, design today is rapidly expanding the space of influence. In the 2000s the value of design thinking for solving issues of business, management, urban development [] was recognized, moreover, in situations where a move away from inefficient algorithms and too rigid structures is required. Design thinking is associated with: focusing on the needs of specific people or groups of people; clear goal-setting, creating a solution focused on a specific task, from commercial to social, from managerial to environmental; team work; clear timing. At the same time, in terms of the value and genetics, design discourse is close to antique design thinking, Greek technology, which proceeded from the idea of the identity of utilitarian and aesthetic. Useful is rated as beautiful and constitutes its essence. Aesthetics of a product arises as a result of a rational comprehension of the form that best suits its purpose. Among other things, design harmonizes human life. From the first steps of the work, it is necessary to explain two meanings of the word design in the Russian-speaking context. The former is associated with a special type of project thinking, the latter is concerned with the special qualities of a product or a system of products that this thinking generates [2]. Although the authors of [14; 15; 29] insist on the autonomy of design thinking, its ability to ‘transform’ into intangible forms and structures, we are convinced that the search results require appropriate subject design: thus, a management decision will be easier to implement with appropriate infographics that tell

people about it; thus, the company's philosophy is visualized in adequate compositional and style elements of the corporate identity, forming a dense informational whole. Both interrelated aspects are equally relevant for the competitiveness of modern Russian businesses and goods. In addition, in the Russian-language texts, design refers to the entire professional sphere, and the subsystem of culture, in which its products are presented, and even minor actions of a design character. However, we will focus only on the two aspects mentioned above, united by the tasks of producing creative rational formal solutions.

2. METHODOLOGY

The objective of the study is to prove that in the modern world the use of design thinking and its products significantly affects the efficiency and competitiveness of the company. The complexity of the phenomenon studied and the space of its manifestations determines the complex nature of the methodology. The first block are the works of professional designers, in which the basic characteristics of design thinking and its products are highlighted: O. I. Genisaretsky [6], V. L. Glazychev [7], D. Norman [19], V. Papanek [20], P. Rand [23], J. Frank [5]. Despite the different times of their appearance, regional and cultural differences, they are united around the interpretation of design as a rational systematic type of creative activity to produce aesthetically perfect, harmonious objects in an industrial way. The result of the design is a material-subject form or its virtual equivalent. Only the presence of all the mentioned qualities in the project allows us to attribute it to 'design' itself. Non-specialists, customers need to understand that there existed and exist other, non-designer, ways of creating objectivity (engineering, craft, technical creativity, decorative and applied art), whose products are evaluated according to criteria other than systematics and practicability. This will help in the formation of technical tasks by the designer and increase work efficiency. The second block is the research of design thinking itself, its methods and techniques, the ways of its development and application both in the process of creating forms and for communication with customers and partners. This includes the works of T. Brown [1], R. Williams [29], Lidtka and Ogilvy [14], Shaughnessy A. [25], S. Weinschenk [30] and several others. Lawson B. studies design thinking especially deeply, showing the mechanisms for generating new ideas [11; 12]. Coming into any field, designers take into account its laws and its specifics, and economics is not an exception. The third methodological block consists of work on business communications and their visual and subject elements, such as the visual image of the company (I.V. Aleshina, P. Katlip, G.G. Pocheptsov, A.N. Chumikov, etc.) and its products, logo, corporate identity (I. M. Sinyaeva), Internet sites, corporate culture (G. Dowling, F. Kitchen, V. A. Moiseev, E. Shein), etc. Without knowing their goals and functions, we cannot determine the boundaries of the use of design tools in specific problem situations. All the approaches mentioned are united by the cultural-semiotic methodology of design research, which we tested earlier [3]. It presupposes the understanding of the sociocultural conditionality of design forms, their value-semantic content and perception, their existence in certain sociocultural environments. In addition, it is adequate to the declarations of 21st-century designers that postulate human value as fundamental to design [30]. This toolkit ensures that the basic design characteristics defined by theorists and practitioners are brought into line with the needs of companies interested in their development and promotion, and therefore, the improvement of practical forms of implementing business ideas through design.

3. RESULTS

An analysis of design thinking and its products shows the sources of non-triviality and novelty of these products. Setting on pragmatism makes the process realistic, avoiding fantasies. The systematic approach eliminates the duplication of moves. The aesthetic nature of the design leads to its coincidence with the idea of interactivity.

Installation on the industrial implementation of the plan and circulation reduce the cost of many design products. These qualities coincide with the main tasks of modern businesses, which are transparency (E.V. Kondratiev), attractiveness for partners and consumers, recognizability and memorability, identity (M. Rowden), customer focus (J. Mitchell), and interactivity. The definition of industrial design by T. Maldonado has been analyzed and its relevance to other types of design at the present stage has been shown. It is confirmed by examples that for a lively and efficient corporate culture of a company, a system design of all its elements is needed, which consistently expresses the basic values of this company, as it is recorded in its mission and philosophy. The ten criteria for good design, deduced by Dieter Rams in the middle of the 20th century, can become a criterion for the selection of forms. For the first time, a comparative analysis of the corporate identity and the system of visual identification of a company has been carried out, including in terms of their economic and communicative effectiveness. It has been proved that for the productivity of business thinking it is not enough to use a standard set of thinking techniques (brainstorming, mind mapping, morphological maps, polls, etc.). They are made more specific by working with forms and images, while their use in other areas is accompanied by work with the word.

4. CORPORATE CULTURE DESIGN

Even before a company enters the market, its main identifiers, such as a logo and corporate identity [13], are needed. Over the past 2-3 years, more and more attention has been paid to the design of offices as zones of diverse activities and interactions; the rather faceless and formally uniform concept of open space is being replaced by a new vision of a workspace acting as maximally emotional and individualized, taking into account the interests of employees [17]. However, the most important thing in this segment is the accurate and stylish visualization of the company's values. Since the term 'design' is often interpreted broadly, not only in Russia as we are talking exclusively about professional activity, it is necessary to once again show its basic, fundamental qualities. In our opinion, they were deduced in the definition of industrial design by Thomas Maldonado in 1964. According to him, design 'is a creative activity whose aims is to determine the formal qualities of objects produced by industry. These formal qualities are not only the external features but are principally those structural and functional relationships which convert a system to a coherent unity both from the point of view of the producer and the user. Industrial design extends to embrace all the aspects of human environment, which are conditioned by industrial production' [16]. Although Maldonado wrote exceedingly about industrial design, he managed to find characteristics for many other types of design, the relevance of which only increases with time. Let us briefly explain them. They are the following:

- the definition of design as the creation of forms and objects (rather than ideas);
- understanding the creative nature of design activities, including the possibility of creating not only new forms, but also new technologies, a new point of view on the use of existing material;
- fixing the connection of the profession with the conditions of large industrial production, tending to circulation;
- the definition of design as an aesthetic activity (hidden in words about unity, since only the whole is experienced by us as expressive or beautiful);
- understanding design as targeted activity to satisfy the needs of society and a man.

These features will be taken into account by us in the analysis of existing works and recommendations for subsequent design.

4.1. Expression of the idea of the company in its logo and corporate identity

In a culture that tends to visualize all of its elements, the company's graphic markers are gaining special weight. Corporate culture, which is part of the general processes, is not an exception [13]. As we showed earlier in relation to territories [3], the visualization of the characteristics of any economic entities in the modern world occurs in two ways: structuralist (when images and values are introduced into the space of a city, a company, a brand) and phenomenological, involving the identification of these images in the predesign research. Without repeating the criticism of the first approach, let us emphasize once again how important it is to 'listen' to real processes and express their originality and spirit. Borrowing color combinations, symbols, configurations from other areas of business or regions can lead users (as well as employees) to disorientation, the loss of a sense of ownership. Let us give an example of the logos of two banks, clearly made by an 'external' contractor (Fig. 1). These institutions exist in different regions of Russia, but neither the regions themselves nor their socio-economic or natural features can be identified by logos. The composition with the emphasis on the active diagonal is almost the same and suggests an umbrella brand. The shades of colors, if you look at photos on the Internet, change in different media. At the same time, warm light green indicates, for instance, the spontaneity of development [2, *290*], and a darker blue-green indicates calm and peace [2, *291*]. What are the creators of the logos and the banks themselves trying to say? Why do they work with a letter that speaks about themselves and not about their relationship to the profession or clients?

Figure 1: Khakass Municipal Bank. Avers Bank, Kazan. Logos. 2020. No authors reported

Source: https://kbhmb.ru/; https://aversbank.ru/

Solutions like the ones above are typical and lead to standardization, rather than enhance identity. It is justified in its own way, since it demonstrates belonging to a certain sector of the economy. But in reality, the expression of the company's idea does not come down to a simple illustration of each of the values. The integrity of the solution, to which the design gravitates, allows us to fix what today is increasingly called the 'spirit'. Design thinking algorithms require a deep study of the pre-design situation, with the goal of determining the expectations and needs of the target audience. Sociological analysis affects, first of all, studying the parameters of the consumer audience, its interests, preferences, expectations and opportunities. In the case of a project not too large-scale, the designer can use statistical data or independently conduct small polls on various problems. Questionnaires with open-ended questions, in addition to obtaining quantitative information, allow you to expand the range of vision of the pre-project situation. Along with surveys, these can be participatory actions, which are gaining more and more popularity today. Sociocultural analysis involves the study of the system of values and lifestyles of design recipients, placing axiological indicators in the first place – the attitude to style, fashion trends, the orientation to elitism or democracy, priority quality characteristics. Economic analysis ensures the adequacy of investment in the project. The forgotten meaning of the word 'expressive' – as an expression of a thought, an idea, is the best suited to design. Its aesthetics, its expressiveness is the reverse side of an individualized and easy-to-use form, developed in the process of interacting with users, both internal (employees) and external (customers). Due to the coincidence of many value-ideological and social parameters of the middle of the 20th century and today, the ten rules for good design by Dieter Rams (b. 1932), the professor of design at the University of Fine Arts in Hamburg, can become a criterion for the selection of forms found at all stages of design.

They were actively used and still are used, for example, by industrial designers in the search for rational, balanced solutions. He defines that: good design is innovative; makes the product useful; is aesthetic; is imperceptible. Good design makes the product easy to understand; it is honest; durable; consistent, down to the smallest detail. Good design is environmentally friendly, moreover, D. Rams has in mind not only the environmental position, but also the protection against the pollution of the visual environment. Finally, good design is, to the extent possible, a minimum of design [4]. When designing is conducted competently, focusing on the interests of society and people, the originality of the design product resists stereotypes and impersonality, but remains understandable and spiritually close to the audience. A company with this design will be perceived with interest and with a greater degree of loyalty.

4.2. Consistency in design as a guarantee of corporate identity

An important aspect, noticeable from the first steps of the analysis of company design, is the systematic presentation of oneself in the elements of visual navigation, identification, setting. Design initially has a spontaneous systematic approach, developed in an already identified and consciously applied form by representatives of ASRITA (All-Union Scientific Research Institute of Technical Aesthetics, created in 1962) [6, 7, 10]. In parallel with them, system design is used by US designers – J. Nelson [18], P. Rand [23], V. Papanek [20]. In turn, for its identity, it is important for the company to have a multi-level system of elements, from business cards and a website to the design of an exhibition exposition or packaging of goods [24]. System-forming elements (color, color combinations, materials, textures, etc.) cannot be replaced by random inserts, destroying the functional-aesthetic whole, and making it meaningless. The properties and connections of the system, which seem strong, can be destroyed by the intrusion of a random element [21]. This is especially true of the visual sphere, since everything that we see is 'obvious' to our consciousness and is not subjected to further critical reflection. Long (and often expensive) work on a product is endangered in this case. A well-designed office interior can be 'destroyed' by a crack in the ceiling or by an absurd calendar on the wall. Let us recall in this regard of consistency as one of the most important qualities of good design, according to D. Rams. The relevance of such a sequence is illustrated by the process of transition of companies, cities, large brands, mega-events into the format of visual identification systems. Where corporate identity was previously used, today more varied and flexible products are created, the characteristics of which are shown in Table 1.

Table 1: Comparative analysis of corporate identity parameters of a company and visual identification system. Author: T. Yu. Bystrova

	Corporate Identity of a Company	Visual Identification System
The nature of the system	Closed, tends to statics	Semi-closed, tends to dynamics and development; it is possible to introduce new elements that correspond to the initial characteristics
The number of elements and colors	Minimum. Two primary colors, without shades and gradients	A wide palette that provides the choice of a combination for labeling new products or units
Emotionalization, attractiveness and memorability	Strengthened due to the introduction of the character	Implemented due to the properties of the system itself
Continuity	New elements are often developed 'from scratch' and mechanically attached to the existing ones. Simulated systematics	New elements are derived from the original palette of shapes and colors.
Economic feasibility from the introduction	The need for restyling and new costs in the case when the business has reached a new qualitative level	System development, provided by its initial flexibility

An example of Coca Cola's transfer of a 'hard' corporate identity into a more flexible visual identification system is shown in Fig. 2. A variety of tasks performed by the company required a variety of solutions up to a change in the color scheme. At the same time, the backbone elements have remained almost unchanged for decades, ensuring the continuity and enhancing the brand value.

Figure 2: Corporate identity and Coca Cola visual identity system (Logo)
The company office is in Spain (Design: Stone)

Source: https://ru.wikipedia.org/
Source: https://www.stone-dsgns.com/ru/portfolio/

5. ROLE OF DESIGN THINKING IN BUSINESS PROCESSES AND PRODUCTS

Characterizing design thinking, a famous theoretician and practitioner T. Brown says that it is characterized by empathy, integrativity, a desire for experiments and collaborations, as well as optimism. He presented design thinking in the dual unity of implementation and inspiraton [28, *4-5*]. Moreover, he is absolutely right that the result of design thinking most often is not an accidental 'dazzling diamond', but the result of many and varied searches using special techniques. B. Shervin emphasizes the creative nature of design, speaking about his ability to solve organizational and business problems [27]. D. Maeda directly connects startup successes with the mastery of design techniques [15]. Tim Brown notes: '... time has come to transfer design skills to all parts of the organization and up to the leadership level. Everyone can apply design thinking. There are no reasons why any person, including a 'D-level' person – an executive director, a financial director, a technical director, an operations director – cannot learn these skills' [1]. He shows by example the work of the company, where, when and to whom design skills can be useful. M. Bella and B. Hannington write the work 'Universal Design Methods' [8], thereby emphasizing the applicability of these design tools by different specialists. They designate stages of design in a slightly different way compared to J.K. Jones or T. Brown. However, the general logic is retained by all specialists: 1) Planning, determining the scope and wording at this stage are studied and the project parameters are determined. 2) Research, synthesis and determination of the consequences of design. 3) The development of the concept and the creation of the first prototype – the stage includes the participation and generative activity of a designer. 4) Evaluation, improvement and production – the stage involves activities based on repeated testing and receiving feedback. 5) Launching and monitoring; at this stage the design quality is checked to ensure its readiness for the market and public use, and the current review and analysis is carried out in order to adjust the chosen direction if necessary' [8].

Modern design methods differ significantly, for example, from the ordered search method described by B. Archer in the middle of the 20th century [10, *119*]. This method, which is largely oriented towards mathematics, turned out to be applicable only when solving clearly formulated problems with unchanged initial data, and the modern world, like modern design, lives and acts in conditions of a high degree of uncertainty. Moreover, following this path, it is difficult to achieve an original solution [14], which appears to have high demand in the modern world [14, *5*; 26]. However, originality, according to B.Lawson, of a designer is a synthesis of rationality and intuition [11]. In all searches, experts are unanimous in the necessity of the stages of divergence (search for ideas) and convergence (the selection of an optimal idea). Unlike marketing, PR, engineering, and other areas, at both stages it is necessary to handle forms and structures, rather than concepts or associations, as creative thinking techniques sometimes advise. Only work with the form is ultimately effective. A number of Russian companies are already using design thinking in their activity [22]. For example, the X5 Retail Group is implementing the 'Accessible Environment' project, according to which the company will re-equip existing and new 'Pyaterochka' and 'Perekrestok' stores for people with disabilities. At the same time, not only new graphic and subject forms (advertising, merchandising) were found, but also new ways of communication between people (for example, 'The basket of the good', which one person can acquire for another person).

6. CONCLUSION

Today, designer competencies are becoming increasingly important in the context of business development. They can be possessed not only by professionals. For the leader, these skills are important when evaluating your own company and its products, communication with the team (visualization of basic values, infographics to convey new ideas), understanding the strengths and weaknesses of competitors and partners. For mid-level professionals, design thinking creates opportunities for high productivity, finding innovative ideas and solutions. It also helps the productivity of contacts with designers, advertising specialists, for instance, when writing technical tasks or briefs. In this case, the skill of drawing is desirable, but not necessary [5]. Design streamlines and organizes all aspects of the life of the company. Its foci, like no others, coincide with the goals of the business. This means that the partnership of business and design must be consistently strengthened.

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GRP, INVESTMENTS, AND TOURISTIC FLOWS IN RUSSIAN REGIONS – HOSTS OF MAJOR SPORTING EVENTS

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ABSTRACT

The tourism sector in Russia does not play a significant role in the development of the national economy. The tourism industry's share of GDP is still less than 2.5%. Russia occupies only 59th place in the competitiveness rating of the tourism sector, according to the World Tourism Organization (UNWTO). However, international experience shows a very high profitability of tourism, comparable to the oil industry. Besides, in the 21st century, many major international sports events took place in Russia: the Universiade in Kazan in 2013, the Olympic Games in Sochi, 2014, and the World Cup in eleven cities of Russia in 2018. As a result, a modern tourist infrastructure arose (new airports, roads, hotels, tourist routes, and objects). Further use of the created infrastructure for the development of domestic and foreign tourism may become a priority for the national economy. The development of tourism in Russia is quite an achievable task. Russia ranks fifth in the world in terms of unique natural sites and ninth in terms of cultural heritage sites. It is necessary to create a model for the development of tourism, which will allow getting a multiplicative income from investments in tourism and sports infrastructure. The purpose of the article is to assess the impact on the economy of the Russian regions of major sporting events. The focus of the study is on indicators of economic development: gross regional product and investment in fixed assets, as well as indicators characterizing the development of the tourism sector (the flow of tourists, the success of firms in the service sector - restaurants, hotels, recreation centers). The work based on methods of statistical analysis. The article used data from official statistics, as well as specialized ratings. As a result, the influence of major sporting events on the regional economy in Russia is limited and does not lead to sustainable economic development at a faster pace. Recommendations for federal and regional governments are provided based on the analysis.

Keywords: *GRP, major sport events, touristic industry*

1. INTRODUCTION

Development of tourism in Russia – the process which is still low-operated and insignificant. The share of the tourism industry in GDP makes no more than 2.5%; Russia takes only 59th place in the rating of competitiveness of the tourism sector, according to data of the World

Tourism Organization (UNWTO). At the same time, the international experience shows very high profitability of tourism comparable to the oil and gas industry. Significant international sporting events (A Universiade in Kazan in 2013, the Olympic Games in Sochi, 2014, the FIFA World Cup in 11 cities of Russia in 2018 and other) took place in Russia in recent years. As a result, considerable sport and tourist infrastructure was created (the new airports, roads, hotels, tourist routes and objects). Further use of the created infrastructure for the development of internal and external tourism has to become the priority direction of the national economy. Development of tourism in Russia – quite achievable task as our country takes fifth place in the world on the list of unique natural objects and the ninth in the number of objects of cultural heritage. It is necessary to use those investments in tourist and sports infrastructure (about 1.2 trillion rubles were invested only in holding the 2018 World Cup), which carried out. Development of tourism will help Russia to diversify the economy and to stop being dependent on energy and natural resources, thus advancing business in other sectors interfaced to tourism. The task which is set by the Russian President for our country is to be ready to answer "big challenges." For this purpose, the economy has to be the more diversified, and the most important, the institutional basis for the accelerated development of the Russian business, has to be created. Tourism is presented not by large corporations, but generally small and medium business. Financial institutions of business support are extremely weak today. An adequate environment for the development of medium-sized and small businesses not created. The role of the banking sector is often limited only to simple financing of small and medium business, and under extremely unacceptable percent. As a result, one of the main instruments of financial support of business (the instrument of bank crediting) and that works with an incomplete return. Economic growth demands innovations and investments which will appear only as a result of business activity. The government also should give direct and indirect financial support and also additional incentives for business development.

2. LITERATURE REVIEW

K.O. Butayeva, S. Weber, D.V. Davydov (2018) analyzed the economic and social efficiency of important sports events. They offer a classification of effects of sports events on material and non-material and investigate modern trends in the economic influence of sport on tourism. P. Skandizzo and M. Perleoni (2018) study the influence of the Olympic Games on the regional economy, including sustainable economic development aspects. Their paper classified the existing methods of the assessment of the sporting mega-events. The authors provide empirical results, using cost-benefit analysis both on ex-ante and ex-post period. The model includes different sets of effects on the hosting region. K. Swart, R. George, J. Kassar (2018) investigate the experience of the FIFA World Cup 2014 in Brazil. Their research considers such factors as crime risks, regional brand, availability of information, and the number of future repeat visits to the city. The main factors are criminal situations and an informational search. These results can help in making the destination brand and to change the perceptions about the city of Rio de Janeiro. Meurer R. and Lins H. (2018) analyzed the results of hosting the World Cup - 2014 and the Olympic Games -2016 in Brazil. They calculated that the World Cup made an increase of about 50% in receipts during the two months of the event. The financial result of the Olympic Games was an increase of about 28% for one month. However, in the following month, there was a fall of almost the same amount. So the study shows that these effects were very shirt-term. Yao Q. and Schwarz E. (2018) explores the impacts of the World Golf Championships HSBC in Shanghai. The study based on interviews with 1047 residents. The authors revealed six different factors that impact the championships. They show that the events did not affect the life of the residents much. Nevertheless, the research analyzes the resident's perceptions of sporting events. It is necessary to make an effective marketing strategy and to satisfy the needs of the residents and the tourists.

Muller M. and Gaffney C. (2018) create an analytical matrix for comparing the impacts of the Olympic Games and the FIFA Men's World Cup on the cities. The authors use this matrix to analyze six recent sports mega-events 2010-16: two Summer and two Winter Olympic Games, and two FIFA Men's World Cups in South Africa and Brazil. They revealed that the political and economic contexts also most impact on future development. R. Pouder and J. Clark and others (2018) explore the role of destination marketing organizations. They interview several groups of DMO based on a five-step analytic approach. C. Vierhaus (2019) studies the effects of mega-sporting events on the development of international tourism. The author revealed this effect only for the Summer Olympic Games. R. Mhanna, A. Blake, I. Jones (2019) suggest the strategy for spreading tourists beyond the hast city. They study the experience of the main stakeholders of the London 2012 Olympic Games., L.A. Gil-Alana, O.H. dos Santos Figueiredo, P. Wanke (2019) analyze the impact of the London Olympic Games, Brazil World Cup, and Rio Olympic Games on the regional economic growth. The authors revealed that developed and developing countries show different results.

3. ECONOMIC CONSEQUENCES OF THE MEGA SPORT EVENTS IN RUSSIA

3.1. Main positive results of the Sochi-2014 Olympic Games

External transformation of the city. Several hotels and apartments located there. The number of rooms during preparation for the Olympic Games grew from 5000 to 55000. «The Azimut hotel complex» became the largest in Europe and it contains 3600 rooms. The rooms in hotels «4–5 stars» increased by ten times in six years. The area of «More mall,» the largest shopping mall in the city, is 168 thousand sq.m. Greater Sochi stretched for 145 km along the coast of the Black Sea. Also, the image of the city changed, new roads were built up, many squares appeared, the city began to look as expensive European resorts. The budget of construction of the mountain resort of Rosa Khutor made 350 million dollars at design cost, however, in the course of construction actual project cost grew almost six times and was 2.07 billion dollars. The resort works at the territory where it is possible to spend time at all seasons of the year perfectly. The cost of construction of the main Olympic objects is over 154 billion rub. The organizing committee of the Olympic Games earned on sponsor's and license contracts about 2 billion dollars; the most significant part was provided by the state sponsors. The small companies also gained income from the sale of the official goods of Sochi 2014, estimated at 500 million dollars.

3.2. Universiade-2013 results in Kazan

The Universiade in Kazan became the largest in the history of the World student's games. It broke the records of the previous Universiades: by the number of participants (11,778 people), by quantity of sports (27), quantity of the held medal events (351 sets), the arrived guests and tourists (more than 150 thousand people), the audience who visited sporting events (about 800 thousand people) and also on coverage of TV viewers (3 billion people). The major sporting events are the drivers of regional development and they cause long-term positive changes in social and economic spheres of the region. Preparation for the Universiade brought to Kazan 228 billion rubles of investments. Large-scale modernization of transport infrastructure, construction of the first line of the subway, a construction more than ten traffic intersections and several tens crosswalks, start of the Aeroexpress train, modernization of the international airport "Kazan," construction of the transit railway and the bus station, further updating of the rolling stock of land public transport is carried out. The Universiade promoted the realization of the tourist capacity of Tatarstan. During the Games, the region visited by more than 150 thousand tourists and fans from Russia and abroad. In 2012, 1.2 million people visited Kazan with excursion purposes, and by the end of 2013 this number increased to 2 million. The hotel infrastructure highly developed in Kazan.

The Universiade had a significant effect on the welfare sphere of life of citizens and guests of Kazan. The involvement of society into the cultural life of the republic increased. The Universiade allowed creating a large number of additional jobs for inhabitants of both the republic and the other regions. Within preparation and holding Games, the institute of volunteering was created: more than 77% of volunteers are inhabitants of the republic whose vast majority – aged people of 18-25 years. About 20 thousand (19,970) people were attracted on the Universiade as volunteers on a grant basis. In Kazan especially to the Universiade, 36 sports constructions were built.

3.3. 2018 World Cup results

Investments in the regions where matches were held in 2018 exceeded 9.5% of their annual volume. The total effect for 2013-2018 amounted to 952 billion rubles or about 1% of Russian GDP. Twelve stadiums, eleven airports and eight railway objects were built and renovated in 11 host cities. Almost half a million foreigners attended the event. 294 billion rubles is the total revenue from tourism. 315,000 new working places were created. Table 1 shows data about the impact of the Championship on the economy of the regions. The scale varies from region to region. On average, the impact of the World Cup is between 2 and 20% of the annual GRP, with tourism accounting for between 12 and 72% of total effect.

Region	Contribution of investments and operating expenses, billion rubles	Contribution of tourism, billion rubles	Effect to annual GRP ratio, %	Effect to annual GRP ratio, %
Moskow	164	126	2	44
Sankt-Petersburg	108	47	5	31
Samara region	65	10	6	13
Rostov region	62	10	6	14
Nizhny Novgorod region	60	9	6	13
Kaliningrad region	57	10	20	16
Volgograd region	40	5	6	12
Krasnodar region	18	47	3	72
Sverdlovsk region	30	11	2	26
Repuplic of Tatarstan	17	17	2	50
Republic of Mordovia	28	5	17	14

Table 1: The impact of the World Cup 2018 on hosting regions' GRP

4. METHODOLOGY AND DATA

The study uses the following methodological approach, to define the impact of the major sporting events on the hosting regional economies:

1. Analysis of the dynamics of main indicators reflecting the regional economic development (GRP and fixed investment) for two periods (before the decision about places form World Cup (2012), and after the decision)
2. Test hypotheses on the materiality of trend differences in these periods
3. Assess the state of tourism in the regions before and after the adoption of the relevant decisions and touristic flows after decisions in comparison with all-Russian trends.

The study used data of open sources: official statistics of Rosstat, as well as data of authorities responsible for the tourist sphere development. Regional data, data for the entire economy of the Russian Federation, data for the federal districts (average excluding the central region) used to estimate the macroeconomic indicators of the regional development. Comparison of these data will make it possible to conclude whether there are differences in growth trends in regions

- hosts of the mega sports events, and in the typical Russian regions (as well as on average in the country). The assessment was carried out by direct correlation of the average growth rate of the mentioned indicators (GRP and investments in fixed assets) in three periods of the Russian economy - before the crisis of 2008, from 2009 to 2012 (from the beginning of the crisis to the announcement of holding in the corresponding cities of the World Cup 2018) and from 2013 to 2017 - a period of intensive preparation for the World Cup. More recent macroeconomic data are not yet available. Two indicators used to assess the impact of efforts to develop the tourism industry - the volume of investments in the development of tourism infrastructure and tourism flows in the relevant regions. Visualization of the relevant dynamic series used for the analysis.

5. RESULTS

The average annual growth rate of gross regional product and fixed investment in three periods is calculated: (I) until 2008 (2001-2008), (II) before the announcement of the decision to hold the World Cup 2009-2012, and (III) after this announcement (2013-2017). The all-Russian trend is such that the average values of both indicators have significantly decreased from the first to the second period, and since the second period, there has been a smooth but tangible decrease. The same trend is common in the North-West and Volga Federal Districts. For the Southern Federal District, it is typical to maintain the growth rate in the third period at the level of the second, and for the Ural, on the contrary, after a significant recession in the second period, there is a tremendous growth rate in the third. It is noteworthy that the regions in which the World Cup was held repeat this trend (that is, after the announcement of the corresponding cities both the growth rate of GRP and the growth rate of investments in fixed assets decreased.) Exceptions are the Republic of Mordovia (by both indicators), as well as Kaliningrad, Rostov and Nizhny Novgorod regions (only by indicator the growth rate of investments in fixed assets). Other regions did not show additional activity; investment activity did not revive in comparison with average Russian and average district values. The growth can be explained by abnormally low values of the corresponding indicators in the second period (see table 2).

Table following on the next page

Region	Federal district	GRP, average annual growth rates			Investment in fixed assets, average annual growth rates			ratio of growth rates III/II	
		I 2001-2008	II 2009-2012	III 2013-2017	I	II	III	ВРП	ИОК
Russian Federation		1.248	1.102	1.085	1.323	1.094	1.085	0.985	0.991
Kaliningrad region	North-Western	1.291	1.103	1.095	1.387	1.017	1.095	0.993	1,076
Volgograd region	Southern	1.264	1.082	1.062	1.309	1.111	1.062	0.981	0,955
Rostov region	Southern	1.263	1.100	1.098	1.419	1.030	1.098	0.998	1,067
Krasnodar region	Southern	1.247	1.161	1.088	1.380	1.255	1.088	0.937	0,867
Republic of Tatarstan	Volga district	1.222	1.116	1.080	1.327	1.147	1.080	0.968	0,942
Nizhny Novgorod region	Volga district	1.240	1.094	1.084	1.417	1.072	1.084	0.991	1,011
Samara region	Volga district	1.222	1.076	1.076	1.276	1.088	1.076	1.000	0,989
Republic of Mordovia	Volga district	1.233	1.093	1.097	1.382	1.044	1.097	1.003	1,051
Sverdlovsk region	Ural	1.249	1.126	1.076	1.364	1.092	1.076	0.956	0,986
Average in North-Western district without St. Petersburg		1.226	1.111	1.081	1.307	1.125	1.081	0.972	0.960
Average in Southern district without Krasnodar region, Crimea and Sevastopol		1.257	1.096	1.094	1.379	1.061	1.094	0.998	1.032
Average in Volga federal district without Republic of Tatarstan		1.228	1.099	1.068	1.364	1.062	1.068	0.971	1.005
Average in Ural federal district without Sverdlovsk and Tyumen regions and autonomous area		1.238	1.064	1.094	1.393	1.003	1.094	1.028	1.090

Table 2: The growth of the corresponding indicators in the second period

A more in-depth analysis was carried out based on a comparison of the growth rate of selected indicators by hosting region and the average Russian values for the same periods (table 3). The color highlights the relations that reflect the best results of the region compared to the average Russian values. It can be noted that the situation changed for the better from the second to the third period on both indicators in the Kaliningrad and Rostov regions and in the Republic of Mordovia. In several regions, on the contrary, in the second period, the growth rate outstripped the average Russian, and in the third began to lag behind them. So, the decision to hold a major sports event had a deterrent effect on regional economic development. This applies to the Volgograd (especially - in terms of investments in fixed assets) and the Sverdlovsk regions, as well as the Krasnodar region. There have been no significant changes in other regions.

Table following on the next page

Region	GRP, average annual growth rates			Investment in fixed assets, average annual growth rates		
	I	II	III	I	II	III
Kaliningrad region	1.034	1.001	1.009	1.048	0.930	1.009
Volgograd region	1.013	0.982	0.979	0.989	1.016	0.979
Rostov region	1.012	0.999	1.013	1.073	0.941	1.013
Krasnodar region	0.999	1.054	1.003	1.043	1.147	1.003
Republic of Tatarstan	0.979	1.013	0.996	1.003	1.048	0.996
Nizhny Novgorod region	0.994	0.993	0.999	1.071	0.980	0.999
Samara region	0.979	0.977	0.992	0.964	0.994	0.992
Republic of Mordovia	0.988	0.992	1.011	1.045	0.954	1.011
Sverdlovsk region	1.001	1.022	0.992	1.031	0.998	0.992

Table 3: The ratio of the average annual growth rate of macroeconomic indicators of regions hosting major sports events to average values for the Russian Federation

Comparison with the average values in the federal districts gives us slightly different results: changes to the worst are taking place in the central regions for their federal districts (Krasnodar Territory, Sverdlovsk Region and the Republic of Tatarstan), and in the "peripheral" regions (Barkhatov, Pletnev, Kapkayev, 2019), on the contrary, there is a recovery of economies at a faster rate.

Region	GRP, average annual growth rates			Investment in fixed assets, average annual growth rates		
	I	II	III	I	II	III
Kaliningrad region	1.053	0.992	1.013	1.061	0.904	1.013
Volgograd region	0.806	0.897	0.895	0.717	0.958	0.895
Rostov region	0.805	0.911	0.925	0.778	0.887	0.925
Krasnodar region	0.795	0.962	0.917	0.756	1.081	0.917
Republic of Tatarstan	0.995	1.015	1.012	0.973	1.079	1.012
Nizhny Novgorod region	1.010	0.995	1.015	1.039	1.009	1.015
Samara region	0.995	0.979	1.008	0.936	1.024	1.008
Republic of Mordovia	1.004	0.994	1.027	1.014	0.983	1.027
Sverdlovsk region	1.008	1.058	0.983	0.979	1.088	0.983

Table 4: The ratio of the average annual growth rate of macroeconomic indicators of regions hosting major sports events to average values for the respective federal districts

The study analyzed the comparative dynamics of investments in fixed capital of accommodation facilities (hotels) for the whole Russian economy and for the regions where the World Cup was held (in total). In Russia in 2017, investments amounted to 32,645.59 million rubles. (the maximum of more than 80 billion rubles was done in 2014). The dynamics of the second series (where regional data are summarized) is weaker than the first one (national average), and in 2015 is twice as slow as it (Figure 1). The exception is 2013 and 2014, when the leading growth ensured by extremely high investments in the infrastructure of Sochi (Krasnodar region). This means that the "appointment" of regions as hosts of the World Cup has not led to an acceleration of investments in the development of tourist infrastructure - hotel economy.

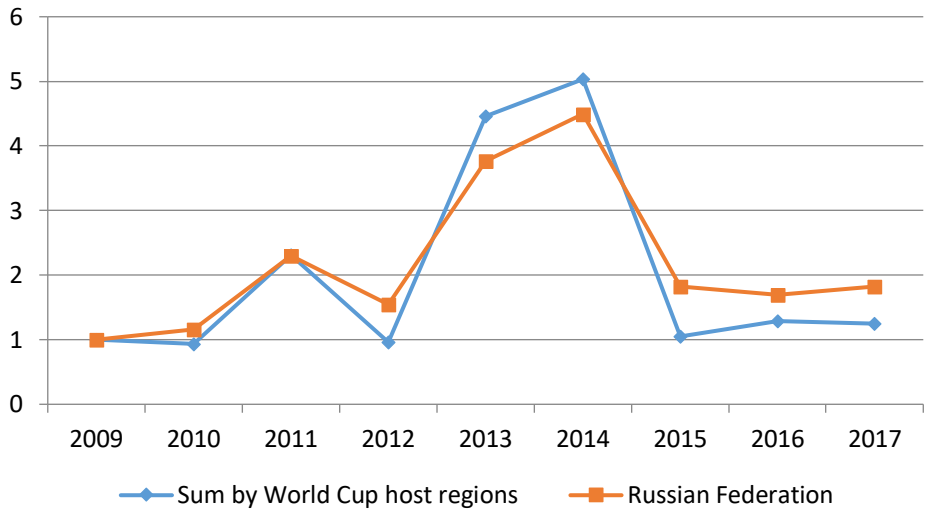

Figure 1: Ratio of investments in hotel industry development in Russia and World Cup hosting regions 2018 (2009 year = 100%)

It is important to assess the results of the change in the interest of tourists in visiting World Cup hosting regions. There is also an interesting trend here. In general, in Russia in 2009-2017 there was an increase in the volume of tourist services to the population (the average growth rate in 2009-2017 - 9.9%; before 2013 growth was rapid, 13.2%, and since 2013 it slowed down to 3.4% per year). At the same time, the tourism market is small and amounts to 166.5 billion rubles in 2017. The total share of regions hosting the World Cup in the total volume of services steadily decreases, and if to estimate this trend without two capitals - Moscow and St. Petersburg, the result will be different - since 2013, the share of these regions increased from 21 to 25 percent. This means that the status of hosts of the World Cup allowed the regions to increase the monetization of their tourist potential (Fig.2).

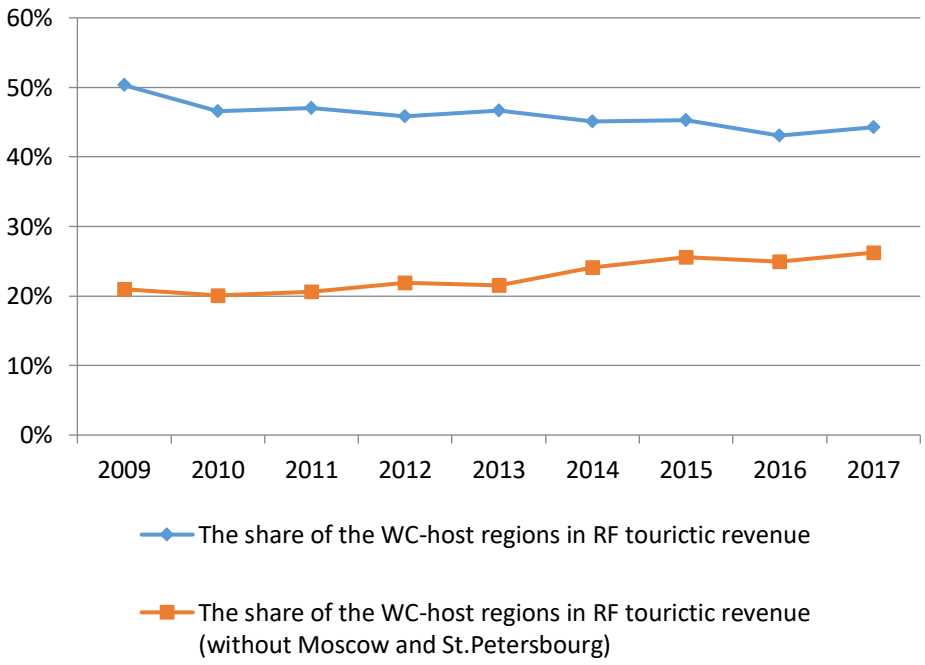

Figure 2: Ratio of shares in the total volume of tourist services of all regions hosting World Cup and two "provincial" regions, except Moscow and St. Petersburg

The rate of growth of the volume of tourist services by regions holding the World Cup, as well as on average in Russia, turns out to be different (Figure 3). The all-Russian growth rate is higher than in the regions hosting the World Cup. This result is largely due to the decline in the volume of tourist services in Moscow and St. Petersburg in 2013-2017. Such decline explained by reasons other than the World Cup and should be studied separatelly. For this reason, the real impact on the volume of tourist services of regions obtaining the status of hosts of the World Cup reflects the schedule without taking into account the capital regions (Fig.3). It shows a trend since 2014. World Cup host regions are increasing their revenues from tourism activities at a faster rate.

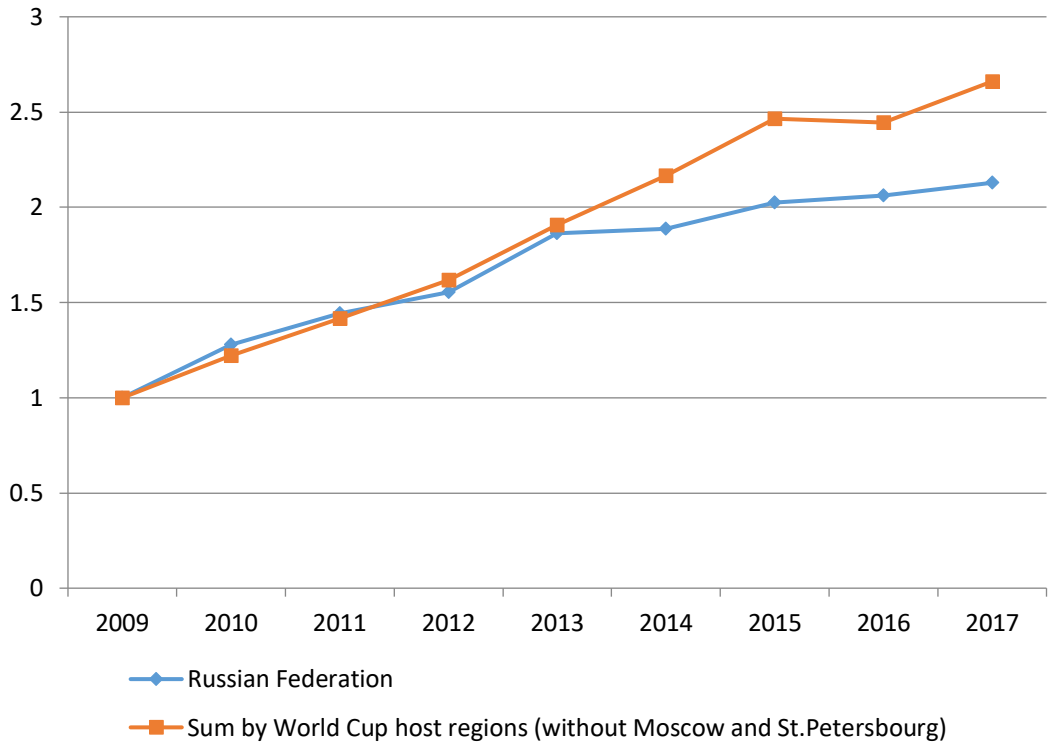

Figure 3: Comparative dynamics of tourism services to the population (2009 year = 100%)

6. CONCLUSION

1) An interesting trend has been revealed: the holding of mega sports events has practically no impact on the economy of the regions, neither GRP, nor investment in fixed assets, with few exceptions, shows no significant growth.
2) For the provincial regions, the status of the 2018 World Cup host helps to increase the volume of revenues from tourism services, even despite lower investments in the development of hotels in comparison with the average Russian.
3) According to 2013-2017, the regional authorities did not use the opportunity to attract additional investments under the received status of the 2018World Cup host region.
4) It is possible to state the risk of insufficient use of that heritage, which left major sports events (concerning emerging difficulties in the use of some built sports facilities).
5) Significant investments are made in transport and regional touristic infrastructure and the primary purpose now is to get the profits from its use.
6) The World Cup has attracted great amount of tourists, most of them (89%) will recommend to visit Russia to their friends, so the most important result of the event is changing the image of the country and its regions, cultural exchange, international connections with different partners.

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GAMIFICATION AS A FORESIGHT TREND IN THE PROMOTION OF RETAIL BANKING PRODUCTS AND SERVICES

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ABSTRACT
The article highlights the features of gamification in the banking sector. Its relevance is maintained by the fact that modern credit organizations ignore the experience of the computer game designers in attracting gamers and monetizing them, and that the number of customers, who prefer game interaction to traditional forms, is increasing. The purpose of the article is to design a conceptual framework of applying gamification in promotion of retail banking products and services. The definition of the term "business gamification in the banking sector" is given; the feasibility of business gamification elements in the banking sector is proved; main types of business gamification in the banking sector are classified; a foresight, containing a number of banking game strategies, is presented. Practical significance of the research lies in the possibility of using the proposed classification and foresight by Russian and foreign banks when developing strategies for the promotion of retail products and services.
Keywords*: Interaction between banks and clients, The future of banks, Games with clients*

1. INTRODUCTION AND PROBLEM STATEMENT

Currently, almost any market of traditional[1] products and services is saturated, which is manifested primarily in the absence of a supply shortage. Thus, any economic entity, having the necessary amount of monetary resources, is able to purchase the goods it needs. The Russian market of banking products and services is no exception – a large number of independent banks offer consumers a variety of products (as of October 1, 2019, the number of operating credit institutions amounted to 454, more than 90% being banks [2]). At the same time, banking is characterized by a fairly high degree of products substitutability. Thus, the consumer value of two loans granted by different banks for the same term at the same rate with the same repayment schedule is identical.[3] With the approximately identical interest rates, commissions, etc., set by competing banks for similar products, their key task is to increase the consumer value of the services offered using methods other than pricing. Otherwise, it can start dumping[4], which usually leads to a decrease in economic efficiency without achieving the set commercial goals (increase in market share, increase in asset quality, etc.). Non-pricing methods of competition in the banking sector are primarily associated with increasing: a) the reliability of the financial organization; b) the attractiveness of the brand; c) the quality of the products offered; d) the effectiveness of services promotion. One of the most relevant and largely underestimated methods of retail banking products and services promotion is gamification – "application of game elements and techniques for solving non-game tasks" (Orlova, Titova, 2015). So, at present, a huge number of people are interested in computer games – more than 2.3 billion people around the world, including more than 65 million in Russia[5]. This determined a significant volume of the market for such services – in 2018, gamers spent $137.9 billion on

[1] Unlike markets for new and / or innovative products and services.
[2] Materials of the Central Bank of the Russian Federation. Retrieved from: http://www.cbr.ru/statistics/pdko/lic/
[3] At the same time, some products may have fundamental distinctive features (external or internal), which possess serious competitive advantages simplifying their promotion. For example, unique car design, different filtration technologies in vacuum cleaners, etc.
[4] The first dumping move is when a bank reduces the cost of its services, forcing competitors to take similar steps. Further, the initiator bank, unwilling to retreat, keeps reducing the cost of its services. This leads to the corresponding actions of competitors.
[5] Materials of the Kommersant newspaper. Retrieved from: https://www.kommersant.ru/doc/4019540

games (a 13.3 % increase compared to 2017), including $1.7 billion spent in Russia (11th place in the world ranking[6]). It is obvious that conventional companies including conservative banks can use the experience, methods and techniques that retain customers' interest in computer games and, most importantly, make people pay. Despite the fact that the term "gamification" was first introduced in science by an American programmer N. Pelling quite a long time ago – in 2002 (Orlova, Titova, 2015), in the banking sector, gamification is still in its early stages – only a small number of banks consider this method. The statement is equally true for both Russian and foreign banks. Thus, the scientific problem, having a practical orientation, lies in the fact that modern banks ignore the experience of computer game designers in attracting, retaining and monetizing customers. This determines the relevance of the study – the design of a conceptual framework of gamification process in the promotion of retail banking products and services. To achieve this goal, a number of tasks should be completed: a) to determine the essence of the gamification process in the banking sector; b) to classify existing and prospective types of banking gamification; c) to justify the foresight of the practical use of gamification in the banking sector in the medium and long term.

2. LITERATURE REVIEW

Application of gamification methods in the Russian scientific literature is investigated mainly in the field of general education schools (Monakhov, Monakhova, 2015) and in higher educational institutions (Eliseeva et al., 2016), etc. The interest of teachers in this topic is obvious – they are the first to feel the validity of the Strauss–Howe generational theory. In the 90's of the twentieth century, they proved that "approximately every 20-25 years, a new generation appears, whose values and behaviour differ from their predecessors" (Zaitseva, 2015). These include generation Y (born from 1983 to 2000), generation Z (born after 2000), and so on. Given that "gadgets" and electronic games are a constant attribute of representatives of these generations (especially Z), it is not surprising that teachers are forced to use traditional gaming techniques in order to improve the quality of the "boring" educational process. At the same time, very little attention is paid to the gamification of various economic processes. So most of the research is devoted to the use of gamification elements in human resources management – when evaluating candidate for an employment (Zernova, 2019), when determining fair remuneration for their work (Lapteva, Vukovich, 2018), when managing "corporate health" (Rybakov, 2017), etc. At the same time, gamification of the banking sector is almost terra incognita[7] – there are very few scientific articles in this area (Bikmukhametova et al., 2016; Smirnova, 2016; Yablonskaya, Shokhova, 2018), and the relevant issues are disclosed in a fragmented manner. Much more attention is paid to the topic of business gamification abroad. So, the acclaimed book by K. Werbach and D. Hunter For The Win: How Game Thinking Can Revolutionize Your Business Reflects Common Approaches To The Practical Implementation Of Gamification In The Areas Of Marketing, Productivity Improvement, Employee Motivation, And Customer Acquisition (Werbach, Hunter, 2012). The article by J. Hamari, J. Koivisto, H. Sarsa comprehensively presents a palette of scientific papers in the field of business gamification (Hamari et al, 2014). However, there are very few studies that reveal the specifics of banking business gamification, and the information presented in them is fragmentary and does not provide any foresight (Rodrigues et al, 2013; Ebadati, 2017, etc.). The results of the literature review allow us to draw a conclusion about the relevance of the above mentioned research goal and the tasks formulated within it.

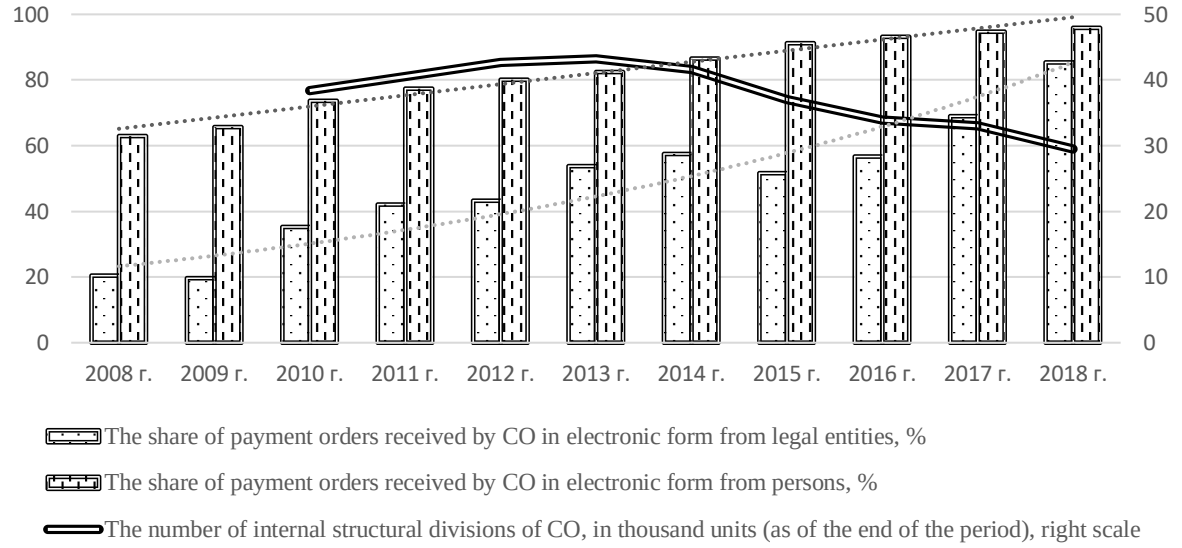
[6] Report on the global games market Newzoo for 2019. Retrieved from: https://newzoo.com/insights/trend-reports/newzoo-global-games-market-report-2019-light-version/; Russians people spending on games corresponds to the country's economy scale. Thus, in 2017, Russia ranked 11th in the world ranking in terms of GDP (RBC materials). Retrieved from: https://www.rbc.ru/economics/12/07/2018/5b4754d19a7947194c1d48f1).

[7] Translated from Latin – unknown land.

3. RESEARCH RESULTS AND DISCUSSION

Business gamification in the banking sector is the introduction and use of elements of entertaining games in the business processes carried out by banks in order to increase their efficiency. In this case, the non-game process uses the usual "game mechanism" – a set of game rules, within which interaction of all game elements is carried out[8] (Adams, Dormans, 2012). Banking entrepreneurship is based on the trust of a significant number of clients who place their savings in a credit institution. That is why at all times the interaction between banks and their clients was carried out as conservatively as possible - in expensively furnished offices, by formally dressed employees, etc. However, currently, banks interact with their clients not in person, but mostly via the Internet. This trend is becoming more and more significant (*Fig. 1*), which fundamentally changes the model of relationships that has developed over the centuries.

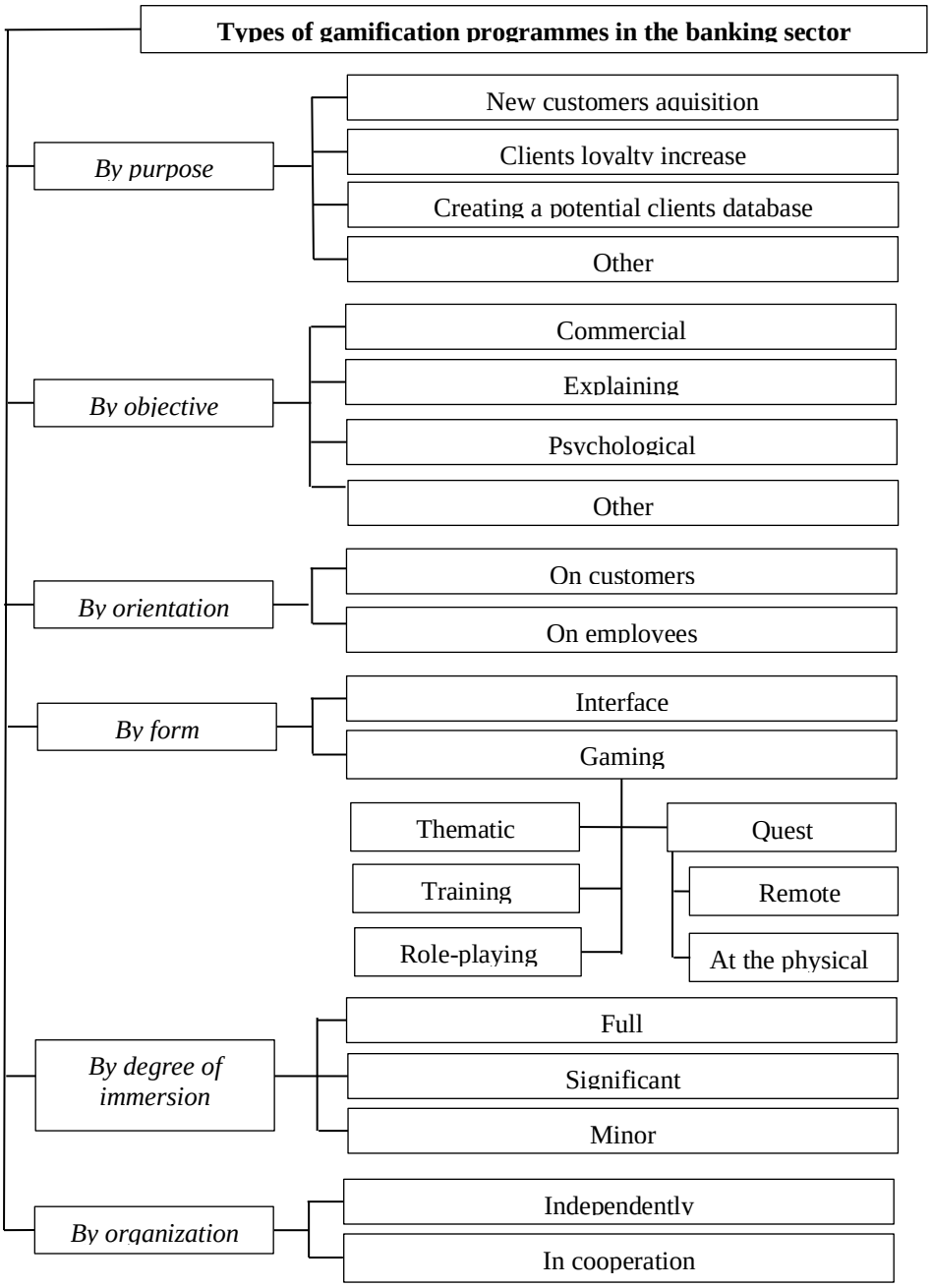
Figure 1: The dynamics of changes in the share of payment orders received by credit organizations (CO) in electronic form, in % (left scale) and the number of internal structural divisions of CO, in thousand units (right scale) in Russia in 2008-2018.



As you can see, the share of payment orders sent to banks using online banking services is growing steadily – in the retail segment over the past 11 years, it has quadrupled (from 20 to 85 %), and in the corporate segment increase 1.5 times (from 63 to 97 %). At the same time, the number of bank branches has significantly decreased over the past 5 years – from 43 to 29 thousand offices. The development of remote interaction between banks and their clients is caused by three main reasons: a) the technological progress that has determined the technological simplicity of a secure remote connection "client-bank"; b) the motivation of banks to reduce their costs; c) the fundamental desire of a significant part of clients to interact with any counterparty remotely. The last reason is worth being analysed in more detail. On the one hand, remote interaction does save time and money for customers. On the other hand, a significant part of people, especially generations Y and Z, do not want to leave the Internet reality. This is due to a number of psychological factors (Voiskunsky, 2015; Denisov, 2014). This fact defines a wide range of opportunities for gamification in the banking sector. To determine the possibilities of practical application of gamification methods in the banking sector, it is necessary to present a general classification of gamification programmes, which has been carried out for the first time in the scientific literature (Fig. 2).

[8] The exact quote: "Mechanism as the singular form, indicating a single set of game rules associated with a single game element or interaction".

Figure 2: Types of gamification programmes in the banking sector



Source: the author

The goal of gamification in the short and medium term perspective is to increase the loyalty of existing customers and / or attract new customers. However, an equally important goal may be to build a customer base of future clients among today's school children (middle school and older). Greater part of them, being bright representatives of generation Z, cannot concentrate their attention on one subject for a long time, and are not interested in acquiring knowledge independently, etc. At the same time, "game mechanics", which they are familiar with through computer games, is one of the key tools for communicating information to them and one of the mechanisms of their persuasion. Banks offer traditional services, which features are not always clear to their clients. That is why banks that want to expand their customer base in the future should enter the world of generation Z – the world of computer games. Tasks that are accomplished through gamification can be classified as follows.

The main task, especially in the short term, is to increase commercial indicators, for example, an increase in the volume of payment cards issued, increase in the profitability of certain business segments.

- *Case 1.* When using the American Bank PNC app, an animated image of a piggy-bank appears periodically on the customer's screen. It offered clients to transfer a small amount of money from the current account to the savings account. The feature became so popular that the bank developed an interactive game, where participants had to break a virtual piggy-bank for a reward[9]. Given the traditionally low level of financial literacy of some potential consumers of banking services, it is advisable to explain to them the "internal mechanics" of complex financial products, such as mortgages, brokerage accounts, etc. At the same time, training games, in particular simulators, allowing you to get in touch with banks' business processes in a most realistic manner, are able to increase customer satisfaction.
- *Case 2.* In 2011, Australian Bank CommBank launched the Investorville simulator game. In this game clients "experimented with applying for various types of mortgages, carried out repairs, and paid property taxes. First-time buyers saw the consequences of their financial decisions and analysed the pitfalls"[10].
- *Case 3.* The above-mentioned CommBank had been developing the CoinLand website for four years. It introduced the adult banking world to children through a game[11]. Engaging people into an entertaining game, especially over a long period of time, contributes to the development of a psychological dependence (Petrov, Chernyak, 2017). The emergence of such non-material feelings to a bank can have a positive impact on customer loyalty and, and as a result, on quite material commercial indicators. Most gamification projects are aimed at bank customers. At the same time, some credit organizations are beginning to use gamification methods in interaction with their staff.
- *Case 4.* In 2017, Russian Sovcombank updated the corporate website, expanding the features available for its employees. First, a corporate online store was opened, offering different goods (from pens with the bank logo to the latest models of gadgets), as well as very unconventional goods available for special points. So, for 10 thousand points you can get a day off, and for 35 thousand points you can have lunch with the president of the bank. Bank employees earn points during periodic appraisal, as well as during additional training *at their own initiative*. Also, every morning the "question of the day" is asked, to answer which the employees need to solve a task on one of the existing banking products. Secondly, on the corporate website, you can get "thank you" from colleagues (they are not converted into anything material, but serve to "clean up your karma"[12]). The form of gamification can be interface-based, in which customers' mobile applications acquire certain game features.
- *Case 5.* Rocket Bank (Bank-Qiwi partner) offers to choose a fantasy-scoring of standard transactions (withdrawals, deposits, etc.) by dwarves, orcs, etc.[13] Customers can also be involved in interactive themed games with the bank.
- *Case 6.* In 2017, Tinkoff Bank invited everyone to play *the Tinkoff All Airlines Strikers* game. The plot (as well as the graphics) was quite primitive (at the Dendy level of the early 90's of the twentieth century). However, everyone who completed the game was offered to open a bank card and take part in the main prize draw – 15 thousand bonus miles.

[9]PNC Bank interactive digital signage by Inwindow Outdoor. Retrieved from: https://www.youtube.com/watch?v=U80wJNW2kLY

[10] The Fun Is Spreading! How Gamification Is Changing Industries . Retrieved from: https://workingmouse.com.au/innovation/the-fun-is-spreading-how-gamification-is-changing-industries

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[12] Materials of HR-TV portal. Retrieved from: https://hr-tv.ru/articles/author-opinion/gejmifikatsija-v-pomosch-kak-sovkombank-obnovil-korporativnyj-portal.html

[13] Materials of Rocketbank. Retrieved from: https://orocketbanke.ru/rocketbank-application/vse-ozvuchki-ot-roketbanka/

- *Case 7.* Sberbank has launched the Spasibomania (Thankyoumania) game. During the game, players make moves that result in winning "thank you" bonus points and / or puzzle pieces. Only the first few moves are free, and the right to continue the game is purchased for the existing "thank you" points, i.e. to participate in the game you need to use a Sberbank payment card. Some banks in the implementation of its bonus program pay increased reward for the completion of certain quest tasks.
- *Case 8.* Russian Bank OTKRITIE charges 1 additional cashback percentage for meeting each of the two conditions: "when making payments using Opencard in their app or online bank starting from 1,000 Russian rubles" and "when maintaining the monthly minimum balance higher than 100,000 Russian rubles on all cards"[14].

It should be emphasized that the above classification is not exhaustive.

4. IDENTIFIED PROBLEMS AND FORESIGHT

According to one definition, gamification in the banking sector is a technology allowing to conduct financial transactions in a more interactive and fun (gaming) environment with a high involvement of participants in its process (Smolyaninova, Foot, 2018). As you can see, the main focus is on the presence of the game environment and entertaining actions. At the same time, most banks do not use gamification elements, and the methods and approaches of other banks indicate an initial level of understanding of the need for gamification of banking business processes. For example, in 2014-2017, Alfa-Bank offered its clients to transfer money from their current account to their savings account in proportion to the number of steps they walked per day[15]. However, in essence, this offer was "unplayable" in contrast, for example, to the fitness product of Emirates NBD Bank (UAE), whose interest rate for a similar account depended on the number of steps walked per day (from 0.25 to 4% per annum when making more than15 thousand steps)[16]. The main problem of modern banks is the lack of understanding that there is a need to gamify their activities (and not just in the future, but already at the present time). The author believes, this is due to the fact that banks top managers do not realize the on-going change in the generations of their customers, which causes changes in the model of interaction with them. That is why "creative" banks (Tinkoff, Rocket, etc.), manage to increase their client base without offering super favourable conditions and without having a physical presence. Their competitive advantage is the ability to "speak the same language" with young people. It is likely that over the next 10-15 years (along with the rejuvenation of the management staff of many large banks), banks will move to the implementation of full-fledged game strategies - ways to integrate gamification methods and techniques into the core business. The author has formulated four main directions.

- *Direction 1* - mimicry of banking applications for popular online games (even to the extent of blending). This is possible only in cooperation with manufacturers of such games (combat and sports simulators, shooters, space strategies, fantasy worlds, etc.), which can create banking programmes and even bricks-and-mortar bank offices in their own style. In this case, the cash on the account may not be measured in roubles, but, for example, in barrels of jet fuel, cartridges, lunar artifacts, etc.
- *Direction 2* - co-branding with game manufacturers (bank cards with increased cashback to pay for internal "game" currency, "game" overdrafts, etc.).

[14] The materials of the OTKRITIE bank. Retrieved from: https://www.open.ru/cards/opencard
[15] Materials of Alfa-Bank. Retrieved from: https://alfabank.ru/press/news/2014/2/6/32771.html
[16] NBD materials. Retrieved from: https://www.emiratesnbd.com/en/personal-banking/accounts/savings-and-deposit-accounts/fitness-account

- *Direction 3* - creating bank simulation games that include well-known mechanisms forming psychological dependence (interactive game design, competition with other participants, endless gameplay, increasing the status of game achievements, loot boxes[17], etc.).
- *Direction 4* - transition to the life-style model of the bank, which constantly conducts various actions without advertising commercial goals (the bank should become an indispensable friend with whom you can have fun, post shared photos, participate in a genre quest, etc.).

5. CONCLUSION

Currently, gamification is not a mainstream in the promotion of retail banking products and services. First of all, this is due to a lack of understanding of the prospects of such interaction with clients by banks top managers. Two key facts are ignored: a) the number of generation X and Z clients is growing; b) a huge number of people, especially from these generations, are fans of computer games (the number of gamers and their spending on games is constantly increasing). At the same time, every year, customers are increasingly moving away from their banks, preferring computer applications to bricks-and-mortar offices. This creates a fundamental basis for gamification of banking activities. It determines the necessity of a foresight trend to gamify the promotion of banking products and services, especially in the retail segment. This will lead to the need for banks to develop and implement full-fledged game strategies, the main directions of which were described in the article.

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[17] Containers with virtual artefacts. Loot boxes can be purchased or they appear periodically, which makes it necessary to access the game constantly, for example, a couple of times a day. The uncertainty encourages the emergence of psychological dependence, similar to gambling.

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FOREIGN DIRECT INVESTMENT IN CÔTE D'IVOIRE: AN ANALYSIS FROM 2003 TO 2016

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ABSTRACT

Since 2011, Cote d'Ivoire has been increasing its incentive policies to attract foreign investors. In order to benefit from the impact that this foreign direct capital can have on its economic development. The contribution of foreign direct investment to countries' development is unprecedented today, especially in developing countries. Economic growth strategies now place a strong emphasis on the promotion of FDI due to the insufficient resources available to finance countries' development and the growing difficulties encountered in combating poverty. In a highly competitive environment fuelled by globalization, the need for financial resources is taking on enormous proportions. In doing so, the inflow of foreign capital appears to be a boon for any state facing social and economic challenges. Cote d'Ivoire, like other developing countries, has launched many reforms such as the adoption of a new investment code, the creation of a trade tribunal and the establishment of an investment promotion centre. All these reforms to enable the Ivorian territory to meet the requirements of foreign investors (multinational companies) and make the country attractive. It is with this in mind that our article aims to identify the determinants of foreign direct investment over the period 2003-2016. To do this, we conducted an econometric study using the VAR method. This method has enabled us to distinguish the factors that illustrate the attractiveness of the Ivorian territory.

Keywords: *Foreign direct investment, Multinational firms, Economic growth, Public expenditure on infrastructure, Cote d'Ivoire, Public investment in infrastructure*

1. INTRODUCTION

For Sandrine Levasseur[1]"there is foreign direct investment when a non-resident company takes a long-term interest in a resident company, the investor's goal is to obtain a significant role in the management of the company". According to this definition, foreign direct investment can be said to exist when an investor based in one country (the home country) acquires at least 10% of the share capital of a company in another country [2](host country) for the purpose of its sustainable operation (at least one year). Foreign Direct Investment (FDI) promotes the transfer of knowledge, contributes to training, the improvement of human capital and participates in the development of companies in a competitive environment. Since John Harry Dunning's study on foreign direct investment in the 1970s, more and more researchers have been discussing the subject. We can quote, Mucchielli (2002) that the development of FDI facilitates the integration of international trade and has the effect of helping developing countries to access international markets.

[1] 1 Sandrine Levasseur 2002 "Foreign direct investment and multinational company strategies" OFCE review p103-152
[2] 2013 report of the Central Bank of West African States on the evolution of FDI in the WAEMU

For Dunning (1973), the factors related to the rental of MNFs in a territory are the presence of natural resources, transport and labour costs, government incentives and opportunities in local markets in host countries. Agnieszka and Young (2008), in their research on the investment decision of foreign companies in Warsaw, argue that knowledge, market and agglomeration factors (existence of other companies) are key determinants in MNF decisions to locate in Warsaw. Coeuré and Rabaud (2003) show that the decision to invest abroad is based on four determinants: the size of the host country's market (local demand), the number of firms already present on the market (urban economy), labour costs and skills, tax incentives, the quality of public infrastructure and human capital. Asiedu (2002) also finds that the choice of location essentially refers to the specific characteristics of the countries. For her, this is all the more true when it comes to the choice of MNFs to establish themselves in sub-Saharan African countries. Maingui (2004) believes that MNFs are set up where infrastructure is developed with skilled labour and accessibility to the local and regional market. Toubal and Trannoy (2016) consider that the determining variables for attractiveness are transport infrastructure, human capital, which is the percentage of the population with a higher education diploma, and the quality of governance. Economic data are important factors in the choice of territory. But for Toumi (2009), they are not the only ones taken into account by the MNFs; there is also governance in host countries, the fight against corruption and the improvement of the political framework. In the empirical literature, there are many studies on the determinants of FDI, these studies focus on the factors that insist on MNFs moving to these countries. Burckely et Al (2007), show the negative effect of a country's high inflation rate on FDI flows. This reflects an unstable economic and financial situation and may discourage foreign investors from investing in the country. Buch et Al (2003), in their study on the German economy at the beginning of the period (1990-2000), estimate the importance of market size and the level of GDP growth. Fung et Al (2002) and Torrisi et Al (2008) also note in their studies on China and Central Europe a positive impact of market size and Chinese GDP growth on FDI flows from the United States, Japan and Europe. This impact of the growth rate is noted by Morisset (1999), in his study on the determinants of FDI in Africa. It shows that the main determinants are economic growth and the openness of countries to foreign trade. According to the BCEAO survey report (2007)[3], FDI is positively influenced by economic openness, human capital (level of education), the creation of free industrial zones and the rate of public investment in public infrastructure (road, motorway, administrative buildings etc.). For Ngowi (2001), the lack of attractiveness of African countries is explained by their lack of political and institutional stability and predictability. Democratic countries are more attractive than those with autocratic regimes. In addition, there are excessive administrative (bureaucratic) procedures that discourage potential investors. Heshmati (2003)[4], considers that infrastructure is one of the major determinants that firms take into account before setting up in a developing country. It also adds the role of telecommunications. Dupuch and Milan (2003), in their study on European FDI flows to Central and Eastern European countries (CEECs) over the period 1993 to 1998, argue that market size, geographical proximity and choice of privatisation method are the explanatory variables for FDI flows to these countries. It is the transition to a competitive market economy that has attracted these investors the most. According to Asiedu (2003), in his work on developing countries, shows the positive impact of having better infrastructure and a better return on investment to attract investors. It considers that the risk associated with the African country is being abused because of the lack of information and, in order to remedy this, States must disseminate relevant and credible information. Basu and Srinivasan (2002), in their study of 7 African countries[5],5concluded that the main determinants are political stability, the

[3] Research study document by Patrice DJE
[4] Cited by Groh and Wich (2009)
[5] (Botswana, Lesotho, Mauritius, Mozambique, Namibia, Swaziland, Mauritius, Uganda)

macroeconomic environment, good governance, a very low level of corruption and investment in human capital. In view of its importance for economic development, we propose in this study to shed light on the factors that determine the attractiveness of FDI in Côte d'Ivoire. Our study will aim to analyse the evolution of incoming FDI from 2002 to 2016, it will be structured as follows. The second section is a presentation of the methodology used for our analysis. The second is devoted to the evolution of FDI flows in Côte d'Ivoire. And in the third section we will present our results, as well as empirical analysis of the attractiveness of FDI in Côte d'Ivoire.

2. METHODOLOGY

The literature review we have seen previously has allowed us to identify the main factors that influence FDI flows in other countries. But does not allow us to know exactly what the significant factors are in the case of Cote d'Ivoire. In this part of our study, we will discuss the econometric method that will make it possible to analyze the main factors that encourage MNFs to locate in Côte d'Ivoire. We will begin with the presentation of our initial econometric model and then the results and interpretation. According to Edmond Malinvaud: "A model consists of the formal representation of ideas or knowledge about a phenomenon, that is, a set of hypotheses about the structure of the phenomenon and the laws that govern it. The reasoning on the model makes it possible to explore the logical consequences of the hypotheses retained, to compare them with the results of the experience, to arrive at a better knowledge of reality and to act more effectively". Models that allow economic facts to be studied are called econometric models. An econometric model is therefore a formalisation of economic theories in relation to a specific economic phenomenon. Its objective is to explain and make decisions. Any econometric model is a simplification of economic realities. In our case we will analyse the variables that explain the attractiveness of Cote d'Ivoire in order to capture FDI flows.

2.1. Presentation of the Model

The model we chose is the VAR (vector autoregressive) method of the Eviews 9 software, which was developed by Christopher Sims. It essentially reveals the autocorrelation of data, analyses and interprets them, and our Var model will be presented as follows:

IDE= f (TXCR, TXIDE, TXOUV, GPIB, TSP, KH, TXCHAN, TXINF,TEL)

With

TXIDE: Foreign direct investment (the variable to be explained or studied)

TXCR: GNP growth rate (gross domestic product)

TXOUV: trade openness rate, sum of import and export transactions of goods and services as a percentage of GDP

GPIB: public expenditure by the State on infrastructure

PST: Level of political stability of the country (business climate)

KH: enrolment rate measured by the primary completion rate

TXCHAN: the exchange rate explained by the CFAF/USD parity

TXINF: the annual growth rate of the implicit GDP deflator

TEL: the number of mobile phone subscribers

2.2. Presentation of variables

2.2.1. Endogenous variable (explained variable)

The endogenous or explained variable of our model is foreign direct investment **(FDI).** Its evolution (upwards or downwards) depends on other economic variables and it generally makes it possible to assess the attractiveness of a country. It is generally estimated in millions of US dollars, or as a percentage of GDP, in our case we will opt for the first choice (millions of US dollars).

2.2.2. Exogenous variables (explanatory variables)

The choice of these exogenous or explanatory variables comes from the previous study (empirical basis) in other countries. Our econometric study will identify the most illustrative factors in the case of Cote d'Ivoire in order to improve its attractiveness. All these exogenous variables will be delayed by one period. In practice, investors make the decision to invest based on previous economic data. This selected exogenous variables are as follows:

- **TXCR:** The growth rate reveals the macroeconomic situation (stable or unstable) of a country, it allows to see the evolution of the economy from one year to another. It is very generally expressed as a percentage. All empirical studies have found a positive relationship between growth and FDI.
- **TXIDE :** Investors are attracted to invest in territories where FDI is already present. This variable shows the agglomeration effect. The decision for an MNF to establish itself in a territory depends on the other determinants and also on its previous level of FDI flows received. It will be expressed as a percentage of GDP.
- **TXOUV:** The trade openness rate is a measure of a country's foreign trade. It represents the country's opening to international trade. An open economy attracts MNFs and is favourable to the import of intermediate goods for production and an ease of export. It is calculated as follows: (Exports + Imports) /2]/GDP) x 100
- **GPIB:** Public expenditure by the State on quality infrastructure is one of the key factors in the country's attractiveness and strengthens its competitiveness. These include road, motorway, port, airport, rail, telecommunications, university and professional training infrastructures, etc. Existing infrastructures make it possible to reduce production costs for MNFs. In our study, it will be expressed as a percentage of GDP ([Gross Fixed Capital Formation/GDP] x100).
- **TSP:** This variable is the indicator used to assess a country's degree of stability and security. An unstable country with a negative effect on investors, MNFs need guarantees for the security of their investments. The components of political risk cover the following elements:
  - The government's apparent ability to stay in power and deliver on its agenda
  - The socio-economic factors that cause instability, which prevent government from acting (consumer confidence, poverty);
  - Violence and internal and external political conflicts and violence;
  - Corruption ;
  - Military interference in politics;
  - Religious and ethnic tensions ;
  - The quality of the administration;
  - The power and impartiality of the judicial system and public respect for the law.
- **KH:** This variable allows us to measure the level of education. To be more attractive, a territory must have quality human capital.

A qualified workforce is an important factor for firms wishing to set up. This human capital will be measured by the primary school enrolment rate for the number of people who have completed the last year of primary school compared to the total number of children who have reached the legal age of the last year of primary school.

- **TXCHAN: The** exchange rate of a currency is the rate of exchange of that currency against another, also called the parity of a currency[6]. In our study, it will focus on the parity of the CFAF to the Dollars. A volatile exchange rate reduces FDI flows, while a stable rate reflects a stable economic environment and therefore an attractive economy.
- **TXINF:** Inflation is the loss of the purchasing power of the currency that results in a general and sustainable increase in prices6. It describes the evolution of prices in an economy; the evolution of the inflation rate deteriorates economic activity and affects growth. It is measured by the GDP deflator or the consumer price index (CPI).
- **TEL:** The number of mobile phone subscribers will allow us to measure telecommunications infrastructure. It makes it easier to send and transmit information. This variable will be measured by the number of mobile phones per 100 inhabitants.

Table 1 below shows us the expected signs of the explanatory variables of our model (according to the different theories studied).

Table 1: Expected signs of explanatory variables

Explanatory variables	Variable name	Expected sign
TXCR	GdP growth rate	+
TXID	Foreign direct investment as a percentage of GDP	+
TXOUV	Trade opening rate	+
GPIB	State public expenditure on infrastructure	+
TSP	Level of political stability of the country (business climate)	-
KH	Enrolment rate	+
TXCHAN	Exchange rates	+
TXINF	Annual growth rate of the implicit GDP deflator	-
TEL	Number of mobile phone subscribers	+

2.3. The Hypotheses

We will make three initial hypotheses, which are:

- H1: Economic growth has a positive and significant impact on FDI flows
- H2: State public expenditure on infrastructure positively affects the attractiveness of a territory
- H3: The country's level of political stability has an impact on the flow of foreign direct investment. Instability makes the country less attractive to FDI

[6] Definition by INSEE (National Institute of Statistics and Economic Studies)

2.4. Data sources

The data are annual series covering the period 2002 to 2016 and come from the following different databases (see Annex 1):

1. World Bank
2. International Monetary Fund
3. Central Bank of West African States
4. Investment Promotion Centre of Cote d'Ivoire
5. United Nations Educational, Scientific and Cultural Organization
6. African Development Bank
7. Mo Ibrahim Index

3. RESULTS

3.1. Stationarity analysis

We would check if our different variables are stationary, to ensure that they are not seasonal and cyclical (see Appendix 2). If they have trends and are therefore non-stationary, they should be made stationary to avoid the risk of regression between variables. This test will be performed on Eviews 9 by ADF (Augmented Dickey-Fuller). The table below summarizes the ADF statistical test. According to Dickey-Fuller, there are three equations with the assumption:

H0: $\emptyset=0$ (not stationary)

H1: $\emptyset \neq 0$ (stationary)

Equation 3: $Xt= \emptyset X_{t-1} +bt+a_t+\varepsilon_t$ (Equation with constant and deterministic trend)
Equation 2: $Xt =\emptyset X_{t-1} + a_t+\varepsilon$ (Equation with constant or deterministic trend)
Equation 1: $X_t= \emptyset_{t-1} +\varepsilon_t$ (Equation without constant and without deterministic tendency)

Table 2: Stationarity result

Variable	Stationarity		ADF(Dickey-Fuller)		Equation
	Yes/No	Integration order	T-statistic	Prob	
IDE	Yes	I(1)	-3,875302	0.0296	EQ(3)
TXIDE	Yes	I(1)	-3,933364	0.0347	EQ(3)
TXCR	Yes	I(1)	-3,875302	0.0116	EQ(3)
TXOUV	Yes	I(1)	-3,212696	0.0366	EQ(2)
GPIB	Yes	I(1)	-3,175352	0.0208	EQ(2)
TSP	Yes	I(1)	-3,212696	0.0043	EQ(2)
KH	Yes	I(1)	-3,212696	0.0376	EQ(2)
TXCHAN	Yes	I(1)	-3,933364	0.0113	EQ(3)
TXINF	Yes	I(0)	-3,875302	0,0427	EQ(3)
TEL	Yes	I(1)	-3,175352	0,0473	EQ(2)

We find that all our variables are stationary with probabilities below the 5% threshold. The results of the ADF test (Augmented Dickey-Fuller) show us that only the inflation rate (TXINF) is stationary in level, integrating order 0. And the others become stationary in first difference and integration of order 1. We note that the variables of our model do not have the same order; we cannot do a Cointegration test in the sense of Granger.

3.2. Analysis of regression tests

We will try to verify the linear regression; it will allow us to see the existence of a relationship between the explained variable of our model (endogenous variable) and the explanatory variables (exogenous variables).

The regression tests will be of types in first simple linear regression and then multiple regressions.

3.2.1. Simple linear regression

This regression will verify that each variable exogenous to one explains the EDI. Our hypothesis will be the Fisher test hypothesis:

- H0: P- value > 5% (does not explain FDI)
- H1: P-value < 5% (explains FDI).

We will summarize the results in the table below, for more details see Annex 3

Table 3: Results of linear regressions on Eviews

Variable	Explains	P-Value
	Yes/No	Prob
TXIDE	No	0,6822
TXCR	**Yes**	**0,0026**
TXOUV	No	0,1601
GPIB	**Yes**	**0,0025**
TSP	**Yes**	**0,0209**
KH	No	0,0729
TXCHAN	No	0,9153
TXINF	No	0,4259
TEL	**Yes**	**0,034**

Following this simple linear regression test, we find that the different exogenous variables that explain the EDI are TXCR, GPIB, TSP, and TEL. After this simple linear regression, we will move on to the multiple linear regression of all our EDI-related variables.

3.2.2. Multiple linear regression

The objective of multiple regression will be to verify whether all remaining exogenous variables explain our main variable (endogenous variable: EDI).

The verification assumption will be:

- H0: $R2$ (R-Squared) < 50 % (Not significant)
- H1: $R2$ (R-Squared) > 50 (significant) And a P-value of less than 5%.

Table following on the next page

Table 4: Result of the multiple regression on Eviews with (GPIB, TEL, TPS, and TXCR)

Equation: UNTITLED Workfile: BASE DONNEE MODELE ECO...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: IDE
Method: Least Squares
Date: 11/03/17 Time: 22:39
Sample (adjusted): 2003 2015
Included observations: 13 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GPIB	34608186	22214697	1.557896	0.1579
TEL	-1142929.	1824229.	-0.626527	0.5484
TPS	-15233070	19326934	-0.788178	0.4533
TXCR	15980550	13325523	1.199244	0.2647
C	6.19E+08	6.67E+08	0.928427	0.3803

R-squared	0.653237	Mean dependent var	3.65E+08
Adjusted R-squared	0.479855	S.D. dependent var	1.71E+08
S.E. of regression	1.23E+08	Akaike info criterion	40.38317
Sum squared resid	1.22E+17	Schwarz criterion	40.60046
Log likelihood	-257.4906	Hannan-Quinn criter.	40.33851
F-statistic	3.767623	Durbin-Watson stat	3.116978
Prob(F-statistic)	0.052239		

R^2 of our Eviews output from Table 4 is greater than 50% and P-value greater than 5%, we reject H0 and we accept H1. This result can be accepted but there is nevertheless a variable that could be extracted.

Table 5: Result of the multiple regression on Eviews with (GPIB, TEL, and TXCR)

Equation: UNTITLED Workfile: BASE DONNEE MODELE ECO...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: IDE
Method: Least Squares
Date: 11/03/17 Time: 18:34
Sample (adjusted): 2003 2015
Included observations: 13 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GPIB	25785272	16590942	1.554178	0.1546
TPS	-15429021	18660852	-0.826812	0.4297
TXCR	17572624	12631822	1.391139	0.1976
C	6.55E+08	6.42E+08	1.019988	0.3344

R-squared	0.636222	Mean dependent var	3.65E+08
Adjusted R-squared	0.514963	S.D. dependent var	1.71E+08
S.E. of regression	1.19E+08	Akaike info criterion	40.27723
Sum squared resid	1.28E+17	Schwarz criterion	40.45106
Log likelihood	-257.8020	Hannan-Quinn criter.	40.24150
F-statistic	5.246789	Durbin-Watson stat	2.995673
Prob(F-statistic)	0.022882		

R^2 of our Eviews output from Table 5 is greater than 50%, and P-value less than 5%,we accept the H1 hypothesis. We find that when the variable TSP (Level of Political Stability of the Country) is removed we have a good significant model with exogenous variables that have an excellent explanatory power of 63.62% of the endogenous variable (EDI).

Our model will change:

IDE= f (TXCR, GPIB, TEL)

3.3. Model estimation test

Verifying the stationarity of our variables and testing regressions allows us to integrate these variables into the VAR model. The Eviews software provides us with the following model:

IDE = C(1)*IDE (-1) + C(2)*GPIB (-1) + C(3)*TEL (-1) + C(4)*TXCR (-1) + C(5)

As well as the results of the estimation in the table above.

Table 6: Result of the model estimation

Equation: UNTITLED Workfile: BASE DONNEE MODELE ECO...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: IDE
Method: Least Squares (Gauss-Newton / Marquardt steps)
Date: 11/03/17 Time: 21:29
Sample (adjusted): 2004 2016
Included observations: 13 after adjustments
IDE = C(1)*IDE(-1) + C(2)*GPIB(-1) + C(3)*TEL(-1) + C(4)*TXCR(-1) + C(5)

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.061534	0.323060	-0.190474	0.8537
C(2)	-34059808	19111411	-1.782171	0.1126
C(3)	3434111.	1770720.	1.939387	0.0884
C(4)	37188827	12739971	2.919067	0.0193
C(5)	4.66E+08	1.17E+08	3.964924	0.0041

R-squared	0.662652	Mean dependent var	3.88E+08
Adjusted R-squared	0.493978	S.D. dependent var	1.65E+08
S.E. of regression	1.17E+08	Akaike info criterion	40.27756
Sum squared resid	1.10E+17	Schwarz criterion	40.49485
Log likelihood	-256.8042	Hannan-Quinn criter.	40.23290
F-statistic	3.928599	Durbin-Watson stat	1.565419
Prob(F-statistic)	0.047280		

In the rest of our work we will test the validity of our model by the various statistical tests:

3.3.1. Normality test (normal law)

According to the null hypothesis that the residues are multivariate, the probability of these residues must be greater than 5%. The Jacques-Béra test shows that the probability is well above 5%. We have successively Jacques-Bera's p-value of 56.84% we can accept the null hypothesis of errors (See Appendix 4) and we can say that all our variables follow the normal distribution.

3.3.2. Heteroskedasticity test

It is a test that also covers residues. We will test whether the variances of the residues are constant or not using the ARCH test. The assumptions of the ARCH test are:

- H0: P-value < 5% (not significant)
- H1: P-value > 5% (significant)

The result of this test is shown in the table below.

Table 7: ARCH Heteroskedasticity Test

Equation: UNTITLED Workfile: BASE DONNEE MODELE ECO...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Heteroskedasticity Test: ARCH

F-statistic	3.908153	Prob. F(1,10)	0.0763
Obs*R-squared	3.371968	Prob. Chi-Square(1)	0.0663

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 11/03/17 Time: 21:53
Sample (adjusted): 2005 2016
Included observations: 12 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.53E+15	3.56E+15	1.272197	0.2321
RESID^2(-1)	0.519850	0.262961	1.976905	0.0763

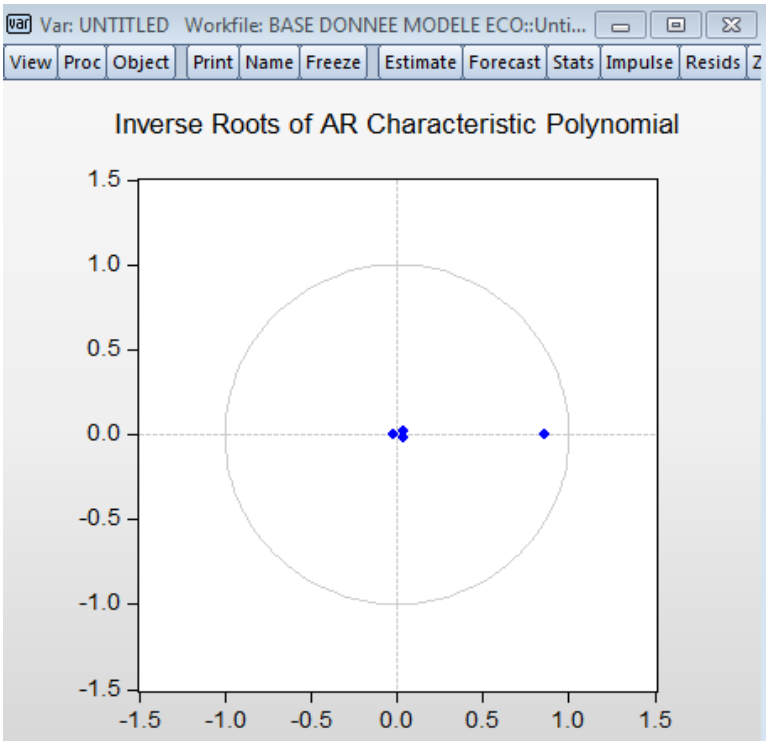
R-squared	0.280997	Mean dependent var	9.05E+15
Adjusted R-squared	0.209097	S.D. dependent var	1.06E+16
S.E. of regression	9.46E+15	Akaike info criterion	76.55996
Sum squared resid	8.94E+32	Schwarz criterion	76.64078
Log likelihood	-457.3598	Hannan-Quinn criter.	76.53004
F-statistic	3.908153	Durbin-Watson stat	1.914949
Prob(F-statistic)	0.076264		

We find that the P-Value of F-statistic and Obs*R-squared are greater than 5%, we can conclude that H1 is accepted and our model is validated and significant.

3.3.3. Testing the model dynamics

The majority of the points must be in the circle, in our case the eviews output shows that all the points are inside the circle. This explains the good dynamics and behaviour of our model.

Table 8: Test of model dynamics



We can deduce that our model is valid and significant and we will then proceed to interpret the results.

3.3.4. Test Overall significance

With regard to our overall test of the model, according to Fisher's assumption when P-value is less than 5%, the model is significant. In our case the P-value is 0.04728 less than 5%, we deduce that our model is globally significant (see table 6 of the model estimate above).

3.3.5. Test Individual Significance

The significance of each exogenous variable allowed us to verify the significance of the one that impacts on the main variable (variable explained: EDI). And we have found that it is the GPIB, TXCR and Tel that have a significant real impact on our main variable. We will summarize in the table below by indicating the expected signs, obtained signs and significance of each variable.

Table 9: Significance and sign of the variables obtained

Explanatory variables	Variable name	Expected sign	Sign Obtained
TXCR	**GdP growth rate**	**+**	**+**
TXID	Foreign direct investment as a percentage of GDP	+	Not significant
TXOUV	Trade opening rate	+	Not significant
GPIB	**State public expenditure on infrastructure**	**+**	**+**
TSP	Level of political stability of the country (business climate)	-	+
KH	Enrolment rate	+	Not significant
TXCHAN	Exchange rates	+	Not significant
TXINF	Annual growth rate of the implicit GDP deflator	-	Not significant
TEL	**Number of mobile phone subscribers**	**+**	**+**

3.4. Interpretation of the results

In this part of our work we will interpret all our results, thanks to the different tests carried out, we found that our starting variables were not all significant and did not allow us to have a good model. We removed the non-significant variables; this allowed us to have a significant model. The results of the tests show us that in the case of Ivory Coast the determinants of attractiveness are as follows:

- **GdP growth rate (TXCR)**
  TXCR is significant with a p-value of 0.017 below 5%, economic growth impacts the decision of investors to locate in Côte d'Ivoire. This is in line with previous theories that a high-growth country is attractive to foreign investors. Its significance allows us to deduce that the flows of incoming foreign direct investment in Côte d'Ivoire are sensitive to its evolution. The positivity of its sign shows us that its increase has a positive effect on FDI. The growth of GDP makes it possible to measure the size of the local market, it can be said that investors are attracted by the consumption of the country's local market.
- **Number of mobile phone subscribers (TEL)**
  Such in our study with an acceptable P-value of 0.0089, it explains the entry of FDI into Ivorian territory. The country with the privatization of telecommunications in the last 10 years has made it possible to attract MNFs for telecommunications. Through their know-how and the involvement of the State, this has made it possible to have high-performance telecommunications infrastructures. This can be seen by a mobile phone penetration rate of more than 100% per 100 inhabitants.

- **State public expenditure on infrastructure (GPIB)**
  Public expenditure by the Ivorian government is one of the main exogenous variables in our model. Its P-value is 0.0026 with an explanatory power of 51.36% on the FDI. We find this impact positive and significant thanks to the Ivorian government's effort, through its national development plan launched to catch up on public investment. The country since the decade of 1997 with the political crises, had stopped these investments in infrastructure As Asiedu (2003) confirms, a country that invests in these infrastructures is more attractive for foreign investors who want to establish themselves there.

In final, we can say from our results that our initial hypotheses 1 and 2 are valid, the growth rate and the State's public expenditure on infrastructure are determining factors in the attractiveness of Cote d'Ivoire. Our hypothesis 3 is not valid; the country's level of political stability has no significant impact on FDI flows. We can explain this by the long history of stability in the country.

4. CONCLUSION

Foreign direct investment (FDI) is essential for global economic development. It is one of the main determinants of development in developing countries. To be achieved, FDI needs to be profitable, from a theoretical point of view; FDI seems to be a major actor in economic growth and development. By acting through several channels, FDI could be of great value to developing countries. Indeed, it is the responsibility of countries to create general, transparent and favorable conditions for the attractiveness of FDI. The objective of our study was to identify the key factors that encourage foreign investors to invest in Côte d'Ivoire. To enable us to achieve our objective, we have put forward three hypotheses:

- H1: Economic growth has a positive and significant impact on FDI flows.
- H2: Public expenditure by the State on infrastructure positively affects the attractiveness of a territory.
- H3: The country's level of political stability has an impact on the flow of foreign direct investment. Instability makes the country less attractive to FDI.

Following the various statistical tests carried out, we find that our Assumptions 1 and 2 are valid. Economic growth and State public expenditure on infrastructure are positive, significant and influence the inflow of FDI flows into Côte d'Ivoire. Hypothesis 3, on the other hand, we did not find a link between the Level of political stability of Cote d'Ivoire and capital from abroad. In conclusion, we can say that in the case of Ivory Coast, the determining factors of the country's attractiveness are the GDP growth rate, the State's public expenditure on infrastructure and the number of mobile phone subscribers.

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APPENDIX

Study Database

Year	IDE	TXCR	TXIDE	TXOUV	GPIB	TPS	KH	TXCHAN	TXINF	TEL
2003	182916156	-1,36	1,08	75,27	5,8334286	40,1	32,1	581	3,3	7,57
2004	261683878	1,23	1,71	84,61	7,05965968	39,2	31	528	1,46	9,77
2005	287939786	1,72	1,83	93,92	7,02291922	39,7	29,9	527	3,89	13,51
2006	291790652	1,52	1,79	95,07	7,69637594	39,2	28,9	523	2,47	23,02
2007	357955939	1,77	2,1	89,44	10,2562163	39,5	29,9	479	1,89	41,61
2008	349728688	2,54	1,84	87,27	11,2168074	39,6	30,3	448	6,31	57,22
2009	319446875	3,25	1,55	90,78	10,819826	40,8	30,8	472	1,02	70,88
2010	272361281	2,02	1,36	93,96	12,3165364	40,5	34,7	495	1,23	82,2
2011	223700332	-4,39	1,17	91,15	9,54886765	40,2	38,6	472	4,91	89,45
2012	404691055	10,71	1,23	92,81	12,4287306	44	40,2	511	1,3	91,23
2013	856400000	8,89	1,3	80,13	18,5308749	46,5	39,2	494	2,58	95,45
2014	439000000	8,79	1,28	73,7	21,4013736	50	41,2	494	0,45	106,25
2015	494000000	9,16	1,54	72,66	18,5782566	52,3	41,2	591	1,24	119,31
2016	481000000	8,76	1,38	62,15	19,9840492	NA	NA	593	0,73	126,01

Stationarity test

Series: GPIB Workfile: BASE DONNEE MODELE ECO::Untitled\

View | Proc | Object | Properties | Print | Name | Freeze | Sample | Genr | Sheet | Graph | Stats

Augmented Dickey-Fuller Unit Root Test on D(GPIB)

Null Hypothesis: D(GPIB) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.732656	0.0208
Test critical values:	1% level	-4.200056	
	5% level	-3.175352	
	10% level	-2.728985	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 11

Series: IDE Workfile: BASE DONNEE MODELE ECO::Untitled\

View | Proc | Object | Properties | Print | Name | Freeze | Sample | Genr | Sheet | Graph | Sta

Augmented Dickey-Fuller Unit Root Test on D(IDE)

Null Hypothesis: D(IDE) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.239026	0.0296
Test critical values:	1% level	-4.992279	
	5% level	-3.875302	
	10% level	-3.388330	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 12

Series: KH Workfile: BASE DONNEE MODELE ECO::Untitled\

View | Proc | Object | Properties | Print | Name | Freeze | Sample | Genr | Sheet | Graph | Stats

Augmented Dickey-Fuller Unit Root Test on D(KH,2)

Null Hypothesis: D(KH,2) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.402667	0.0376
Test critical values:	1% level	-4.297073	
	5% level	-3.212696	
	10% level	-2.747676	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 10

Series: TEL Workfile: BASE DONNEE MODELE ECO::Untitled\

View | Proc | Object | Properties | Print | Name | Freeze | Sample | Genr | Sheet | Graph | S

Augmented Dickey-Fuller Unit Root Test on D(TEL)

Null Hypothesis: D(TEL) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.211135	0.0473
Test critical values:	1% level	-4.200056	
	5% level	-3.175352	
	10% level	-2.728985	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 11

Series: TPS Workfile: BASE DONNEE MODELE ECO::Untitled\

View | Proc | Object | Properties | Print | Name | Freeze | Sample | Genr | Sheet | Graph | S

Augmented Dickey-Fuller Unit Root Test on D(TPS,2)

Null Hypothesis: D(TPS,2) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.894173	0.0043
Test critical values:	1% level	-4.297073	
	5% level	-3.212696	
	10% level	-2.747676	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 10

Series: TXCHAN Workfile: BASE DONNEE MODELE ECO::Untitled\

View | Proc | Object | Properties | Print | Name | Freeze | Sample | Genr | Sheet | Graph | Sta

Augmented Dickey-Fuller Unit Root Test on D(TXCHAN)

Null Hypothesis: D(TXCHAN) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.030658	0.0113
Test critical values:	1% level	-5.124875	
	5% level	-3.933364	
	10% level	-3.420030	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 11

Series: TXCR Workfile: BASE DONNEE MODELE ECO::Untitled\

View | Proc | Object | Properties | Print | Name | Freeze | Sample | Genr | Sheet | Graph | Stats

Augmented Dickey-Fuller Unit Root Test on D(TXCR)

Null Hypothesis: D(TXCR) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.888226	0.0116
Test critical values:	1% level	-4.992279	
	5% level	-3.875302	
	10% level	-3.388330	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 12

Series: TXIDE Workfile: BASE DONNEE MODELE ECO::Untitled\

View | Proc | Object | Properties | Print | Name | Freeze | Sample | Genr | Sheet | Graph | Stats | I

Augmented Dickey-Fuller Unit Root Test on D(TXIDE,2)

Null Hypothesis: D(TXIDE,2) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.201702	0.0347
Test critical values:	1% level	-5.124875	
	5% level	-3.933364	
	10% level	-3.420030	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 11

Series: TXINF Workfile: BASE DONNEE MODELE ECO::Untitled\

View | Proc | Object | Properties | Print | Name | Freeze | Sample | Genr | Sheet | Graph | Stats | I

Augmented Dickey-Fuller Unit Root Test on TXINF

Null Hypothesis: TXINF has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.986804	0.0427
Test critical values:	1% level	-4.992279	
	5% level	-3.875302	
	10% level	-3.388330	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 12

Series: TXOUV Workfile: BASE DONNEE MODELE ECO::Untitled\

View | Proc | Object | Properties | Print | Name | Freeze | Sample | Genr | Sheet | Graph | Stats | I

Augmented Dickey-Fuller Unit Root Test on D(TXOUV,2)

Null Hypothesis: D(TXOUV,2) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.421471	0.0366
Test critical values:	1% level	-4.297073	
	5% level	-3.212696	
	10% level	-2.747676	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 10

Testing simple linear regressions

Equation: UNTITLED Workfile: BASE DONNEE MODELE ECO...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: IDE
Method: Least Squares
Date: 11/03/17 Time: 14:44
Sample: 2003 2016
Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GPIB	23719136	6233342.	3.805204	0.0025
C	80461714	83025810	0.969117	0.3516

R-squared	0.546821	Mean dependent var	3.73E+08
Adjusted R-squared	0.509056	S.D. dependent var	1.67E+08
S.E. of regression	1.17E+08	Akaike info criterion	40.12831
Sum squared resid	1.65E+17	Schwarz criterion	40.21960

Equation: UNTITLED Workfile: BASE DONNEE MODELE ECO...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: IDE
Method: Least Squares
Date: 11/03/17 Time: 14:47
Sample (adjusted): 2003 2015
Included observations: 13 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
KH	18036186	9097402.	1.982564	0.0729
C	-2.57E+08	3.16E+08	-0.811722	0.4342

R-squared	0.263256	Mean dependent var	3.65E+08
Adjusted R-squared	0.196279	S.D. dependent var	1.71E+08
S.E. of regression	1.53E+08	Akaike info criterion	40.67523
Sum squared resid	2.59E+17	Schwarz criterion	40.76215
Log likelihood	-262.3890	Hannan-Quinn criter.	40.65737
F-statistic	3.930562	Durbin-Watson stat	1.920226
Prob(F-statistic)	0.072949		

Equation: UNTITLED Workfile: BASE DONNEE MODELE ECO...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: IDE
Method: Least Squares
Date: 11/03/17 Time: 14:48
Sample: 2003 2016
Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TEL	2297957.	960457.9	2.392564	0.0340
C	2.20E+08	74612944	2.946174	0.0122

R-squared	0.322966	Mean dependent var	3.73E+08
Adjusted R-squared	0.266546	S.D. dependent var	1.67E+08
S.E. of regression	1.43E+08	Akaike info criterion	40.52974
Sum squared resid	2.46E+17	Schwarz criterion	40.62103
Log likelihood	-281.7082	Hannan-Quinn criter.	40.52129
F-statistic	5.724361	Durbin-Watson stat	1.809529
Prob(F-statistic)	0.033976		

Equation: UNTITLED Workfile: BASE DONNEE MODELE ECO...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: IDE
Method: Least Squares
Date: 11/03/17 Time: 14:50
Sample (adjusted): 2003 2015
Included observations: 13 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPS	24347370	9039416.	2.693467	0.0209
C	-6.68E+08	3.85E+08	-1.733809	0.1109

R-squared	0.397418	Mean dependent var	3.65E+08
Adjusted R-squared	0.342637	S.D. dependent var	1.71E+08
S.E. of regression	1.39E+08	Akaike info criterion	40.47421
Sum squared resid	2.12E+17	Schwarz criterion	40.56113

Equation: UNTITLED Workfile: BASE DONNEE MODELE ECO...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: IDE
Method: Least Squares
Date: 11/03/17 Time: 14:52
Sample: 2003 2016
Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TXCHAN	114310.1	1051791.	0.108681	0.9153
C	3.14E+08	5.44E+08	0.578071	0.5739

R-squared	0.000983	Mean dependent var	3.73E+08
Adjusted R-squared	-0.082268	S.D. dependent var	1.67E+08
S.E. of regression	1.74E+08	Akaike info criterion	40.91879
Sum squared resid	3.63E+17	Schwarz criterion	41.01008
Log likelihood	-284.4315	Hannan-Quinn criter.	40.91034
F-statistic	0.011812	Durbin-Watson stat	1.188724
Prob(F-statistic)	0.915251		

Equation: UNTITLED Workfile: BASE DONNEE MODELE ECO...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: IDE
Method: Least Squares
Date: 11/03/17 Time: 14:53
Sample: 2003 2016
Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TXCR	27010355	7152473.	3.776366	0.0026
C	2.68E+08	42044928	6.366623	0.0000

R-squared	0.543048	Mean dependent var	3.73E+08
Adjusted R-squared	0.504968	S.D. dependent var	1.67E+08
S.E. of regression	1.18E+08	Akaike info criterion	40.13660
Sum squared resid	1.66E+17	Schwarz criterion	40.22789
Log likelihood	-278.9562	Hannan-Quinn criter.	40.12815
F-statistic	14.26094	Durbin-Watson stat	3.003203
Prob(F-statistic)	0.002641		

Equation: UNTITLED Workfile: BASE DONNEE MODELE ECO...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: IDE
Method: Least Squares
Date: 11/03/17 Time: 14:55
Sample: 2003 2016
Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TXIDE	-66330951	1.58E+08	-0.419621	0.6822
C	4.73E+08	2.43E+08	1.944996	0.0756

R-squared	0.014461	Mean dependent var	3.73E+08
Adjusted R-squared	-0.067667	S.D. dependent var	1.67E+08
S.E. of regression	1.73E+08	Akaike info criterion	40.90521
Sum squared resid	3.58E+17	Schwarz criterion	40.99650
Log likelihood	-284.3364	Hannan-Quinn criter.	40.89676
F-statistic	0.176082	Durbin-Watson stat	1.275425
Prob(F-statistic)	0.682177		

Equation: UNTITLED Workfile: BASE DONNEE MODELE ECO...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: IDE
Method: Least Squares
Date: 11/03/17 Time: 14:55
Sample: 2003 2016
Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TXINF	-22595474	27414640	-0.824212	0.4259
C	4.26E+08	78545831	5.422943	0.0002

R-squared	0.053577	Mean dependent var	3.73E+08
Adjusted R-squared	-0.025291	S.D. dependent var	1.67E+08
S.E. of regression	1.69E+08	Akaike info criterion	40.86471
Sum squared resid	3.44E+17	Schwarz criterion	40.95600
Log likelihood	-284.0530	Hannan-Quinn criter.	40.85626
F-statistic	0.679325	Durbin-Watson stat	1.478313
Prob(F-statistic)	0.425898		

Equation: UNTITLED Workfile: BASE DONNEE MODELE ECO...

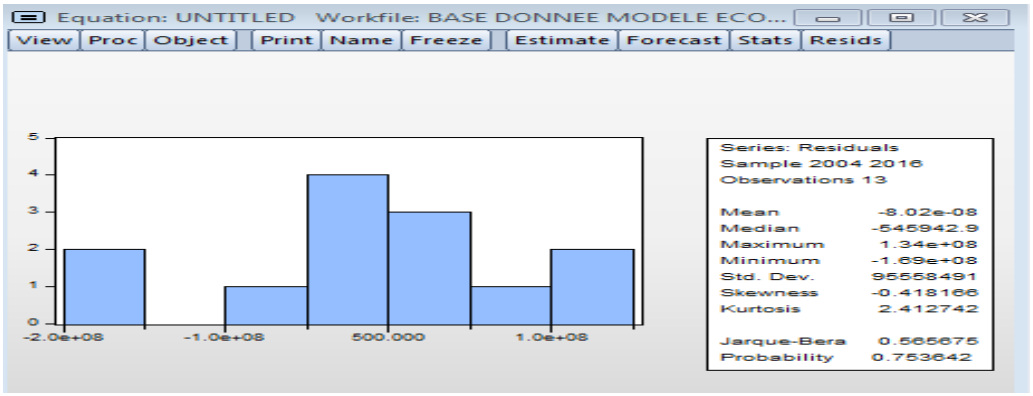
View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: IDE
Method: Least Squares
Date: 11/03/17 Time: 14:56
Sample: 2003 2016
Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TXOUV	-6549174.	4373198.	-1.497571	0.1601
C	9.26E+08	3.72E+08	2.490551	0.0284

R-squared	0.157464	Mean dependent var	3.73E+08
Adjusted R-squared	0.087253	S.D. dependent var	1.67E+08
S.E. of regression	1.60E+08	Akaike info criterion	40.74843
Sum squared resid	3.06E+17	Schwarz criterion	40.83973
Log likelihood	-283.2390	Hannan-Quinn criter.	40.73998
F-statistic	2.242718	Durbin-Watson stat	1.392683
Prob(F-statistic)	0.160080		

Normal Law



SUBJECTIVE VISION OF YOUNG PEOPLE ABOUT THE LIFE QUALITY IN THE REPUBLIC OF KHAKASIA

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ABSTRACT

The article deals with the subjective vision of young people about the life quality in the Republic of Khakasia. Methodological basis of the research is a subjective well-being approach or "felt life quality". The following components of life quality are described: cognitive (rational) and emotive (emotional) components. The rational component of life quality is measured by life satisfaction and its separate aspects; emotional component reflects a balance between positive and negative emotional states of the personality. Life quality of young people in the Republic of Khakasia was studied in the context of life quality improvement conception which is oriented at a balanced combination of all spheres in the life of the society and a person. The following diagnostic methodology was used in the empirical study: the Russian version of the international standardized questionary of life quality SF-36 (online), in which physical functioning, role-physical functioning, pain, general health, stamina, social functioning, emotional functioning, psychological functioning of young people were assessed and psychological well-being questionary by C. Ryff adapted by T.D. Shevelenkova and P.P. Fesenko. In general, the above mentioned methodology managed to reveal low, medium and high levels of psychological well-being of young people. The assessment scale of life quality (N.E. Vodopianova, N.P. Fetiskina, T. I. Mironova) was according to 9 items: job, personal achievements, health, communication with relatives and friends, support (internal and external), optimism, tension, self-control, negative emotions. It was discovered that subjective vision of young people about the life quality in the Republic of Khakasia reflect complex social phenomenon, including such markers as "satisfaction with life", "the importance of private life", "satisfaction with private life" and "the level of happiness". The discussion and understanding of life quality markers will allow young people to improve the nearest and long-range objectives, develop strategies and means of their achievement.

Keywords: *quality of life, indicators of quality of life, subjective ideas about the quality of life, health, psychological health, social health, psychological well-being*

1. INTRODUCTION

The problem of young people quality of life is essential and is a strategic goal of Russian Federation development. The study of the problem was carried out beginning with the mid-20th century by foreign and native scientists within the framework of the "objective well-being" and "subjective well-being" approaches (Almakaeva A. M, 2006, p.42). From the points of view of the "objective" approach the quality of life is studied through a set of statistical figures: R. Bauer, A. Biderman, B. Gross, O. D. Duncan, and others. In Russia the representatives of this approach are S.A. Ivazayn, V.V. Kossov, V. Bobkov, P. Mstislavsky and others.

The study of the subjective vision of young people about the life quality in the Republic of Khakasia is carried out within the framework of the "subjective well-being" approach or "felt life quality" (Almakaeva A. M, 2007, p.4). The representatives of the "subjective well-being" approach study the quality of life through the consciousness of a person, his satisfaction with life and its aspects. The studies of the quality of life in the West were carried out by N.M. Bradburn, S. MacCall, K. Terhune, A Mischel, T. Logoletti, R. Kantor, M. Argyle (Argyle, M., 2003). In Russia the quality of life within the framework of the "subjective well-being" approach were studied by A.S. Todorov, I.S. Popov, I. T. Levykina, O.L. Barskaya and others. Cognitive (rational) and emotive (emotional) components are distinguished in its structure by both Russian and foreign scientists. The rational component of life quality is measured by life satisfaction and its separate aspects; the emotional component reflects a balance between positive and negative emotional states of the personality. The quality of person's life is analyzed by different psychological schools. Phenomenological psychology is directed at the description of the personality's consciousness; it studies the problems of its subjectiveness and unique features of personality's emotional experience. This psychology is based on the ideas of E. Husserl and his disciples: A. Pfender, M. Geiger, J.P. Sartre, M. Merleau-Ponty, A. Schutz and others. K. Jaspers, E. Minkowski, H. Elenberg, F. Perls, C. Rogers and others referred to the main ideas, principles and methods of phenomenology in psychology. Among modern scientists are A. Giorgi, E. Gendlin and A. Langle. Summing up different approaches, it can be noted that the transformation of the quality of life is a continuous process and researchers tend towards a "subjective well-being" approach as being the most suitable in dealing with the notion. For example, I. Iliin makes the point that "the representatives of different studies stand in full solidarity with each other in distinguishing the main features of life quality, namely, physical health or physical well-being, material wealth, interpersonal relationship well-being and social and psychological well-being" (Iliin I.A., 2000). The quality of life in psychology is considered actually as a synonym of subjective well-being or confined to its cognitive component – satisfaction with life (Ilic I., Milic I., 2010, p. 52—60). The main purpose of diagnosis is a discovery of a general level of the subjective well-being of a concrete person. Respectively, the main features of young people life quality studies were marked as physical health, social health (social activity) and psychological health or well-being, which determined the choice of methodology for studying.

2. THE OBJECTIVES AND METHODOLOGY OF STUDY

Young people quality of life in the Republic of Khakasia is studied within the concept of life quality improvement, focused on a balanced combination of all spheres in the life of the society and a person. The study of subjective vision of young people about the life quality in the Republic of Khakasia was carried out within the "subjective" well-being approach or "felt life quality". Russian and foreign scientists distinguish cognitive (rational) and emotive (emotional) components in its structure. The rational component of life quality is measured by life satisfaction and its separate aspects; the emotional component reflects a balance between positive and negative emotional states of the personality. The goal of research was the discovery of the subjective vision of young people about the quality of life in connection with its psychological health and well-being, quality of life and satisfaction with social life. Methods of study: standardized questionary of life quality SF-36, psychological well-being questionary by C. Ryff adapted by T.D. Shevelenkova and P.P. Fesenko, the assessment scale of life quality (N.E. Vodopianova in adaptation of N.P. Fetiskin, T. I. Mironova). Research objectives:

1. To discover quality life markers, physical and psychological components of health, using international standardized questionary of life quality SF-36 (online).
2. To discover the components of psychological well-being on the basis of the questionary by C. Ryff adapted by T.D. Shevelenkova and P.P. Fesenko.

3. To discover the level of satisfaction of young people with social life, using assessment scale of life quality, general index of life quality.

2.1. Empirical selection of the study

Undergraduates of the 1st year majored in 44.03.02 – Psychology and Pedagogics, undergraduates of the 4th year majored in 44.03.05 - Pedagogics, specialized in Biology, Chemistry, Health and Safety Training Course, undergraduates of the 4th year majored in 06.03.01 Biology, specialized in Bioecology, 44.03.01 – Legal studies on the basis of three departments of the Khakas State University n.a. N.F. Katanov: the Institute of Continuous Pedagogical Education, the Institute of Natural Sciences and Mathematics, the Institute of History and Law.

3. THE ANALYSIS OF THE RESULTS ACCORDING TO QUESTIONARY OF LIFE QUALITY MOS SF-36

For diagnostic purposes we used a short version of questionary of life quality SF-36 (MOS SF-36). The questionary consists of 11 parts and the results of online diagnosis are represented in percentage points from 0 up to 100 according to 8 assessment scales and 2 integrative features.

Table 1: Average quality life parameters

№	**Assessment scale**	**Average points (M) in %**
1	Physical Functioning – PF	92.9
2	Role-Physical Functioning – RP	80.9
3	Bodily pain – BP	76.6
4	General Health – GH	66.4
5	Physical health component	51.9
6	Vitality – VT	62
7	Social Functioning – SF	85
8	Role Emotional – RE	72
9	Mental Health – MH	70
10	Psychological health component	47.4

As a result of the descriptive analysis of the questionary SF-36 (questionary of life quality) we got the following figures according to the scale of the questionary (Table 1). The highest figures in the selection are seen in the scale of Physical Functioning (M=92.9) and Role-Physical Functioning (M=80.9), which may be evaluated as a high level of life vitality, accompanied by a high vital tonus, good health, enabling effective working career. It is also characterized by such parameters as the self-care ability, walking, climbing the stairs without any stress for heart-vascular system, carrying heavy weights, doing sport and others. High figures according to the to the scale of Bodily pain (M=76.6) serve as evidence of the fact that examinees are able to move actively without any sensation of pain; the lower the figure is, the higher is the level of pain which prevents a person from performing cognitive and social functions in everyday life. The figures according to the scale of Role Emotional (M=72) can also be referred to high average parameters, the data can be interpreted as an ability to control one's own emotions, to use effective situations, coping strategies in a stressful situations and to fulfill social roles to the fullest extent. The scales of the questionary are organized in two groups: Physical health component and Psychological health component. Physical health component consists of such scales as Physical Functioning, Role-Physical Functioning, Bodily pain and General Health (51.9). Social Functioning scale also gave high figures (M=85), which characterizes the level of social activity, the ability to abstract one's mind from directions and to include personal

meaning into the activity, to demonstrate conative component when making a decision and being satisfied with one's own social contacts and activity. Mental Health is an integral parameter and describes a general disposition of examinees (M=70), the results can be interpreted as the dominance of sthenic emotions and balanced emotional disposition. Mental Health component consists of Mental Health, Role Emotional, Social Functioning and Vitality (47.4). The results of Mental Health component are average in comparison with the standard figures. Consequently, one can suppose that the examinees are inclined to dysphoria with the dominance of asthenic emotions and being unsatisfied with the real-life situation in general.

4. THE ANALYSIS OF THE RESULTS ACCORDING TO QUESTIONARY OF LIFE QUALITY

The results of the young people satisfaction with their social life on the basis of the life quality scale are represented in Table 2.

Table 2: The levels of young people quality of life

Parameters	**Low level**, (number of people)	% from total number of examinees	**Average level** (number of people)	% from total number of examinees	**High level** (number of people)	% from total number of examinees
Job	22	**18.96**	40	**34.48**	54	**46.55**
Personal achievements	40	**34.48**	48	**41.37**	28	**24.13**
Health	36	**31.03**	38	**32.75**	42	**36.2**
Communication with friends and relatives	42	**36.2**	38	**32.75**	36	**31.03**
Support	36	**31.03**	48	**41.37**	32	**27.58**
Optimism	40	**34.48**	48	**41.37**	28	**24.13**
Tension	30	**25.86**	44	**37.93**	42	**36.2**
Self-control	26	**22.4**	32	**27.58**	58	**50**
Negative emotions	30	**25.86**	60	**51.72**	26	**22.41**

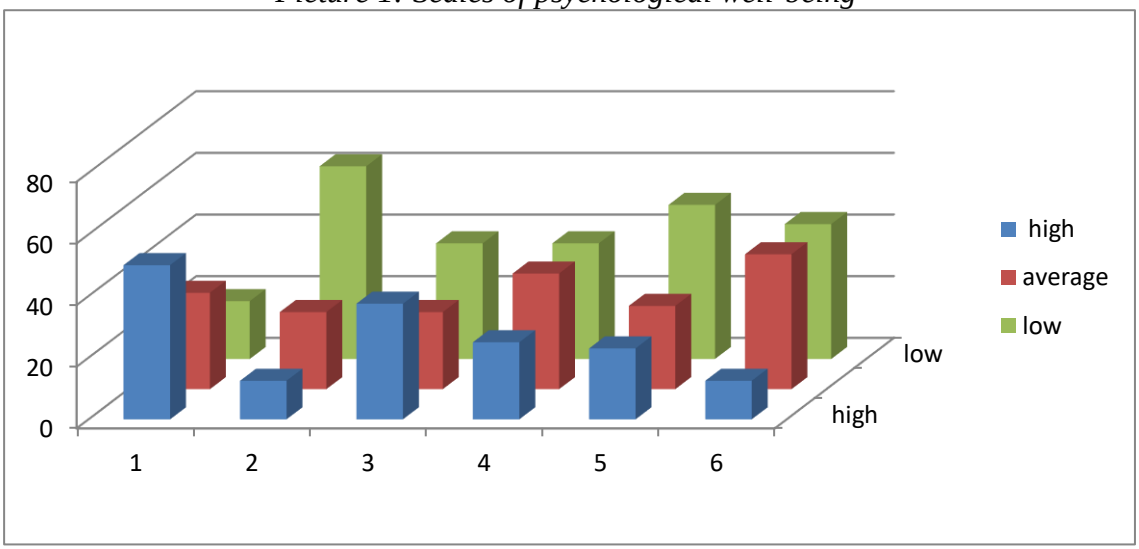
The study of students' satisfaction according to the parameter "job" (career) was aimed at finding a correspondence between a job and examinee's interests and expectations, evaluation of relationships with colleagues, financial state and future prospects of his career in general. Almost half of examinees 54 people (46.55%) showed a high level of satisfaction with their job, 40 people (34.48%) showed the average level and 22 people (18.96%) demonstrated a low level of satisfaction with their real-life situation. In general, the assessment of this parameter is high enough though there is some difference in its assessment among students of the 1st year – arithmetic mean value is 30.73 points and among students of the 4th year it varies from 26.3 to 28.5 points. The parameter "personal achievements" included examinees' assessment of their achievements, identification of oneself with a successful person, self-respect, focusing on life values and principles, respect in professional sphere. The results are the following: less than a quarter of the examinees 28 people (24.13%) think that they have a high achievement level, 48 people (41.37 %) are satisfied with their achievements on the average level, 40 people (34.48%) are satisfied with their achievements on a low level. In general, arithmetic mean value varies from 29.1 points among the 1st year students to 25.6 points among the 4th year students which is closer to the assessment of their own achievements on the average level. The parameter "health" was assessed by examinees as a state of person's harmony, mental, physical and psychological balance in their organism and included such parameters as satisfaction with

physical activity, sleep and fit. Though the results differ in levels but they are of the same character: 42 people (36.2%) are completely satisfied with their health, which corresponds to the high level, 38 people (32.75 % are satisfied with their health on the average level and 36 people (31.03 %) have a low level of satisfaction with their health. The average figure of this parameter among the 1st year students is 29.5 points while the 4th year students have from 26.1 points to 29.4 points which corresponds to the average level of satisfaction with this sphere of activity among young people. Young people satisfaction with the quality of communication with relatives and friends, with children and representatives of opposite sex is assessed in the following way. 36 people (31.03 %), are satisfied with this parameter on a high level, 8 people (32.75%) - on the average level and 42 people (36.2%) have a low level of satisfaction. The average figure on this parameter among the 1st year students is 28.2 points. Four students of the 1st year did not give assessment to the intimate communication. Eight students of the 4th year assessed intimate communication low, which gives evidence of having problems in communicating with the opposite sex. Arithmetical mean value among students of the 1st and 4th year increases from 27.7 to 29.6 points, which gives evidence of the average level of young people's satisfaction with the quality of communication. The parameter "support" (inner and outer) implied the assessment of mental and religious support, moral and emotional support of close people, professional support of young people and the assessment of their personal inner resources. The students assessed this sphere of life in the following way: 32 people (27.58%) – high level, 48 people - (41.37 %) – average level, 36 people (31.03 %) - low level. The average figures of this parameter among the 1st year students are 28.9 points, among the students of the 4th year they are 24 to 26.5 points. These figures give evidence of the average level of students' satisfaction with the parameter "inner and outer support". The parameter "optimism" points indirectly at the ability of a person to build his life's activity independently and to manage his inner mental states as well as his emotional expression. The results are as follows: 28 people (24.13 %)- assessed their optimism at high level, 48 people (41.37) – at average level, 40 people (34.48%) – assessed their optimism at low level. The average figures of the parameter "optimism" among the 1st year students and the students of the 4th year are practically similar – 24.3 and 24.5 points, which gives evidence of the average level of students' satisfaction with the parameter "optimism". The parameter "tension" as a category of life activity is a consequence of having time-management skills, accepting subjective environment as unpleasant and dangerous, exhaustion and constant tension as well as the consequence of going through a life crises. The examinees assessed "tension" as follows: 42 people (36.2%) think that their tension is at high level, 44 people (37.93 %) – at the average level and 30 people **(**25.86 %) – at low level. The arithmetic mean value among the 1st year students and the students of the 4th year increased from 27.8 to 28.6 points, which gives evidence of the average level of tension. Self-control, the ability to make decisions, executive force, and the ability to adapt to any new situation allows assessing self-control as a characteristic of person's self-consciousness. Half of the examinees – 58 people think that they have a high level of self-control in life, 32 people (27.58 %) have the average level and 26 people (22.4 %) have a low level of self-control. The arithmetic mean value among students corresponds to the average level: from 27.2 among the 1st year students to 28.6 points among the students of the 4th year. Negative emotions are able to impair the quality of life. Every person experiences negative emotions which are manifested as a sense of guilt and shame, fear and anxiety, offence towards other people. Only 30 people (25.86%) have negative emotion at low level, 60 people (51.72 %) have negative emotion at the average level and 26 people (22.41%) assessed manifestation of negative emotions at high level. The arithmetic mean value varies from 22.3 among the 1st year students to 25.1 points among the students of the 4th year which gives evidence of the average level of negative emotions among young people.

5. THE ANALYSIS OF THE RESULTS ACCORDING TO PSYCHOLOGICAL WELL-BEING QUESTIONARY BY C. RYFF

These days, while the system of higher education is in a state of reform, training requirements are rising. Not only is the level of professional competence essential but also the level of his personal readiness, which is an important condition for successful professional activity. Against a backdrop of professional qualities a search of integral personal qualities, which are necessary for effective professional activity in the sphere of helping professions is in progress. Psychological well-being of a personality can be considered as one of the integral quality (Ryff, Keyes, 1995). The results according to psychological well-being questionary by C. Ryff are represented in picture 1.

Picture 1: Scales of psychological well-being



Notes: 1 – positive relationships with others; 2 – autonomy; 3 – environment control; 4 – life goals; 5 – sense of purpose; 6 – self-acceptance

The analysis of the results according to the scale "positive relationships with others" demonstrated that half of the students (50%) have high points and only 18.75% showed low points. The answers of 31.25% examinees may be referred to normal figures. The results allow us to make a conclusion that the majority of students do not have problems in the sphere of personal relationships. They have open, confiding relationships, a sense of devotion to close people as well as the ability of sympathy and emphathy. It is seen in picture 1 that the majority of examinees (62.5%) have a high level according to the scale "autonomy". It can be supposed that students had to adapt to new conditions and requirements, which gave rise to negative experience in communication with close adult people. Low figures were discovered only among 12,5% of examinees. According to the scale "life goals" we can form an opinion about a personality orientation. Only 25% of students showed a high level according to this parameter, i.e. only a quarter of our students sticks to some creed and has definite intentions and goals for future life. 37.5% of examinees had low points, which can be considered as the absence of a sense of purposefulness as well as perspectives and creeds, determining sense of life. According to the parameter "environment control" the number of students having high and low points has spread in equal proportions (37.5%). In this case there are students who are able to control their activity and to use chances effectively to realize their personal needs. They differ from others in the way that they are proactive in trade union organization, in voluntary movement and other mass cultural events. Other students experience difficulties in organizing their activity, feel unable to change or improve circumstances. Additional analysis allowed us to discover that it is typical of the 1st year students, which is an expected result.

A special attention should be paid to the figures according to the scale "sense of purpose". 50% of students had low points which can be considered as the absence of any evident life perspectives, the predominance of boredom and aimlessness, which is evident in studying. The results according to the scale "self-acceptance" turned out to be interesting. Students have equal low (43.75%) and standard (43.75%) figures according to the criteria. It can be supposed that the majority of examinees are not satisfied with themselves, with their past or with some of their personal qualities. The total analysis of the results according to all scales allowed us to see the integral criterion of psychological well-being of students. As a result we see the predominant low level of psychological well-being among 56.25% of students, a standard level among 12.5% of students and a high level among 31.25% of students.

6. CONCLUSION

Thus, it can be said that one of the tendencies of interpreting psychological well-being is harmoniousness of the personality, its integrity which depends on the clear purposes, resources for reaching the goals, success in realization of his plans, satisfaction with his interpersonal relationships and positive emotions (Seifert, 2004). All above mentioned allows us to point out some peculiarities of the subjective vision of young people about the quality of life, that is the majority of students lack goals, life intentions and, in total, a sense of purposefulness. The most alarming symptom is the absence of perspectives and creed, determining a sense of life, which can form a passive attitude to getting knowledge and the chosen profession. It is noted that they have impulsiveness in their behavior, constriction in their reaction and focusing on the outer control. One of the important facts is that the majority of students tend to shift the responsibility onto the others. However, it should be paid attention to the fact that the group of students under study have high figures for physical health, which allows assessing their level of life activity as high enough, accompanied by high vital tonus, good health, promoting effective professional experience. This fact differs from the criteria of psychological component of health. Dysphoria is typical of the majority of our examinees, the predominance of asthenic emotions, subjective feelings of their psychological ill-being and dissatisfaction with the real-life situation on the whole. Conspicuous is the fact that young people are dissatisfied with their quality of communication with close people and friends, children and representatives of opposite sex. These figures give evidence of the fact that the majority of students are unfriendly, incommunicative, prefer loneliness while other group of examinees are excessively communicative. Such students prefer to take part in all discussions even if serious topics make them uncomfortable. They willingly take the floor even if they have a superficial knowledge about it. Such category of students makes new acquaintances easily, like to be in the centre of attention and do not refuse making a favour though they cannot always help others. The above mentioned peculiarities of students should be taken into account according to the compensation principle of problematic sides of their development.

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INFLUENCE OF GENDER AND CULTURAL BACKGROUND ON PROFESSIONAL HEALTH OF SALES MANAGERS

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ABSTRACT

The article describes the results of the comparative analysis of the professional health components of sales managers, depending on gender and cultural affiliation on the example of the specialists of the Republic of Khakassia. Psychodiagnostic methods were used in the empirical part of the work: E. Shostrom's self-actualization test in the adaptation of L.J. Gozman, Y.E. Aleshina, M.V. Zagika and M.V. Croz; H. Hekhausen's motivational test in the adaptation of L.N. Sobchik; G. Gowh's California personal questionnaire in the adaptation of N.A. Grafinina and N.V. Tarabrina; professional health questionnaire developed by G.S. Nikiforov; quality of life questionnaire SF - 36; G.V.Zalevskiy's rigidity-flexibility questionnaire. As a result of the study, it was found that the level of the professional health of sales managers depends on gender and cultural affiliation. Male sales managers have higher indicators of the development of physical and social structural components of the professional health. Female managers have identified significant differences in the preferential use of social support and external locus control. The Khakass sample of sales managers as a whole has higher indicators for the physical component of the professional health, such as PF (physical functioning) which characterizes physical activity, life tone, vigour, workability, but it also includes higher indicators for the criterion - emotional burn-up: reduction and emotional exhaustion, as a coping strategy it characterizes the preferential use of preventive and anticipatory control. The Russian sample of sales managers revealed significant differences in the psychological component of the professional health, in particular higher memory indicators. As an effective coping strategy Russian sales managers mainly use strategic planning.

Keywords: *professional health, components of professional health, psychological health, social health, physical health, coping strategies*

1. INTRODUCTION

The study of the health issues is one of the priority areas of foreign and national psychology and forms the basis of an independent psychological discipline called health psychology, in which the interest to the problem of professional health is becoming more significant every year. According to the Declaration of the International Commission on Occupational Health (ICOH), 160 million people face occupational health problems. The world Health Assembly resolution "Workers' Health: global plan of action 2008-2020 "recommends the use of measures to promote healthy lifestyles and to prevent non-communicable diseases in the workplace. A significant contribution to the development of this problem can be made by occupational health psychology (occupational health psychology) as a new scientific and practical direction that is developing at the intersection of applied disciplines such as health psychology, organizational psychology and labor psychology. It should be noted that in the modern scientific literature there is no generally accepted approach to the definition of "professional health". Interest and awareness of the importance of developing the theoretical and methodological foundations of

occupational health psychology has only emerged in recent years. In Russian psychology, the study of professional health is conceptualized as a systemic quality of a specialist that ensures professional efficiency (A. G. Maklakov, 1996); as a phenomenon that dynamically changes during ontogenesis (G. S. Nikiforov, 2006). Professional health is also considered as an integral characteristic of the conditions and properties of the subject of labor, the ability to overcome stress (N. E. Vodopyanova, 2009). I. P. Bobrovnitsky, A. N. Razumov distinguish "generalized characteristics of the individual health" and their influence on professional reliability (I. P. Bobrovnitsky, A. N. Razumov, 2002); R. A. Berezovskaya emphasizes that the state of professional health depends on the physical, mental and social well-being of the individual. It should be noted that all these definitions have in common the consideration of occupational health as an integrative education within the system of "reliability" - " productivity" - "efficiency" of the activity. The state of professional health is determined by the reserves of functional capabilities of the human body in relation to ensuring high reliability of professional activity. It is noted that professional health depends on the ability of the body to restore the disturbed functional state in accordance with the characteristics of the content and the mode of professional activity and it can be considered as a measure of social and psychological well-being, as well as one of the most important criteria for the quality of professional life. The criteria of professional health are described: adaptability of coping strategies, maturity of mechanisms of psychological protection (A. L. Katkov, 2002); emotional and behavioral flexibility, internal locus of control, synergy, competence in time, creativity (T. G. Glukhova, 2003); efficiency (V. I. Shostak, L. A. Yanshina, 1993); reflexive self – regulation (G. G. Verbina, 2011); psychological safety (N. V. Kozlova, A. S. Gulyaev, 2012); high level of self-consciousness development (S. D. Tsydypova, 2013) and others. Accordingly, the concept of professional health integrates the complex relationship of the person with the professional environment; it is a measure of the coherence of social needs of the society and human capabilities in the conditions of professional activity. However, it remains a problem area to identify psychological factors that affect professional health, in particular, there are no researches on the impact of gender and cultural background on the phenomenon under study.

2. METHODOLOGICAL BASIS AND RESEARCH METHODS

The methodological basis of the study was: the theory of the activity and the concept of the subject of the activity (L. S. Vygotsky, O. A. Konopkin, A. A. Smirnov, D. N. Uznadze, A. G. Asmolov, E. A. Klimov); the position of regularities and mechanisms of professional and personal development as the subject of the activity (K. A. Abulkhanova-Slavskaya, B. G. Ananyev, A. A. Bodalev, A. A. Derkach, A. K. Markova, Yu. P. Povarenkov, etc.); theoretical positions formulated in the framework of the psychology of professional health (A. G. Maklakov, G. S. Nikiforov, N. V. Vodopyanova, R. A. Berezovskaya and others.)

- **The purpose of the study:** to determine the influence of gender and cultural background on the professional health of sales managers.
- **The empirical hypothesis of the study:** gender and cultural background cause the differences in the levels of physical, psychological and social health of sales managers.
- **Research methods:**
  1. the questionnaire for professional health assessment developed by G. S. Nikiforov, E. S. Starchenkova, N. E. Vodopyanova, R. A. Berezovskaya;
  2. the method for assessing the quality of life “SF-36 Health status survey”, adapted by employees of the analytical sector of the International Research Center for the quality of life in St. Petersburg.
- **Empirical sample:** sales managers working in various commercial organizations of the Republic of Khakassia (N=244).

3. DISCUSSION OF RESEARCH RESULTS

To identify the impact of the factors such as gender, culture, and age on the professional health of sales managers, we performed a one – factor variance analysis (ANOVA-Analysis of Variation). One-factor variance analysis is necessary to check the significance of the differences between the average values in different groups by comparing the variances of these groups. Dividing the total variance into multiple sources (related to different effects in the plan) allows to compare the variance caused by the differences between the groups with the variance caused by the intra-group variability. The tested hypothesis is that there is no difference between the groups. As a result of the analysis, we identified the following significant differences in occupational health depending on gender (table.1).

Table 1: Significant differences in occupational health indicators for men and women

The name of the scale	**men**		**women**		F - criterion	Significance Level
	Average value	**Standard deviation**	**Average value**	**Standard deviation**		
GH-General health	75,1	1,72	62,1	1,65	21,23	0,01
Vivacity	6,7	1,03	3,2	1,09	27,45	0,01
Activity	6,4	1,07	4,2	1,13	14,21	0,01
Professional competency	6,5	1,27	3,2	1,46	18,54	0,01
Professional authority	5,8	1,23	4,2	1,18	17,32	0,01
The control of the competent others	3,8	1,64	5,9	1,53	22,46	0,01
Social support	3,5	1,05	6,2	1,07	18,23	0,01

As it can be seen from table 1, the average values for five indicators for men are significantly higher than for women. Higher indicators for General health (Mm=75.1, δ=1.72), the scale determines the general state of physical health, vital tone, the level of vital energy, it is an integrative indicator for the physical component of professional health and combines such scales as: physical and role functioning, the presence and the intensity of pain when performing physical activities and functional duties. Physical and role-based functioning is important for performing social and professional functions of a sales manager. The higher the level of general health, the better the person performs their professional duties, with less energy costs and with greater productivity. The variance analysis also revealed significant differences between men and women in terms of the physical component of occupational health (occupational health questionnaire). Men have significantly higher indicators, such as higher levels of alertness (Mm=6.7, δ=1.03) and activity (Mm=6.4, δ=1.07). Our results are comparable to the researches (U. Lundberg, M. Frankenhaeuser, 1999), which conducted a comparative analysis of the professional health of managers of men and women and revealed the following features: women are more fatigued and less stress-resistant than men, because they experience overload not only at work, but also at home. It was also found that the content of noradrenaline (the stress hormone) in women is higher than in men, both during and after work, which corresponds to a greater load of women and less ability to distance themselves from work. There is also a significant difference in the social component of occupational health in men and women. Men have significantly higher average values on the professional competence scale (Mm=6.5, δ=1.27), i.e. men on average rate their level of professional competence and their ability to cope with professional tasks higher than women. The analysis of variance revealed significant differences on the professional authority scale (Mm=5.8, δ=1.23), therefore, men increasingly than women consider themselves influential in the professional community, and men generally

more satisfied with their own professional role and relationships with the team. Women have significantly higher indicators on the scale of control by competent others (Mw=5.9, δ=1.53), it can be assumed that social assessment and relationships in the team are more important for women than for men. According to the social support scale, women (Mw=6.2, δ=1.07) also have significantly higher indicators than men, which can be interpreted by the need of women in critical and stressful situations to seek social approval and the desire to maintain a positive psychological climate in the professional environment. Our data correlate with the study conducted in the Netherlands (Giedo Van Der Pumpe & Peter De Heus, 1993), where it was found that women more often use social support than men. The authors consider positive relationships at work, social support, and emotional care as a way to increase the psychological resource of employees and the subjective experience of well-being. Thus, the indicators of professional health for two components: physical and social, are higher for men than for women. For the psychological component of professional health, significant differences were found only in the parameters of the locus of control, i.e. women prefer to focus on the opinion of competent employees and reference others when making significant vital decisions. The one-factor variance analysis also allowed us to identify significant differences in occupational health depending on cultural background. The study involved Khakas (N=103) and Russian (N=141) sales managers, table 2 clearly shows significant differences depending on the socio-cultural factor.

Table 2: Significant differences in occupational health indicators depending on cultural background

The name of the scale	**Khakas**		**Russian**		F - criterion	Significance Level
	Average value	**Standard deviation**	**Average value**	**Standard deviation**		
PF	82,1	2,12	71,5	2,4	12,32	0,001
Vivacity	6,81	2,14	5,28	1,64	5,58	0,01
Calm	1,85	2,36	3,58	2,69	11,68	0,001
Emotional stability	3,13	1,35	4,53	1,39	6,68	0,01
Efficiency	6,5	1,2	5,4	1,23	6,68	0,01
Memory	5,41	3,26	6,91	3,76	24,06	0,001
Emotional exhaustion	7,41	1,37	5,4	1,38	8,04	0,005
Reduction	11,46	2,08	8,29	2,77	26,22	0,001
Preventive / anticipatory coping	5,3	1,95	4,1	1,12	8,04	0,005
Strategic planning	3,4	1,19	5,16	1,73	24,06	0,001

As can be seen from table 2, the Khakass sample of sales managers in general showed higher indicators for the physical component of professional health, namely: PF (physical functioning), characterizes physical activity, vitality (M=82.1, δ=2.12), cheerfulness (M=6.81, δ=2.14), performance (M=6.5, δ=1.2), but also higher indicators for the criterion – emotional burnout: reduction (M=11.46, δ=2.08), emotional exhaustion (M=7.41, δ=1.37). The Russian sample of sales managers showed significant differences in the psychological component of professional health, in particular, higher memory indicators (M=6.91, δ=3.76). As for the differences in coping strategies, it was found that the Russian sample is more characterized by strategic planning (M=5,16, δ=1,73), and for the Khakass sample - preventive and anticipatory coping (M=5,3, δ=1,95).

We understand the obtained data as follows: it is more common for Russian sales managers to build consistent plans and algorithms to get out of a stressful situation, based on analytical thinking and facts. While for the Khakass sample of sales managers in a stressful situation, it is more common to rely on premonitions, synthetic thinking, and a tendency to avoid frustrating situations for their possible prevention.

4. CONCLUSION

Summing up, it should be noted that male sales managers have significantly higher average values for five indicators of professional health than women. Men have higher level of general health on the SF-36 questionnaire scale (Mm=75.1, δ=1.72), higher level of vigor (Mm=6.7, δ=1.03) and activity (Mm=6.4, δ=1.07), significantly higher average values on the professional competence scale (Mm=6.5, δ=1.27) and on the professional authority scale (Mm=5.8, δ=1.23). Women have significantly higher indicators on the scale of control by competent others (Mw=5.9, δ=1.53) and social support (Mw=6.2, δ=1.07). The one-factor variance analysis also allowed us to establish significant differences in occupational health depending on the nationality. The Khakass sample of sales managers in general showed higher indicators for the physical component of professional health, such as: PF (physical functioning), characterizes physical activity, vitality (Mm=82.1, δ=2.12), cheerfulness (Mm=6.81, δ=2.14), performance (Mm=6.5, δ=1.2), but also higher indicators for the criterion – emotional burnout: reduction (Mm=11.46, δ=2.08) and emotional exhaustion (Mm=7.41, δ=1.37), as a coping strategy, the predominant use of preventive and anticipatory coping (m=5.3, δ=1.95). The Russian sample of sales managers showed significant differences in the psychological component of professional health, in particular, higher memory indicators (M=6.91, δ=3.76) and strategic planning (M=5.16, δ=1.73). Significant differences in the effect of seniority on professional health were not established.

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OPTIMIZATION OF THE MEDIA MESSAGES STRUCTURE FOR RECRUITING SUPPORTERS

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ABSTRACT

The article considers the possibility of formalizing influence through various media channels on the formation of the ideological supporters groups. Transmitted messages can help to increase sympathy or antipathy for politicians, or you can strive to increase the moral or patriotic level of information consumers. This requires the availability of data on the structure of consumers of media channels and the degree of confidence in these channels which are provided by special opinion surveys. The distribution of messages on various channels and for different social groups is possible in many ways. It is clear that it is advisable for the governing body to choose a method that ensures maximum audience reach and the greatest number of supporters. These methods require the use of various financial, temporal and other types of resources. The costs may vary depending on the information channel and the social group to which it is directed. In this article, the optimal message structure is determined by the costs of two limited resources. In the considered models, it is proposed two types of objective functionalities: logarithmic functional, which corresponds to wide coverage, and logistic function that sets the probability of the desired users behavior. The optimal message structure is determined by the cost of two limited resources. The results of computer calculations were obtained according to sociological surveys on the distribution of respondents through media channels and confidence in these channels for different age groups. The role of the Internet was clearly revealed especially for young people, the messages on which are the most significant.

Keywords: *groups, media channels, message structure, probability of behavior*

1. INTRODUCTION

Mass Media play an important role in the formation of public opinion, which in turn determines the implementation of a political, socio-economic scenario (for example, see [Stivers (2012)], [Yanich (2004)], [Limppann (1922)]). As shown in [Limppann (1922)], the media influence the formation of attitudes in society, and people are more likely to react not to actual events, but to the content created by the media. People learn about events or news through various media channels, which include the Internet, newspapers, magazines, television, etc. Moreover, depending on the socio-demographic characteristics of individuals, preferences are formed in the choice of media channels for obtaining information. For example, the elderly prefer television and newspapers as sources of the information, and younger ones prefer the Internet. The degree of influence of Mass Media on society can be assessed during periods of important economic events (pension reforms, increase in taxes, etc.), political events (elections of governors, mayors, etc.), social events (protests etc.). The Internet should also be especially noted as the media channel for spreading information, which very rapidly penetrates the life of

society and dramatically transforms the political and economic environment (see **(**Kreimer, 2001)). Such penetration is facilitated by the active use of modern mobile devices (smartphones, tablets, etc.). As a result, more and more people are able to monitor the current news background via the Internet, exchange information and express opinions. A wider audience reach can now be achieved at a faster pace. The virtual environment unites people and organizations, states and social movements. There are different approaches to assessing the impact of the media on society. Among them, we will highlight the mathematical models of social and economic processes that describe collective behaviour under the influence of the media and allow for an assessment of theoretical effects (see (Gonzalezz-Avella et al. , 2006)) and empirical models based on data from the Internet (see (Yasseri et al.,2016). Before presenting the obtained results of calculations on the basis of partially real data, supplemented with conditional parameters of the statistical model, the authors consider it necessary to indicate their principal position on the problem of information impact on people's social and psychological attitudes. Any information obtained by an individual can somehow change the general picture of the subject's ideas, the model of his world as such. At the same time, the changes themselves may not be as expected by the source. Taking the theoretical position of inviolability of consciousness (see (Zolo, 1992) and (Luhman, 2000)), it is natural to distinguish between the need for direction of education of young people and the doubtful value of most commercials on TV. The management of consciousness in society is a given, and there is no escape from it. The old dilemma of assessing the results of fire, atomic energy and science in general: what are the goals of controlling these forces and who controls them? It is clear that the influence of the media depends on the quality of messages. Thus, (Luhman, 2000) speaking about the ways of news presentation, singles out such aspects as novelty, conflict, quantitative indicators, moral orientation and many others.

2. PROBLEM STATEMENT

In the article (Gavriletz, Tarakanova, 2018) there were proposed models in which, the optimal proportions between the number of messages were chosen given a limited resource, and the goal was to maximize the coverage of the audience who confidentially familiarized themselves with messages of the desired ideological color. In that article it was noted that a logical improvement of the proposed approach would be a transition to a target function that reflects the various effects of the influence of different information channels on different groups and takes into account the possible limitations of not one resource, but several. This article discusses the same social groups as in the article (Gavriletz, Tarakanova, 2018) and the same three information channels (TV, Internet, Press). The main difference here is the assumption that the degree to which the individual supports the ideology contained in the messages depends on their number, and the type of this dependence is known to the Source. We will assume the presence of some socio-psychological orientation, a kind of “coloring” of the transmitted messages, which reflects the target settings of the Source. In particular, transmitted messages can help to increase sympathy or antipathy for politicians, or you can strive to increase the moral or patriotic level of information consumers. In this article, attention is drawn only to the methodology of possible management for some purpose.

3. RESEARCH QUESTIONS

To concretize the problem under study, we will use the results of the survey[1]on the distribution of respondents through media channels and trust in these channels for different age groups (see Table 1).

[1] FOMnibus weekly survey, **November 17–18, 2018 year**. 53 subjects of the Russian Federation, 104 settlements, 1,500 respondents. Stat error does not exceed 3.6%.

Table 1: Distribution of audience by age and media channels

	Age			
	18-30 years old	**31–45 years old**	**46–60 years old**	**over 60 years old**
group shares	*23*	*29*	*24*	*24*
TV	**48**	**64**	**80**	**92**
Internet	**57**	**55**	**43**	**18**
Press	**6**	**7**	**12**	**25**
		Confidence		
TV	**23**	**32**	**42**	**50**
Internet	**25**	**26**	**20**	**6**
Press	**6**	**5**	**9**	**13**

Source: FOMnibus weekly survey, November 17–18, 2018 year

Next, we directly consider the model for three information channels, through which a certain Source sends messages to four social groups, the numbers of which are known and which with definite level confidence receive relevant messages. We introduce the following notations:
$\boldsymbol{i}$ – channel number (1 – TV, 2 – Internet, 3 - Press);
$\boldsymbol{k}$ – social group number (1 – group aged 18-30 years old, 2 – group aged 31-45 years old, 3 – group aged 46-60 years old, 4 - group over 60 years old);
$\boldsymbol{z_{i,k}}$ – the number of members in *i*-th group trusting transfers (see Table 1) of the *k*-th channel;
$\boldsymbol{x_{i,k}}$ –the number of "standard" messages sent by the Source through the *i*-th channel for the *k*-th social group (for definiteness, it is assumed that the messages received by this group through other channels do not significantly affect this setting);
$\boldsymbol{S_1, S_2}$ – the amount of the limiting first and second resources spent by the Source on sending all messages;
$\boldsymbol{C_{i,k}, F_{i,k}}$ – the cost of the first and second resources for sending one message.

The constraints on the first and second resources for sending all messages are as follows:

$$\sum_{\mathbf{i}}\sum_{\mathbf{k}} \boldsymbol{C_{i,k}x_{i,k}} \leq \boldsymbol{S_1}, \qquad (\mathbf{1})$$

$$\sum_{\mathbf{i}}\sum_{\mathbf{k}} \boldsymbol{F_{i,k}x_{i,k}} \leq \boldsymbol{S_2}, \qquad (\mathbf{2})$$

where the first inequality is a budget constraint, and the second inequality is the time spent on preparing and sending a message. Under these conditions, it is necessary to find the "best" non-negative values of the variables $x_{i,k.}$

4. PURPOSE OF THE STUDY

We assume that we know the function $\boldsymbol{f(x)}$, which expresses the number of conditional scores of the ideological support level distributed by the "Source" and received by one member of the *i*-th group by the *k*-th social channel.

It is assumed that the number of points from $\boldsymbol{x_{i,k}}$ messages for $\boldsymbol{z_{i,k}}$ participants is equal to $\boldsymbol{z_{i,k}f(x_{i,k})}$. In this case, maximizing the total scores by sending all messages means:

$$\boldsymbol{W = \sum_i \sum_k z_{i,k}\, f(x_{i,k}) \rightarrow \max} \qquad (3)$$

where two options were considered for the function $\boldsymbol{f(.)}$:

- $\boldsymbol{f(x) = ln(x)}$, which corresponds to the logarithmic dependence of the ideological support level from the number of messages. Such choice for $\boldsymbol{f(x)}$ in the objective function $\boldsymbol{W}$ from (3) corresponds to the maximally wide coverage as a result of sending messages;
- As a function $\boldsymbol{f(x)}$ it was taken the probability, which depends on the number of messages *x*, received by a group, and the nature of this dependence is expressed by a logistic function of the following form:

$$\boldsymbol{f(x) = \frac{K * P_0 e^{rx}}{K + P_0(e^{rx} - 1)}}$$

Confidence in the received messages directly determines the probability of a certain action, which is facilitated by the imposed ideology of the Source. As a result, the objective function $\boldsymbol{W}$ expresses the expected number of supporters of the ideology of the Source.

5. RESEARCH METHODOLOGY

Let us consider how a solution to the problem of messages distribution for three information channels over four age social groups may look like (data from the FOM, see [FOM (2018)]). We take:

$$Z = \begin{pmatrix} 23 & 32 & 42 & 50 \\ 25 & 26 & 20 & 6 \\ 6 & 5 & 9 & 13 \end{pmatrix} \quad C = \begin{pmatrix} 5 & 5 & 5 & 5 \\ 2 & 2 & 2 & 2 \\ 1 & 1 & 1 & 1 \end{pmatrix} \quad F = \begin{pmatrix} 5 & 5 & 5 & 5 \\ 3 & 3 & 3 & 3 \\ 1 & 1 & 1 & 1 \end{pmatrix}$$

where Z - distribution matrix of the relative number of users on the channel in question ($i = 1,2,3$) and by age groups ($k = 1,2,3,4$), C, F – cost matrix of different resources (cost, time) per message through the corresponding channels and social groups. Take as an illustration: $S_1 = 3000, S_2 = 3340$.

For the optimal distribution problem formulated above (see Section 3), we have the following Lagrange function:

$$L(\lambda_1, \lambda_2, X) = \sum_i \sum_k z_{i,k} f(x_{i,k}) + \lambda_1 \left[S_1 - \sum_i \sum_k C_{i,k} x_{i,k} \right] + \lambda_2 \left[S_2 - \sum_i \sum_k F_{i,k} x_{i,k} \right],$$

where $X = \|x_{i,k}\|$ matrix of unknown values; λ_1 and λ_2 – unknown values of the Lagrange multipliers.

It should be noted separately that the optimal distribution problem under consideration for the case when $f(x) = ln(x)$**,** and the restriction is one (1), has an analytical solution of the form:

$x_{i,k} = \frac{S_1 z_{i,k}}{Z C_{i,k}}$, где $Z = \sum_i \sum_k z_{i,k}$

To find the saddle point in the case of two constraints (1) and (2) it is used the numerical optimization algorithm. More definitely, it is used sequential (least-squares) quadratic programming (SQP) algorithm for nonlinearly constrained, gradient-based optimization, supporting both equality and inequality constraints (see (Kraft,1988)).

6. RESEARCH RESULTS

As a result of solving the optimization problem with two resource constraints, we obtain a message distribution matrix for groups:

- For a logarithmic dependence (see Section 4), the optimal distribution of messages is given by the matrix:

$$\boldsymbol{X} = \begin{pmatrix} \mathbf{59} & \mathbf{82} & \mathbf{108} & \mathbf{129} \\ \mathbf{110} & \mathbf{115} & \mathbf{88} & \mathbf{26} \\ \mathbf{77} & \mathbf{64} & \mathbf{116} & \mathbf{168} \end{pmatrix}$$

  The Lagrange multipliers show the relative importance of the resources used and for constraints (1) and (2) are equal:

$$\boldsymbol{\lambda_1 = 0,0058}, \qquad \boldsymbol{\lambda_2 = 0,0716}$$

  This indicates that the second resource is locally more significant than the first.

- In the case of logistic dependence, the message matrix has the form:

$$\boldsymbol{X} = \begin{pmatrix} \mathbf{77} & \mathbf{94} & \mathbf{104} & \mathbf{110} \\ \mathbf{115} & \mathbf{116} & \mathbf{108} & \mathbf{0} \\ \mathbf{91} & \mathbf{82} & \mathbf{106} & \mathbf{118} \end{pmatrix}$$

  In addition, in the case of direct expression of the probability of behavior, the distribution matrix of the expected number of attracted supporters has the form:

$$\boldsymbol{Z^* = \left\| z_{i,k} f(x_{i,k}) \right\|} = \begin{pmatrix} \mathbf{16} & \mathbf{26} & \mathbf{36} & \mathbf{44} \\ \mathbf{23} & \mathbf{24} & \mathbf{18} & \mathbf{1} \\ \mathbf{5} & \mathbf{4} & \mathbf{8} & \mathbf{12} \end{pmatrix}$$

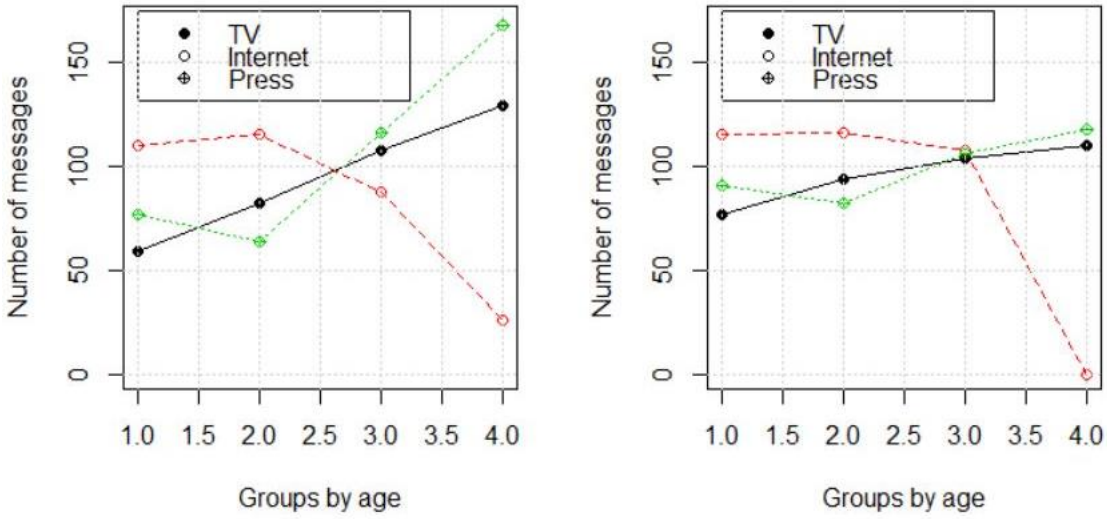
  The values of the Lagrange multipliers for constraints (1) and (2) are as follows:

$$\boldsymbol{\lambda_1 = 0,0361}, \qquad \boldsymbol{\lambda_2 = 0,0033}$$

  Under these conditions, it turned out that the first resource is locally more important compared to another in terms of increasing the number of supporters.

Figure following on the next page

Figure 1: The distribution of messages by channel depending on the age group. On the left is the logarithmic dependence; on the right is the logistic dependence



From Figure 1 it is shown that qualitatively the curves for the logarithmic and logistic dependences are of the same nature. The distribution of the number of messages depending on the age group on TV and the press is generally very similar. And the number of messages on the Internet decreases sharply with increasing age in the group.

Figure 2: The expected number of supporters attracted by channels depending on the age group for the case of logistic dependence

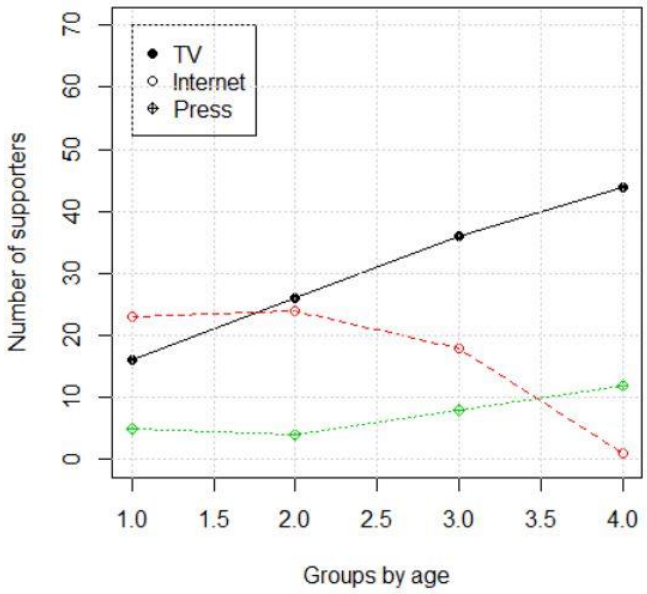


Fig. 2 shows the obtained numbers of messages on all channels when changing the age group number. As it can be seen from Fig. 2, for the last two age groups ("46-60 years old" and "over 60 years old"), the role of television is growing sharply, and for the Internet it is falling. Television corresponds to a conditionally linear increase in the number of supporters depending on the age of the group. From the point of view of the expected number of supporters attracted, the influence of the press is insignificant and only for older ages does it begin to manifest itself, which is characterized by relative growth. At the same time, the Internet means a clear influence on younger groups with a sharp decrease in influence with increasing age of the group.

7. CONCLUSION

Calculations show that the nature of the dependence of the number of messages sent on the index of a social group is quite closely related to the dependence on the number of group members trusting these channels, although it does not always coincide in detail, especially in the case of behavior probabilities. This fact underlines the importance of accurately assessing the level of trust in various media channels. The nature of the trajectories may be completely different under the assumption that the cost of one message and the parameters of the function ***f (.).*** Depend on the type of group. Since the proposed model actually deals with the influence of the media on attitudes, situations with influence on culture, morality, religion and the type of message transfer channels can be very different in specific areas of application, but the logic of the approach is preserved. The paper considers the results of calculations for groups by age, although the breakdown of the audience can be expressed arbitrarily (for example, by income level, place of residence, social status, etc.). Note that the obtained values of the elements of the matrix $\boldsymbol{Z}^*$ mean the share of attracted supporters in the corresponding age group and information channel (the total number of members in all age groups is 1,500 people)

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DIGITAL CITY: QUALITY INDICATORS OF «SMART EDUCATION» AND «SMART PEOPLE» SUBSYSTEMS

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ABSTRACT

With the development of information and communication technologies, the concept of urban development is changing. The authors highlight the features of the concept of a digital city and the place of "smart people" in it. In our opinion, the implementation of the concept of a digital city allows improving the quality of life by supplying the population with electronic services and providing network interaction through digital ecosystems. The analysis of scientific publications shows that there is no consensus on the category of "smart people". Scientists distinguish their diverse characteristics: adaptability, creativity and involvement; monitoring the health and controlling the nutrition; using the facilities and services of smart cities; high level of education; tolerance and open-mindedness. We believe that this category in the framework of the digital city we should consider through the consumption of "digital goods" participation in their development and promotion. The most striking example of such an approach is Open Education, which, combined with the dissemination and accumulation of information and knowledge on the Internet, allows you to form a subsystem of a digital city: "smart education". The authors propose to determine the level of development of the "smart people" and "smart education" subsystems in a digital city. For this purpose, they developed and proposed to use indicators of quality of life obtained from the state statistics and online data collection.

Keywords: *digital city, information portal, life quality indicators, smart education, smart people*

1. INTRODUCTION

Digital city development indicators are an essential component of governance in the digital economy era. The idea of a "digital city" is to create a human infrastructure of a settlement based on information and communication technologies (ICT) and the uniform development of all its subsystems. We subdivide these subsystems rather arbitrarily as follows: smart education, smart medicine, smart transport, smart people, smart security, smart environment, smart technology, etc. Obviously, all these subsystems are interconnected and interdependent. Not only digital technologies are present in them, their development requires a diffusion of knowledge and smart people. To improve the quality of life in a digital city, it is necessary to develop a monitoring system that tracks the level of its development.

The purpose of the study is to analyze the indicators of the quality of life of the population to establish the relationship of the "smart people" subsystem with relation to the development of the "smart education" subsystem.

2. LITERATURE REVIEW

To develop indicators of the quality of life of smart people and smart education in a digital city, it is necessary to determine the key notions and features of the digital city concept. Some scientists identify in their publications the term "smart city" with the "digital city", which is not entirely correct. According to R.P. Dameri, a "smart city" is a geographically well-defined area that uses modern technologies such as ICT, logistics, energy production, etc. creating benefits for citizens in terms of their well-being, integration and participation in management, maintaining the quality of the environment intellectual development. The leadership of such an area consists of a well-defined staff of persons that develop the rules and policies of the city government and the concept of development of the area [1]. Qi L. et Shaofu L. write that the "digital city" is an open, complex and adaptive system based on a computer network and urban information resources that form a virtual digital space for the city [2]. Another author suggests considering the "digital city" as a platform for integrating and using urban information and the virtual space of interaction between people living and visiting the city [3]. Thus, the different definitions of a digital city and a smart city lead to differences in the content of their concepts (Table 1).

Table 1: Comparative analysis of the concepts of a digital city and a smart city

Characteristics	Conception	
	"Digital city"	"Smart city"
Purpose	Improving the quality of life of the population through the provision of electronic services and ensuring network interaction of society between its members, with organizations and authorities through digital ecosystems	Improving the quality of life of the population through the introduction of modern breakthrough technologies
Technology groups	ICT	ICT Ecological and resource saving Robots of new generation Autonomous and semi-autonomous vehicles Energy accumulation, storage, and use Renewable wind, sun, and water energy New materials Vertical agriculture
Synonyms used in scientific literature	intelligent city, knowledge city, ubiquitous city, sustainable city	
Guidelines	Smart people; Smart economy; Smart transportation; Smart education; Smart management; Smart medicine; Smart technology; Smart environment	

One group of technologies, namely, information and communication technologies and the use of the Internet, serve as the basis for implementing the concept of a digital city. The purpose of such an implementation is to provide electronic services to the population and ensure network interaction among themselves, with organizations and authorities through digital ecosystems. The technological basis of this concept is more defined, as are the desired results.

Whereas the implementation of the smart city concept takes as a basis the introduction of modern breakthrough technologies: ICT, environmental and resource saving, robots of new generation, autonomous and semi-autonomous vehicles, accumulation, storage and use of renewable wind, solar and water energy, new materials, vertical agriculture. As vertical agriculture, the authors comprehend farming, which provides the population with food, and some industries with raw materials using new technological and architectural solutions by means of utilizing vertical surfaces of the city. As the analysis of scientific publications from 1993-2012 shows, some authors use the phrases intelligent city, knowledge city, ubiquitous city, sustainable city as synonyms for "smart city" and "digital city". This leads to some confusion in the definition of concepts [4]. With the same guidelines of development (Table 1), the difference lies in the content and technologies used. The Digital City project in the Russian Federation comes true as part of the national Housing and Urban Environment project and the national Digital Economy program. The Digital City has for an object increasing the competitiveness of Russian cities, creating a system of safe and comfortable living conditions and rests on the following principles:

- human orientation;
- technological effectiveness of urban infrastructure;
- improving the quality of urban resource management;
- comfortable and safe environment;
- emphasis on economic efficiency, including the service component of the urban environment [5, 6].

One of the key guidelines of the concepts of a digital city and a smart city are "smart people". If in the first case, it is necessary to consider a citizen's demand for new digital technologies to improve the quality of life, then in the second one the main issue is his/her relevance as a full-fledged participant-developer, realizing innovative and creative potential for improving the quality of the urban environment. Thus, a digital city is a component of a smart city and the concept of a digital city is narrower and more specific.

3. RESEARCH METHODOLOGY

The methodology of studying quality of life indicators characterizing the relationship of the "smart people" subsystem with relation to the development of the "smart education" subsystem includes the following steps:

- the concept of "smart people" in terms of a "digital city";
- analysis of quality of life indicators characterizing the "smart education" subsystem;
- assessment of the development opportunities of the «smart education» subsystem;
- "smart people" as participants in the development of the "digital city".

4. RESEARCH RESULTS

4.1. The concept of «smart people» in terms of a «digital city»

The concept of "smart people" is probably the most complex and has no precise definitions. Let us single out their characteristics occurring in scientific papers (Table 2).

Table following on the next page

Table 2: Characteristics of smart people

No.	Characteristic	Authors
1	Flexible, adapted to environmental changes	J.M. Spector [7]
2	Creative and involved	S.B. Letaifa [8]
3	Cultural elite	L.R. Diamond [9]
4	Have a longer education period	E. M. Costa, Á.D. Oliveira [10]
5	Consuming organic food, smart city services	D.C. Bogatinoska, R. Malekian, J. Trengoska, W.A. Nyako [11]
6	Health conscious	I.I. Wahyuni, D.S.F. Ali [12]
7	Social and ethnic pluralism and openness, participation in public life, creativity and a high level of education	V. Moustaka, Z.Theodosiou, A. Vakali, A.Kounoudes [13]

The above definitions are very diverse and related to the main directions of the development of a digital city, however, information and communication technologies are nowhere directly emphasized. As noted by F. Nempanu et al. [14], the emergence of “smart people” occurs through investment in their education and involvement in all aspects of urban life, i.e. this category of citizens is characterized not only by the level of qualification or education, but also by the quality of social interactions and integration into public life [15]. The authors believe that from the perspective of a “digital city”, we should consider “smart people” as persons cleverly or rationally consuming “digital” goods in a “digital city” and participating in their development and promotion. It is natural that the main determining factors in the development of the “smart people” subsystem are indicators of the development of the “smart education” subsystem.

4.2. Analysis of quality of life indicators characterizing the "smart education" subsystem

Let us consider the results of assessing the development opportunities of "smart education" as the basis of the "smart people" subsystem. For the choice and expert evaluation of the indicators of the “smart people” subsystem from the position of “smart education” we used a questionnaire survey. To select quality of life indicators characterizing the “smart education” subsystem, we interviewed 100 respondents — full-time and part-time students, teachers and business leaders of the Siberian Federal District (SFD). Of the proposed 120 possible indicators, respondents noted 28 indicators as the most important. In our opinion, these indicators reflect the state of “smart education” and we grouped them in Table 3, which shows the proportion of respondents who chose this indicator as important. Table 3 also indicates the sources of information for evaluating these indicators.

Table following on the next page

Table 3: Quality of life indicators in the field of "smart education"

No.	Quality of life indicator	The share of those who choose this indicator	Source of information
1	The general level of equipment of an educational institution with ICT facilities		
1.1	Share of classrooms and offices equipped with ICT facilities	0,30	Education in numbers https://www.hse.ru/primarydata/oc2019 (collection of information from sites)
1.2	The proportion of lessons using ICT tools	0,25	Expert assessment and collection of information from sites
1.3	Share of students and their parents using ICT tools to interact with school space	0,35	Russian education http://www.edu.ru/
1.4	The proportion of educational institutions in which the electronic access system is implemented in the institution territory	0,15	Expert assessment and collection of information from sites
1.5	The proportion of educational institutions that teach the basics of robotics, electronics and programming	0,37	Russian education http://www.edu.ru/
1.6	The share of institutions with a convenient modern electronic portal	0,12	Expert assessment and collection of information from sites
2	The use of electronic educational resources and ICT facilities in the teaching process of an educational institution		
2.1	Availability of an electronic portfolio of students' achievements	0,15	Information bulletin http://indicators.miccedu.ru/monitoring/2018/_spo/bulletin_RF_spo_motitoring.pdf
2.2	Share of teachers of an educational institution participating in competitions, conferences and seminars on ICT topics	0,09	Russian education http://www.edu.ru/
2.3	Share of teachers using electronic educational resources and ICT tools to demonstrate, individualize and differentiate teaching	0,25	Expert assessment and collection of information from sites
2.4	Share of teachers of an educational institution actively using Internet technologies to organize distance learning	0,12	Expert assessment and collection of information from sites
2.5	Proportion of teachers of an educational institution who completed courses (full-time or distance) in ICT-related topics	0,10	Education in numbers https://www.hse.ru/primarydata/oc2019 (collection of information from sites)
3	Monitoring systems for environment and security of educational institution		
3.1	The share of educational institutions in which there are automatic security and fire systems	0,30	Expert assessment of specialists
4	Research Activities in Universities		
4.1	The number of publications and scientific works of lecturers, professors, graduate students, undergraduates and students in journals indexed by the Scopus database and / or WebOfScience (WOS) search platform	0,15	Publication activity of Russia https://www.5top100.ru/news/100908/
4.2	The number of conferences of lecturers, professors, graduate students, undergraduates and students in journals indexed by the Scopus database and / or the WebOfScience (WOS) search platform	0,20	Publication activity of Russia https://www.5top100.ru/news/100908/
4.3	The number of publications and scientific works of lecturers, professors, graduate students, undergraduates and students in journals that are on the list of the Higher Attestation Commission	0,50	Science and Innovations https://www.gks.ru/folder/14477
4.4	The volume of scientific grants received by university lecturers, professors, graduate students, undergraduates and students	0,08	Expert assessment and collection of information from sites
4.5	The number of publications of lecturers, professors, graduate students, undergraduates and students together with foreign scientists	0,01	Publication activity of Russia https://www.5top100.ru/news/100908/
4.6	The scientific citation index of the works of university professors within the country	0,22	Russian Science Citation Index (RISC) https://elibrary.ru/project_risc.asp
4.7	Scientific citation index of the works of university professors abroad	0,00	RISC https://elibrary.ru/project_risc.asp
4.8	Percentage of international conferences at which university professors, graduate students, undergraduates and students spoke this year	0,09	Science and Innovations https://www.gks.ru/folder/14477
5	Other indicators related to universities		
5.1	The proportion of graduates working in the specialty in the first 3 years after graduation	0,21	Graduation Statistics https://vawilon.ru/statistika-vypusknikov/
5.2	The number of universities in the country in the list of the best universities in the world according to the WorldUniversityRankings	0,08	Russian universities in ratings https://4science.ru/articles/Rossiiskie-vuzi-v-razlichnih-reitingah-luchshih-universitetov-mira
5.3	The number of universities of the city included in the list of 30 leading universities of the country according to the RAEX rating	0,07	Russian universities in ratings https://4science.ru/articles/Rossiiskie-vuzi-v-razlichnih-reitingah-luchshih-universitetov-mira
5.4	The number of personal computers per 100 university students	0,87	Expert assessment of specialists
6	School education		
6.1	The share of schools in the region included in the list of the best schools in the country by competitiveness of graduates according to the RAEX rating	0,03	Expert assessment of specialists
6.2	The share of schools in the region included in the ranking of schools in the country by the number of graduates who entered the leading universities in Russia according to RAEX	0,04	Information bulletin http://indicators.miccedu.ru/monitoring/2018/_spo/bulletin_RF_spo_motitoring.pdf
7	Key indicators of additional education		
7.1	The share of online schools among institutions of additional education represented in the region in the field of foreign language	0,24	Information bulletin http://indicators.miccedu.ru/monitoring/2018/_spo/bulletin_RF_spo_motitoring.pdf
7.2	The share of online schools among institutions of additional education represented in the region in the field of web design and programming	0,18	Government services https://ulpressa.ru/2018/02/09/nol-sekund-nol-chinovnikov-ulyanovskih-chinovnikov-zamenit-iskusstvennyiy-intellekt/

Source: developed by the authors

Each indicator evaluates a certain aspect of the quality of life from the perspective of the introduction of digital technologies, since the main role in the formation of the "smart education" subsystem play new digital technologies, especially those in the improvement of which the population and each person could take part.

4.3. Assessment of the development opportunities of the "smart education" subsystem

One can define a comprehensive assessment of the smart city potential as an integral evaluation of its subsystems. Measurement and monitoring of subsystem quality indicators makes it possible to determine the contribution of such a subsystem to the development of the entire system. Thus, it is possible to identify key areas for improving policies and opportunities in the field of "smart education". An algorithm of problem structuring algorithm for structuring the problem consists of the following steps: [16]:

Let x_{jk}^0 be the actual value of the j-th indicator of the k-th block, and let $\widetilde{x_{jk}}$ be the target (reference) value of the j-th indicator of the k-th block.

At the first step, we determine the relative measure of achieving the j-th indicator of the target value in the k-th block:

$$\beta_{jk} = \frac{x_{jk}^0}{\widetilde{x_{jk}}} \quad (1)$$

At the second step, we calculate the weight (significance) of the j-th indicator in the quantitative assessment of the k-th block

$$\alpha_{jk} = \frac{\beta_{jk}}{\sum_{j=1}^{n} \beta_{jk}} \quad (2)$$

In the third step, we establish a comprehensive assessment of the k-th block:

$$C_k^0 = \frac{1}{n} \sum_{j=1}^{n} \frac{x_{jk}^0}{\widetilde{x_{jk}}} \quad (3)$$

In the fourth step, we determine the relative measure by which the kth block reaches the target state:

$$\beta_k = \frac{C_k^0}{\widetilde{C_k}} \quad (4)$$

At the fifth step, we calculate the weight (significance) of the k-th block in the integral assessment of the system state:

$$\alpha_k = \frac{\beta_k}{\sum_{j=1}^{m} \beta_k} \quad (5)$$

At the final step, we determine the integral assessment of the system over the entire complex of blocks:

$$C^0 = \frac{1}{m} \sum_{k=1}^{m} C_k^0 \quad (6)$$

Experts evaluated the final list of indicators obtained earlier (Table 3). Based on the results of the assessment, they determined the actual and reference values of the indicators. On the grounds of these data, we carried out calculations in accordance with the proposed methodology. Table 4 presents the results of the first two steps.

Table 4: The results of stages 1 and 2 of assessing the development opportunities of the "smart education" subsystem

No.	Quality of life indicator	x_{jk}^0	$\widetilde{x_{jk}}$	β_{jk}	α_{jk}
1	The general level of equipment of an educational institution with ICT facilities				
1.1	Share of classrooms and offices equipped with ICT facilities	0,30	1	0,3000	0,1704
1.2	The proportion of lessons using ICT tools	0,25	0,8	0,3125	0,1774
1.3	Share of students and their parents using ICT tools to interact with school space	0,35	1	0,3500	0,1987
1.4	The proportion of educational institutions in which the electronic access system is implemented in the institution territory	0,15	1	0,1500	0,0852
1.5	The proportion of educational institutions that teach the basics of robotics, electronics and programming	0,37	0,7	0,5286	0,3001
1.6	The share of institutions with a convenient modern electronic portal	0,12	1	0,1200	0,0681
2	The use of electronic educational resources and ICT facilities in the teaching process of an educational institution				
2.1	Availability of an electronic portfolio of students' achievements	0,15	1	0,1500	0,1980
2.2	Share of teachers of an educational institution participating in competitions, conferences and seminars on ICT topics	0,09	0,8	0,1125	0,1485
2.3	Share of teachers using electronic educational resources and ICT tools to demonstrate, individualize and differentiate teaching	0,25	1	0,2500	0,3300
2.4	Share of teachers of an educational institution actively using Internet technologies to organize distance learning	0,12	1	0,1200	0,1584
2.5	Proportion of teachers of an educational institution who completed courses (full-time or distance) in ICT-related topics	0,10	0,8	0,1250	0,1650
3	Monitoring systems for environment and security of educational institution				
3.1	The share of educational institutions in which there are automatic security and fire systems	0,30	1	0,3000	1,0000
4	Research Activities in Universities				
4.1	The number of publications and scientific works of lecturers, professors, graduate students, undergraduates and students in journals indexed by the Scopus database and / or WebOfScience (WOS) search platform	0,15	0,4	0,3833	0,1600
4.2	The number of conferences of lecturers, professors, graduate students, undergraduates and students in journals indexed by the Scopus database and / or the WebOfScience (WOS) search platform	0,20	0,4	0,5083	0,2121
4.3	The number of publications and scientific works of lecturers, professors, graduate students, undergraduates and students in journals that are on the list of the Higher Attestation Commission	0,50	0,8	0,6208	0,2591
4.4	The volume of scientific grants received by university lecturers, professors, graduate students, undergraduates and students	0,08	0,3	0,2556	0,1066
4.5	The number of publications of lecturers, professors, graduate students, undergraduates and students together with foreign scientists	0,01	0,4	0,0250	0,0104
4.6	The scientific citation index of the works of university professors within the country	0,22	0,7	0,3143	0,1312
4.7	Scientific citation index of the works of university professors abroad	0,00	0,2	0,0000	0,0000
4.8	Percentage of international conferences at which university professors, graduate students, undergraduates and students spoke this year	0,09	0,3	0,2889	0,1206
5	Other indicators related to universities				
5.1	The proportion of graduates working in the specialty in the first 3 years after graduation	0,21	0,7	0,3000	0,1410
5.2	The number of universities in the country in the list of the best universities in the world according to the WorldUniversityRankings	0,08	0,2	0,4167	0,1958
5.3	The number of universities of the city included in the list of 30 leading universities of the country according to the RAEX rating	0,07	0,15	0,4444	0,2089
5.4	The number of personal computers per 100 university students	0,87	0,9	0,9667	0,4543
6	School education				
6.1	The share of schools in the region included in the list of the best schools in the country by competitiveness of graduates according to the RAEX rating	0,03	0,2	0,1500	0,4500
6.2	The share of schools in the region included in the ranking of schools in the country by the number of graduates who entered the leading universities in Russia according to RAEX	0,04	0,2	0,1833	0,5500
7	Key indicators of additional education				
7.1	The share of online schools among institutions of additional education represented in the region in the field of foreign language	0,24	0,35	0,6857	0,5333
7.2	The share of online schools among institutions of additional education represented in the region in the field of web design and programming	0,18	0,3	0,6000	0,4667

In each of the blocks, we select the indicator with the highest weight, and they form table 5, which calculates a comprehensive assessment of each block (step 3) and determines the relative measure by which the block reaches the target state (step 4).

Table 5: The results of steps 3 and 4 of assessing the development opportunities of the "smart education" subsystem

No.	Block name	C_k^0	$\widetilde{C_k}$	β_k
1	The general level of equipment of an educational institution with ICT facilities	0,2935	1	0,2935
2	The use of electronic educational resources and ICT facilities in the teaching process of an educational institution	0,1515	1	0,1515
3	Monitoring systems for environment and security of educational institution	0,3000	1	0,3000
4	Research Activities in Universities	0,2995	1	0,2995
5	Other indicators related to universities	0,4256	1	0,4256
6	School education	0,1667	1	0,1667
7	Key indicators of additional education	0,6429	1	0,6429

Thus, the blocks No. 7, 5 and 3 received the most comprehensive assessment. These blocks had a narrow list of indicators, the values of which in some cases are close to the target, reference values. This situation is associated with the characteristics of the choice of indicators for the block. For example, the "Key Indicators of Additional Education" block is highly appreciated in connection with the introduction of digital technologies and the wide distribution of institutions of additional education in the region due to the choice of various types of training on the Internet. Blocks with key indicators in the field of education (blocks No. 1, 4, 5, 7) received relatively higher grades, since the target indicators in these blocks have high values close to unity. At the final stage of the calculation, the integral assessment of the system over the entire complex of blocks is determined:

$$C^0 = \frac{1}{7}\sum_{k=1}^{7} C_k^0 = 0{,}32 \qquad (7)$$

Therefore, the integral estimate of the system is 0.32.

4.4. "Smart people" as participants in the development of the "digital city"

From the data in Table 5, we can conclude that the number of "smart people" depends on the capabilities of "smart education" and the number of tools that "smart people" operate. The more opportunities for creativity, the more productive the development and implementation of innovations will be, and the innovations themselves will be more effective. Modern capabilities allow users to build their "digital" city independently in almost any locality - through mobile applications in smartphones, launching their own startups aimed at improving the quality of life and introducing digital services within their community [17]. Thus, the transformation of cities and settlements into "digital" ones is a global trend. The main driving force of development is the active participation of citizens in the life of the city and its management using intelligent and information systems based on ICT. The result of these serious, objectively necessary transformations will be a "digital city", attractive for life and integrated into an inter-regional and international intellectual network, able to use its territorial and resource potential as efficiently as possible.

5. CONCLUSION

Above all, the formation of a smart or digital city depends on its constituent “smart people”. It includes the share of the population that is capable of both participating in the development of digital technologies and maximizing the effect of using these technologies, increasing the quality of life. The use of new technologies should bring to a new level everyday life of people, and change in a qualitative sense production relations arising in organizations. In addition, the introduction of new technologies should ensure accelerated growth in all areas of the “digital city”. Thus, the authors propose new indicators that evaluate the "smart education" subsystem and the “smart people” subsystem.

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THE INDIAN TAX SYSTEM AS A FACTOR OF BUSINESS COMPETITIVENESS

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ABSTRACT

This paper seeks to study the corporate income tax law's specifics of Indian companies and understand if it can to constitute a competitiveness factor for these businesses. The research makes a legal structure analysis of India Jurisdiction, it incorporates several Indian data sources: the Constitution of India and the Income-Tax Act of 1961. The results show that the Indian lawmaker is conservative on legislative changes. The law regulating the taxation of corporate profits dates back to 1961, and despite some amendments, it maintains over time. The fact that corporate tax rules remain stable over time represents predictability for investors, which is a very compelling competitiveness factor for business. However, this law presents some less positive features in some situations. The wording's law is old, so sometimes it is challenging to interpret the legislator intention; it can means difficulties in compliance's law. Also, the law establishes particular rules for taxable bases' determination on income tax corporate. It represents a duplication of accounting and tax rules, so, each entity has to prepare accounting and a tax statement.

Keywords: *India, Tax System, Corporate Income Tax Law, Income-Tax Act*

1. INTRODUCTION

According to the last estimates of the United Nations, currently, India is the second-most populous country in the world, representing 17,71% of the entire worldwide. Only China surpasses India, representing 18.59% of the world's population[1]. Beyond the population dimension, it has gone noticed in the economic dimension. Recently, it passed assume to take a privileged economic position, managing to transcend significant economies with a stable economic position. According to the International Monetary Fund, in 2018, this country presents a Gross Domestic Product (GPD) growth rate of 7,3%[2]. In the opinion of Barro (1997), the growth rate is increasing by "enhanced by higher initial schooling and life expectancy, lower fertility, lower government consumption, better maintenance of the rule of law, lower inflation, and improvements in terms of trade". Relating to the maintenance of the rule of law, Knack and Keefer (1997) studies the countries' subjective indices. It includes the "quality of the bureaucracy, political corruption, likelihood of government repudiation of contracts, risk of government expropriation, and overall maintenance of the rule of law". The preservation of the rule of law does not ignore tax domain because jurisdiction needs revenues collection to finance public expenditure. Thus, scholars keep interested in to research the relationship between tax systems and economic growth (Reis and Ramos, 2014). Nabais (1998) defends persons, individual or legal ones, have a fundamental duty to pay taxes, it justifies the taxation of corporate income. Income-tax Act (ITA) regulates the taxation of Indian companies' incomes. In this context, business entities are taxpayers in this tax jurisdiction alongside individual people.

Table following on the next page

[1] https://www.worldometers.info/world-population/population-by-country/, consulted September 12, 2019.
[2] https://www.imf.org/en/Countries/IND#whatsnew

Table 1: Direct Tax Collection of India

(Rs. in crore)

Financial Year	Corporate Tax	Personal Income Tax@	Other Direct Tax	Total
2000-01	35696	31764	845	68305
2001-02	36609	32004	585	69198
2002-03	46172	36866	50	83088
2003-04	63562	41386	140	105088
2004-05	82680	49268	823	132771
2005-06	101277	63689	250	165216
2006-07	144318	85623	240	230181
2007-08	193561	120429	340	314330
2008-09	213395	120034	389	333818
2009-10	244725	132833	505	378063
2010-11	298688	146258	1049	445995
2011-12	322816	170181	990	493987
2012-13	356326	201840	823	558989
2013-14	394678	242888	1030	638596
2014-15	428925	265772	1095	695792
2015-16	453228	287637	1079	741945
2016-17	484924	349503	15286	849713
2017-18*	571202	419998	11541	1002741

Source: Union Finance Accounts of respective years and reports of C&AG/Receipt Budget. Cited in: INCOME TAX DEPARTMENT OF INDIA Time Series Data, Financial Year 2000-01 to 2017-18.

Table 2 presents the evolution of taxpayers' numbers in India in the last five assessment years. It shows all the taxpayers' categories (Aldeia). During the period analysed, "individual" taxpayers represented approximately 94% each of the five-assessment years. In the same time, "company" and "firm" taxpayers represent nearly 3% of the total taxpayers' number. In AY 2017-18, the total of taxable entities amounted to 74,127,250. The direct tax collection of India, between YA 2000-01 and YA 2017-18 (table 1), consistently shows that corporate tax supports the major part of direct tax revenues, reaching 67% of total revenues in YA 2010-11. This result has been declining in recent years, achieving the value of the 571 202 Rs in YA 2017-18, which still means 57%. Those data allow an understanding that corporate income is the biggest responsible for the Indian direct tax revenues, even though, corporate taxpayers are much smaller than individuals' ones.

Table 2: Number of taxpayers

Category	AY 2013-14	AY 2014-15	AY 2015-16	AY 2016-17	AY 2017-18
AOP	141,533	160,116	180,715	205,598	224,399
BOI	6,304	7,077	7,518	8,687	9,290
COMPANY	704,473	748,173	769,425	811,309	838,174
FIRM	1,042,649	1,092,692	1,161,163	1,254,193	1,316,305
GOVERNMENT	240	357	510	763	1,313
HUF	964,277	1,003,089	1,058,504	1,121,578	1,136,853
AJP	10,273	10,629	11,146	11,720	11,501
LOCAL AUTHORITY	6,027	7,188	7,591	8,356	9,093
INDIVIDUAL	49,711,477	53,911,494	58,094,614	65,598,364	70,319,448
AOP(TRUST)	206,289	217,996	232,513	253,266	260,874
TOTAL	**52,793,542**	**57,158,811**	**61,523,699**	**69,273,834**	**74,127,250**

Source: INCOME TAX DEPARTMENT OF INDIA Time Series Data, Financial Year 2000-01 to 2017-18

The Indian economy's particularities and the fact journals not deal it sufficiently, have been arousing the interest of scholars. Almost all the research about Indian' economy appears in the last decade (Chaudhuri et al., 2006, Nayar, 2011, D. V and Rathod, 2015, Nithin and Roy, 2016, Handy and Kirkpatrick, 2016, Chugh and Cropper, 2017, Ahmed, 2018, Sohrabji, 2019). In particular, Green and Murinde (2008) research the impact of tax policy on corporate debt of India; Deven et al. (2017) related income inequality to fiscal policy and economic growth; and, more recently Neog (2019) understood if tax spending helps to promote India's growth. Even though some recent studies to relate tax policy with Indian economic growth, it is possible to conclude the theme is still unexplored and to the best of our knowledge, there are no studies with the investigation about corporate income tax in India as a competitiveness factor. In particular, there is needed to understand better how India taxes corporate income, and if this legal rule constitutes a competitive factor for Indian companies. This research addresses this gap by analysing the legal dispositions that approach the direct tax of India. The research questions by the paper are i) How are corporate income tax characteristics in India? Also, ii) Constitutes those characteristics a competitive factor for Indian companies? For this purpose, this paper examined the legal norms of India. Four sections compose this paper. The introduction, in the first, it makes theme framework, it presents the justification, issue, methodology and goals of the research. In the second section, it analyses the researches theoretical background. After, in the third section, studies the corporate income taxation in Indian tax jurisdiction. Moreover, finally, the conclusions.

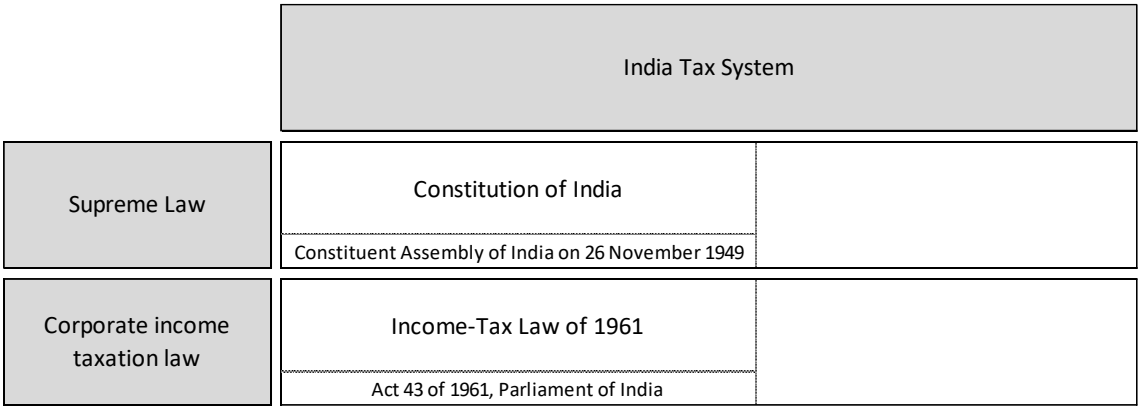
2. TAX SYSTEMS AND ECONOMIC GROWTH

Endogenous growth theory stands economic growth is principally the effect of endogenous and non-endogenous influences, and it means external ones. It holds that the investment (human capital, knowledge and innovation) support the economic growth substantially. It also argues that the long-term growth rate of an economy is dependent on economic policies (Barro, 1990).

Hindriks and Myles (2013) consider that a tax policy that promotes savings affects long-term equilibrium, it improves the capital/labour ratio, that maximises per capita consumption. Reis and Ramos (2014) note that in the context of economic growth models, conclusions are consistent that the possibility of saving-oriented fiscal measures could contribute to sustained economic growth as they allow capital accumulation. The author also points out the effects of taxation on economic growth, which can be negative or positive. Negative, because given that taxation influences the choices of economic agents, which impairs the growth of an economy. Positive, as the realisation of certain public expenditures and the provision of some public goods, can positively affect economic growth, given the qualitative improvement of existing factors of production or the introduction of new factors. This opposition to the effects implies the existence of an optimum dimension of taxation, Hindriks and Myles (2013) demonstrate this relationship. It means that the increase in the level of taxation must imply an increase in the quality of spending; this idea is underlying the economic legitimacy for tax collection (Reis and Ramos, 2014). Studies investigate the relationship between taxation and economic growth (Barro, 1991, Plosser, 1992, King and Rebelo, 1990, Bergh and Henrekson, 2011, Colombier, 2015), in general, they consider that there is a negative relationship between the level of taxation and economic growth, although this understanding is not consensual among economists. Thus, the characteristics of tax systems and the way they are structured are particularly relevant in the economic field. Fairness, efficiency and simplicity are the desirable tax systems' characteristics. A simple tax system is attractive to taxpayers and tax authorities. Simplicity allows less doubt about the correct application of tax law, implies individuals and companies to spend less time in fulfilling tax duties, and makes the system less contentious due to the less complicated regulatory provisions that constitute it (Martins, 2005). At the level of tax competition, the need for simplification of tax systems is mainly claimed to simplify business taxation so that they pay less and more efficiently, as global economic competition is not sympathetic. With ultra-complex tax systems as they tend to be today (Nabais, 2008). Therefore, simplicity is an essential condition for the proper tax system's functioning. Usually, it implies i) greater security and certainty for taxpayers; ii) to tax authority, it represents lower administrative costs for the implementation and monitoring of developed tax policies as well as lower system management costs; and iii) to the taxpayer, it means lower compliance costs (d'Oliveira Martins, 2015). In this conceptual background, this research aims to address two questions:

1) How are corporate income tax characteristics in India?
2) Constitutes those attributes a competitive factor for Indian companies?

Figure 1: Legal structure analysis of India Jurisdiction



In order to answer them, it makes a legal structure analysis of India Jurisdiction. It includes some Indian data sources: The Constitution of India and The Income-Tax Act of 1961.

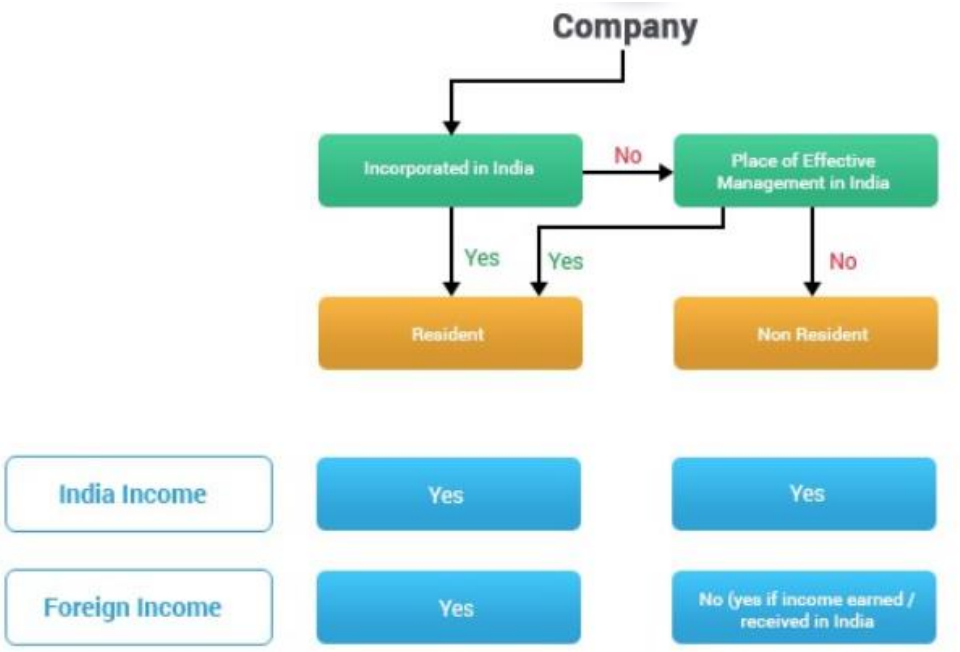
3. THE INDIA TAX SYSTEM

India's Supreme Law is the Constitution of India[3] (CI), the Constituent Assembly of India introduces it on 26 November 1949. Until this moment, it continues to be an amendment, already occurred 103 alterations, and the last one was in January 2019, known as the Constitution Act, 2019. The constitutional framework of India tax system is brief. In Chapter I, Finance, of Part XII - Finance, property, contracts and suits, of the CI treats tax questions. Article 265 introduces the theme of " Taxes not to be imposed save by authority of law". It determines "no tax shall be levied or collected except by authority of law". Although several amendments to the Supreme Law, article 265 never suffered a change. This legal disposition imposes to the taxes' collection to the legal forecast, it means, it is underlying the principle of legality, the fundamental principle of constitutional tax law. According to Jarach (1957), this is because the tributes represent invasions of the public power in the private riches and a Rule of Law, these invasions must be made only by legal instrument. This rule set the legality's principle as the base of Indian Tax System similar to other European tax jurisdictions such as Spain (Lapatza, 1992, Aldeia, 2017) in article 31 of the Spanish Constitution [4]; or Portugal (Dourado, 2007, Nabais, 2002, Xavier, 1978), in the article 103 of the Portuguese Supreme Law[5]. The Income Tax Act (ITA) of 1961 regulates the Indian income taxation of individuals and companies. In section 4, paragraphs 1 establishes this rule burden the total income of every person. Section 2(31) explains whom they are the taxpayers: “an individual, an undivided Hindu family, a company, a firm, an association of persons or a body of individuals, whether incorporated or not, local authority and every artificial juridical person, not falling within any of the preceding sub-clauses”. So, this legislation predicts also the taxation of companies' incomes. Section 5 of the same law determines the Act's ambit. To the resident business, are taxes all the income, regardless of the source. To foreign entities, the taxation occurs over indiscriminate source income received or deemed from India (Figure 2), taking into consideration the territory principle (Xavier, 2011). Disposition of section 6(3) clarifies the determination of Companies residence, it means, a company is resident in India if it is an Indian company; or its place of effective management, in that year, is in India, it means the place where happen the crucial necessary management and commercial decisions for the business' conduction as a whole. In addition, and relating to incomes taxed under this legal disposition, the section 2(22A) clarifies the concept of "domestic company", it represents the Indian company or other that has met the requirements of this law for the declaration and payment, in India, of the dividends payable out of such income. In opposition to the domestic company, the income law also predicts, in section 2(23A), the concept of "foreign company", it means a company which is not a domestic company.

Figure following on the next page

[3] https://www.india.gov.in/sites/upload_files/npi/files/coi_part_full.pdf
[4] *Constitución Española.*
[5] *Constituição da República Portuguesa*

Figure 2: Companies taxation



Source: https://www.investindia.gov.in/taxation, consulted on September 7, 2019.

Furthermore, the Act explains the meaning of income. First, in section 2(24) says the income includes, between other, profits and gains, dividend, voluntary contributions received, the legal disposition still remits to incomes addressed in other sections, such as 28th. Section 2(45) establishes the concept of "total income", considering it as " the total amount of income referred to in section 5". In section 5, determines it includes all the income, regardless the source, it means the inclusion of: "(a) is received or is deemed to be received in India in such year by or on behalf of such person ; or (b) accrues or arises or is deemed to accrue or arise to him in India during such year ; or (c) accrues or arises to him outside India during such year". All Chapter III of ITA exposes to the incomes which do not form part of the total income. Chapter IV clarifies the determination of business' income, and the 28th section exposes the income taxation of the profits and gains of business or profession. The following section clarifies the rule to compute the income referred in the previous section is in sections 30 to 43D. The segments 30 until 43D determine guidelines for expenses deduction in the profit's estimation. The income rule allows the deduction of, for example, the amount paid the current repairs of machinery, plant and furniture[6]; the tangible assets depreciation[7]; expenditure on scientific research[8]; or other deductions[9], as well as the amounts not deductible[10]. It means Indian legislator uses the analytical method in taxable base's determination of corporate income taxation (Pascual and Zamora, 1998). It establishes tax regulation that normalises all the positive and negative components of the tax base (Martín Queralt and Moreno, 1998). It is a complete and exhaustive regulation of all elements and circumstances that determine income (income, expenses, the temporal imputation, valuation of the elements, extraordinary operation) through rules recognised by the Tax Law (Taboada, 1982). This method was used in countries such as Spain until 1995 when the current corporate income tax law came into force.

[6] Section 31.
[7] Section 32.
[8] Section 35.
[9] Section 36.
[10] Section 40.

Until that date, the law provided for complete independence between the accounting rules and corporate income taxation ones (Aldeia, 2017). Therefore, it promoted a doubling of accounting and tax rules (Moreno, 1997), that is what happens at this moment in Indian Tax Jurisdiction. Also, the law settles[11] The assessment year represents twelve months; it starts on the 1st day of April every year and finishes at the 31st of March next year. According to section 4 - Charge of income-tax is due to tax over the chargeable event occurred during the assessment year since predicted in ITA law disposition. Indian legislation assumes a proportional rate and being in a corporate tax dimension. There are no personalisation elements, that is, elements that allow adjustment to the personal conditions that occur in the taxpayer (Martínez, 2003). The corporate income rate in India differentiate the company's dimensions, taking into consideration if whether it is a small, medium or large business[12]. The large entities are subject to higher taxation, opposing the smaller ones. The first ones assume an ITA tax rate of 30%.

4. CONCLUSION

This article seeks to understand how corporate income taxation in India occurs and if corporate tax constitutes a competitive factor for Indian companies. The results show an inverse relationship between the number of Indian corporate taxpayer and the total contribution's amount to income tax revenue. Corporations represent 3% of the total taxpayers' number and contribute 57% of income tax revenues in the assessment year of 201-18. The fact that the income of individuals is low may justify this situation. However, it is undeniable the companies' duty to sustaining public burdens contribution. Moreover, there is a negative relationship between the taxation level and economic growth; it assumes that jurisdictions that show higher economic growth presents a minor proportion of taxes on corporate income and profit. Looking to YA 2017-18 data (table 1 and 2), it is possible to conclude that each corporate taxpayer (companies and firm) supports, on average, an annual tax burden of 0,26512 crores. The individual taxpayer pays 0,00597 crores by assessment year of income tax, on average as well. It means that who, effectively, supports Indian income tax is the corporations in opposition to individuals, even though, in general, the total income tax burden is lower, to companies and individuals, compared to other countries. The tax system simplicity constitutes a relevant characteristic to countries economic development because it is attractive to taxpayers, they feel more self-assurance on correct law's application, and it represents evident benefits to both sides, taxpayers and tax authority. Indian ITA is an old law, it is close to 60 years old, and although over the time it had amendments, it is a law that has endured in the time. It means predictability in business' operations. Investors feel the security to take economic decisions. The Constitution of India also has ancient writing. It maintains the original predictions about the regulation of the tax system. This predictability characteristic in both laws, both the ITA and the Constitution, give international investors favourable legal certainty for conducting business and raising foreign capital. It is not always the case in European countries, which, despite low CIT rates, are not competitive due to the complexity of the tax system. The Indian legislator, a long time ago, was able to enact and maintain a lasting law that taxes income earned in India, it constitutes a very favourable point for India's business development. However, it presents some differences in legal dispositions. This law regulates the taxation of singular and legal persons' income it makes a long norm; also, the assessment year is not the civil one, but it starts and finish in different years; furthermore, it predicts tax guideline that regulates the tax bases' incomes and expenses, it means that there a duplication of rules in accounting and tax dimensions. It can be to point some similarities to the current corporate law of Europeans countries, such as Portugal

[11] Section 2(9) of Indian ITA.

[12] http://taxsummaries.pwc.com/ID/India-Corporate-Taxes-on-corporate-income and https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-corporate-tax-rates.pdf Consulted on September 12, 2019

and Spain, is the case of the income taxation of resident and non-resident entities and the implicitly of the territory tax principle, and the use of a proportional tax rate over the companies' profits. In Supreme law ambit, it determines, explicitly, the principle of legality as the base of the tax system, due to the requirement of tax imposition to the authority of law. This research allows to better understand the Indian tax system's role in the country's economic growth, mainly in corporate domains. It permits to identifies positive and negative corporate income tax law's characteristics that can promote the economic prosperity of companies in that geographic area. It could be relevant to replicate this study to other countries with similar economic growth behaviour, such as China, India's neighbour. As study's limitation, it is relevant to mention the difficult to interpret the ITA, taking into consideration its writing age, and the fact that that research only analyses the Income-Tax Act of 1961 and the Constitution of India, but it could be interesting to look other legal rules of the Indian Tax System.

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THE APPLICATION OF STATISTICAL RESEARCH METHODS IN ORDER TO PREDICT THE DEVELOPMENT OF THE AGRICULTURE IN THE REGION

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ABSTRACT

In this article, we discuss the issues of effective decision-making in the agricultural industry of the region on the basis of the information analysis with the help of some statistical methods and the correlation and regression analysis in particular. As in other areas of agriculture, in grain growing there are many factors that play an important role in ensuring the outcome of the production, first of all, they are weather conditions, soil quality, technologies of grain crops cultivation, efficient use of fertilizers, etc. The purpose of the study is to establish the dependence of grain yields (q/ha) on factors of the agricultural industry and to identify factors that affect the level of grain crops yield. The results of the research and prediction based on the multiple regression model are presented, they allow us to make the most effective management decisions on the development of measures to increase the grain crop yield in districts of the Chelyabinsk region. The computer program is developed based on the tools of 1C software to implement these methods. The database and the program that were developed in this research allow on the basis of a selective regression equation to make a prediction about the future and to define values of factors that can be changed by simulating various scenarios of the economic development of the analyzed indicator.

Keywords: *Agricultural industry in the region, Correlation and regression analysis, Effectiveness of management decisions, Multiple regression*

1. INTRODUCTION

1.1. Problem setting

The agricultural sector plays an essential role in how well people of the region are provided with food products, it also ensures the effective work of light and food industry and other industries. The agricultural sector also ensures strengthening of the economy of the region. At least two-thirds of the consumer funds of the population of the Chelyabinsk oblast are ensured by its agricultural sector because the economic security of any region depends directly on the sustainable development of agriculture. Over the past 5 years, the overall agricultural production in the region shows a positive trend. As in other areas of agriculture, in grain growing there are many factors that play an important role in ensuring the outcome of the production, first of all, they are weather conditions, soil quality, technologies of grain crops

cultivation, efficient use of fertilizers, etc. The productive work of entrepreneurs in grain growing should take these factors into consideration.

1.2. The research objective

The worldwide increase of grain production is the main task for agriculture sectors, grain industry, and, therefore, socio-economic and food stability in the region. This requires the introduction of the most productive grain kinds, the efficient use of fertilizers, improvement of the grain crops cultivation technology and a soil quality, and an accurate meteorological prediction, etc. Thus, the problem of determining the factors affecting the grain crop yield and yield prediction is crucial nowadays (Eliseeva et al., 2007; Eliseeva, 2011; Dubina, 2010). Today, in any field of economics (management, financial-credit sector, marketing, accounting, and audits) one has to deal with multidimensional aggregates when for each object there is a set of characteristics. The rational decision-making, in this case, should be based on a thorough analysis of information that allows understanding patterns, interconnections, dependencies between different indicators. In this regard, the practice shows a growing interest in statistical methods, in particular, the correlation and regression analysis, computer econometric tools for their implementation (Econometric Views, STATISTICA, Matrixer, Grin, Evrista, EXPO, Stata and so on.) (Ayvazyan, 2005; Vukolov, 2004; Nasledov, 2018). The area of econometric studies has currently expanded significantly because a priori assumptions in different areas of reasoning require empirical nature (Kolmakova et al., 2016; Kolmakova et al.,2017). Such areas include a research in the field of agriculture as well. The purpose of the study is to establish the dependence of grain yields (q/ha) on factors of the agricultural industry and to identify factors that affect the level of grain crops yield.

1.3. Latest research and publications

In studies of such scientists as Abalkin L.I. 1997, Tatarkin A.I., Polbitsyn S.N. 2015 and others there were developed some basic theoretical, analytical and methodological ideas of formation and development of competitive advantages in the areas of agriculture that allow to identify the essence and nature of agricultural production and its role in the formation and solving socio-economic problems in the regions. These Russian economists and mathematicians have made a significant contribution to the development of econometric research methods in different areas: Vukolov, 2004; Dubina.2005; Ayvazyan, 2010; Nasledov, 2008; Dubyanskii, 2005; Dubrov, 2004; Eliseeva, 2011 and others. However, some regional aspects of the agricultural development problem in the regions haven't been studied well; there is no comprehensive approach to the justification of methods for assessing and predicting the level of agricultural production, applied and methodological base of scientific researches leaves much to be desired.

2. RESEARCH METHODOLOGY

On the basis of the statistics in the region of the Russian Federation (Chelyabinsk oblast, Urals federal District) a statistical study of the dependence of grain yields (q/ha) on the agricultural production was carried out (by means of statistical software Econometric Views) (Ural Federal District, 2015). As a result, the best multiple regression model was chosen [10]:

$$\hat{Y}_t = 5.374345 + 0{,}000038 \cdot X_1 - 0.149164 \cdot X_2 - 0.0000074 \cdot X_3 +$$
$$+ 0.002303 \cdot X_4 + 0{,}000406 \cdot X_6 - 1.122243 \cdot X_7 -$$
$$- 0.191838 \cdot X_8 + 0.910512 \cdot X_9 - 5.271535 \cdot D_1 + 2.637433 D_2 \qquad (1),$$

where:
Y – grain crops yield (q/ha);
X1 – amount of fertilizers (kg/ha);
X2 – number of equipment for preparing soil for growing crops (for 100 ha);
X3 – average air temperature (degrees);
X4 – number of harvesters (reduced power for 100 ha); X6 – number of wheeled tractors (reduced power for 100 ha);
X7 – precipitation during a growing period (mm);
X8 – number of employees (people);
X9 – number of plant protection chemicals (q/ha);
D1 – types of seeds (1- hard type, 0- soft type);
D2 – land cultivation (1- it has been done, 0 – it hasn't been done).

On the basis of the built model of the dependence of grain yields on the agricultural production, one can make a prediction about the future and define values of factors that can be modified in order to increase the grain crops yield in any region of the Ural Federal District. To perform these tasks the configuration was created by means of 1C tools to work with these factors. It allows you to get a report where the database gives an average value of the grain crop yield over a given period of time in any district of the Chelyabinsk oblast, it also gives a graphical representation of the changes in the level of grain crop yields and average values of the factors that affect the level of grain crop yields.

3. RESULTS

The information system called "grain crops yield" was created which performs the following functions: storing all data about factors of agricultural production; making reports and graphs. One can add, edit, and delete any data from the database. When you request a report for the chosen period of time in the range of available information, the database gives an average value of yields during this period in the selected area; it also gives a graphical representation of the changes in the level of grain crops yields and average values of the factors that affect the level of grain crops yields.Two tables were designed for the built configuration 1, 2:

Table 1: The list of districts in the Chelyabinsk oblast

Name	Semantics	Data type	Key	Example
Code	Code	Number	*	00000001
Text	Text	Line		Troitsky district

Source: created by the authors

Table following on the next page

Table 2: Statistical data

Name	Semantics	Data type	Key	Example
Period	Period	Date	*	01.01.2018
District	District	Line	*	Kizilsky district
Amount of fertilizers	Amount of fertilizers	Number		30.5
Number of equipment for preparing soil for growing crops	Number of equipment for preparing soil for growing crops	Number		0.9
Average air temperature	Average air temperature	Number		22.5
Number of harvesters	Number of harvesters	Number		2.6
Amount of mineral fertilizers	Amount of mineral fertilizers	Number		20.4
Number of wheeled tractors	Number of wheeled tractors	Number		1.6
Precipitation during a growing period	Precipitation during a growing period	Number		57.9
Number of employees	Number of employees	Number		167
Number of plant protection chemicals	Number of plant protection chemicals	Number		0.6
Soil quality	Soil quality	Number		30.5
Types of seeds	Types of seeds	Number		0
Land cultivation	Land cultivation	Number		1

Source: created by the authors

The following configuration objects were developed in order to implement the information system (table 3).

Table 3: Configuration objects

Objects, units	Name
Reference books	"The list of districts in the Chelyabinsk oblast" – the list of districts is kept here
Registers	"Statistical data" - information about factors of agricultural industry is kept here
Reports	"Report" - show an average value for the chosen period of time in the selected area, a graphical representation of the changes in the level of grain crops yields and average values of the factors that affect the level of grain crops yields.

Source: created by the authors

After starting a program a user gets access to the main program window where there are statistical data on districts of the Chelyabinsk oblast over a period of 10 years. On the main tab bar, there are main access tabs to subsystems of configuration (figure 1).

Figure 1: Main bar

Create	x	Find	The list of districts in the Chelyabinsk oblast	Report

Source: created by the authors

When you choose "The list of districts in the Chelyabinsk oblast", the window for editing, adding or deleting the list of districts pops up on the main bar. (figure. 2).

Figure 2: Tab "The list of districts in the Chelyabinsk oblast"

Create	x	Find	The list of districts in the Chelyabinsk oblast	Report
district				
Argayashsky district				
Ashinsky district				
Bredinsky district				
Varnensky district				
Verkhneuralsky district				
Yemanzhelinsky district				
Yetkulsky district				
Kartalinsky district				
Kaslinsky district				
Katav-Ivanovsky district				
Kizilsky district				
Korkinsky district				
Krasnoarmeysky district				

Source: created by the authors

When the program starts for the first time, a user fills in some essential information about the factors of the agricultural industry in the chosen area for the selected year on the command bar by clicking on which a user can make some changes, add or delete the information on the tab "statistics" (figure 3).

Figure 3: Tab "Statistical data"

Statistical data	1 C Enterprise	
Statistical data (Formation)		
Period		2011
District		Troitsky district
Amount of fertilizers		13,30
Soil quality		65,00
Average air temperature		21,50
Number of harvesters		3,10
Amount of mineral fertilizers		2,30
Number of wheeled tractors		3,00
Precipitation during a growing period		56,90
Number of employees		165,00
Number of plant protection chemicals		0,50
Number of equipment for preparing soil for growing crops		21,00
Types of seeds		

Source: created by the authors

To make a report on the main bar you should choose the "report" tab and in the popped window you can select a time period and the district which you want to make a report on. (figure 4).

Figure 4: Window "District and time period selection"

Report	
District	Ashinsky district
Create	
Period start date	2013
Date of the end of the period	2018

Source: created by the authors

When you click "Create a report", the window with the information that is necessary for the analysis and interpretation of the obtained date pops up:

- average value of the grain crops yield in the selected area which is calculated according to the chosen regression equation:

$$\hat{Y}_t = 5.374345 + 0{,}000038 \cdot X_1 - 0.149164 \cdot X_2 - 0.0000074 \cdot X_3 +$$
$$+ 0.002303 \cdot X_4 + 0{,}000406 \cdot X_6 - 1.122243 \cdot X_7 -$$
$$- 0.191838 \cdot X_8 + 0.910512 \cdot X_9 - 5.271535 \cdot D_1 + 2.637433 D_2 \quad (2)$$

- pattern of changes in the grain crops yield for the selected period
- average data on all available factors:
  - grain crops yield - 25,54;
  - amount of mineral fertilizers - 11,90;
  - number of wheeled tractors- 1,40;
  - number of harvesters - 25,00;
  - average air temperature - 18,00;
  - amount of fertilizers - 22,40;
  - precipitation during a growing period - 2,40;
  - number of plant protection chemicals - 75,90;
  - number of equipment for preparing soil for growing crops - 0,20;
  - number of employees - 198,00.

4. DISCUSSION

Of course, in this study as in any other, there can be some controversial ideas. For instance, in our opinion, we need a greater range of factors for a more objective assessment and more accurate prediction of factors and their influence on the grain crops yield.

5. CONCLUSION

The further development of a large-scale agricultural industry of the region in modern conditions is possible only on the basis of the study taking into account all factors that affect its development; the agricultural industry also requires the use of modern tools and research technologies that include statistical research methods. One obstacle to the wide spread of this approach is the lack of methodological recommendations on its use that take into account peculiarities of the agricultural industry and the specifics of its implementation at enterprises of the industry. The database and the program that were developed in this research allow on the basis of a selective regression equation to make a prediction about the future and to define values of factors that can be changed by simulating various scenarios of the economic

development of the analyzed indicator. Thus, we identify possible development alternatives over the long term for the most effective management decision-making in order to develop activities to increase grain crops yields in districts of the Chelyabinsk Oblast. The database is convenient and easy to use for any user. The results of the study will be useful for justifying recommendations on scenario modelling of the economic performance in the grain crops industry in the region.

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NEW QUALITIES OF HUMAN CAPITAL AS A CONDITION OF SUSTAINABLE ECONOMIC GROWTH

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ABSTRACT

This research is devoted to studying of new trends and the new acquired qualities of human capital for allocation of further factors of leaders to a new stage of development of human resources in the present. The main objective of the article consists in detection of the new required characteristics, assessment of features of the efficient population with a support not only on theoretical forecasts but also on the allocated mathematical models, statistical regularities and trends in labor market. Scientific methods and data helped to create the major necessary factors for development of human capital. Results show that transition from analog economy to digital faces a problem of quality of staffing. The young generation every year later comes into labor relations. In 2007 9.5% of young people aged 20 to 24 years worked in the Russian Federation, then in 2017 the value decreased to 5.7%. In 2017, 29.7% of senior positions are occupied by people aged 40 to 49 years, but specialists of the highest level of qualification are people aged 30 to 39 about 31%. We have done researches, which allow proving that symbiosis of the qualitative human capital and the innovative social and economic relations act as objective components of the steady economic system, that creates conditions for self-development. Key components of new economy are human capital. The context of the identified trends is the possibility of optimizing and building the human capacity and, as consequence, reduction of unemployment at the state level.

Keywords: *Economic Growth; Economic Opportunities, Employment, Human Resources, Stability Of Economic Growth*

1. INTRODUCTION

increasingly affected by key trends that affect the employment of the world economy and stimulate further significant changes in medium term. According to our hypothesis, we characterize this stage of economic development as a transition to the digital segment in the economy; that is, as that part of economic relations, which is mediated by the Internet, mobile communication, Information and Communication Technologies. It is the quality of human capital used in the modern economy that largely determines the level and state of development of the system. Investments that are aimed at increasing the stock of knowledge and skills of the employee, the acquisition of professional skills, as well as the preservation and improvement of living conditions form its potential as a specialist, who is able to be realized in production achievements, innovative developments, intellectual manifestations.

Also, the quality of human capital is characterized by the environment, the necessary characteristics of which is not only the possibility of obtaining services for life, but also the level of access to information. In the modern economy, there are many requirements for workers, so in order to be able to compete in the labor market, multiprofessionality, the development of related disciplines is necessary. Since a specialist in one field produces some kind of goods, but at the same time needs many others to meet their growing needs. The purpose of multiprofessionalism is obtaining a specialist who has extensive knowledge in all areas. The demand for such specialists existed in the labor market before but gaining experience in different professions was costly and most time-consuming; now, these methods have been simplified due to economic transition to the digital segment. Therefore, the government and educational institutions should encourage the training of multidisciplinary specialists and the acquisition of several specialties, that will be retrained throughout life, as with increasing the growth rate of scientific and technological development, not only modernized working conditions, but also replaced some functions by robots. It is worth emphasizing that the focus of education should be made on information technology, programs that use advanced industries; the system of continuous education remains relevant. Now the world labor market is characterized mainly by a resource approach to personnel management. Employers are interested in quick involvement of low-cost but qualified personnel (Barkhatov et al.,2016); maximum use of employees ' opportunities; lack of recognition of the value of each employee's personal contribution to the common cause, professional development of employees, but only in the case of the necessary competence with minimal cost. The situation is also affected by the fact that jobs are disappearing due to the digital transformation of the economy, the introduction of automation and robotics systems, increasing productivity. In addition, digitalization would widen the gap between low-paid and high-paid staff; there would be increased competition for low-skilled posts. However, competition for highly qualified staff will continue to increase. The nature of competition for personnel will change significantly, considering the departure of the old population and the entry into the labor market of Generation Z (born in 1995 and under) by the year 2025 (Kapkaev, 2018). This category of people uses digital technologies and have unlimited access to information from birth. There will be a change of priorities for applicants: personal growth, balance of work and personal life will be more important than financial reward and career with the advent of the digital generation. The article focuses on the results of a study on the characterization of human capital at this stage of development. The main purpose of the article is to identify new characteristics and features of the working population in the labor market. The study of the role of man in the economic system of post-industrial society necessitates the identification of human abilities, talents, knowledge, skills and other inalienable benefits as a special form of capital as they are the inherent personal asset of every individual; ensure that its owner receives a higher income in the future by giving up part of its current consumption.

2. LITERATURE REVIEW

2.1. Essence and formation of human capital

The study of human productive abilities, changes in its characteristics and their role in social production has deep roots in the history of world economic science and it is reflected in the works of many economists. The term human capital first appeared in the works of the economist Theodore Schultz, who proposed a definition, that all human abilities are innate or acquired, which can be enhanced by investment, i.e. human capital (Schultz, 1972). G. Becker considered the concept of human capital at the micro level in his articles and fundamental studies, in which he determined that human capital in the enterprise is a set of human skills (Becker, 1994). Most of the economists say that the human capital consists of the acquired knowledge, skills, motivations and energy which allocated human beings and which can be used during the certain

period of time for production of goods and services. It is a form of capital because is a source of future earnings, or future satisfactions, or all together. It is human because is a component of the person. The basis of this theory contains in scientific papers of William Petty, John Mill, Alfred Marshall, Heinrich Rocher and other scientists. John Stuart Mill did not consider the person as wealth, but its acquired abilities, it is wealth as they exist only as means and are generated by the work (Mill,2014). Mark Blaug considers that the concept of the human capital this idea that people spend for themselves the resources variously not only for the satisfaction of the current requirements, but also for the sake of future monetary and non-monetary income (Alessandro,2006). F. Liszt wrote in his scientific work that the skill and the acquired abilities of human beings from last work and self-restrictions, are the most important component of a national stock of the capital. He was one of the first to argue that in both production and consumption, the contribution of human capital to output can be considered (List,2012). We can see then, that there are various opinions that it "the human capital", in modern and last economic literature. These opinions differ by criteria at the moment. That to consider the capital: the person as a physical being or only his productive abilities which is inherited from the birth and knowledge, is acquired because of activity, skills, abilities. According to researches of modern Russian scientists, we can mark out such features of results. The group of experts includes in the human capital not only narrowly understood productive, but also social, psychological, cultural qualities of people: ability to behave in life and at work, to establish and support business contacts (Osipova et al.,2018). The specifics of a modern situation consist that necessary and productive in the national economy and in the economic sphere are humanitarian, personal qualities of the person for example honesty. Also, some experts include knacks in the human capital that can increase productive forces of work and there is an income source. A. Monge-Naranjo emphasizes that the basis of human capital is education and train highly skilled specialists with technological culture and high working capacity, such experts will be able to act not on templates and will be able to independently transform and develop professional prospect. Christian Imdorf also believes that the development of human capital is based on strong academic competition in accessing senior high schools and higher education. Young people with higher education are valued and it is easier for them to find a job if they also have special skills. However, we consider that these definitions do not fully disclose the characteristics of human capital. With the increasing role of the digital segment in the economy, communications as a criterion of human capital play the most important role; social skills come to the fore such as the ability to establish business connections, the ability to use Information Technology for this, effective search and selection of information. We have formed for our study the most appropriate definition of human capital based on the analysis of the founders of this theory and the views of modern scientists. Human capital is a certain set including health, knowledge, skills, abilities, motivation formed as a result of investments and accumulated by a person, which are expediently used in a in different areas, they contribute to its development and increase productivity and thus affect the increase in earnings (income) of the person, allow for competition. We can measure human resources quantitatively (the number of people, the proportion of those engaged in useful work, the number of hours worked) and qualitatively (skill, knowledge and similar properties that affect human abilities and productivity growth). The costs of developing these abilities, and therefore the increase productivity of the worker, are called "Human investments". All types of expenses are considered as investments in human capital which can be estimated in monetary or other form and have expedient character and promote growth in the future of earnings (income) of the person. In a broad sense, human capital is formed by investing in person in the form of costs for education and training of employees for the enterprise, for health care. Human capital can be represented as a combination of its elements, that is, it has its own internal structure. Many economists form the structure of human capital based on the cost principle, implying a variety

of types of investment in human capital; for example, stimulating consumption; since the consuming person is beneficial to the state. So, I. V. Ilyinsky allocated the following components of human capital; it is health, culture and education. In turn, F. Neumann added cultural and ethnic features, qualification qualities, general and vocational education (Neumann, 1990). E. V. Vankevich identified such components as education and training, health, needs, motivation, values. Despite the diversity of views on content noted above, all researchers agree, without exception, that much of it is formed in the formal education system. The creation of human capital is the process of developing a person's productive abilities by investing in specific processes of an individual's activity. At the same time, investments can be considered in two ways — as investments of funds in resources, and as in certain types of activities. Human capital is created through investments in improving the level and quality of life of the population in intellectual activity; including education, health care, knowledge (science), the ability of the enterprise to information support of labor, safety of citizens and business and economic freedom, as well as culture, art and other components. In terms of scientific and technological progress, more resources are spent on training a specialist, the investment becomes more long-term, so we get a competent specialist in a more Mature age, but thanks to digital technology the employer can attract an employee even at the stage of his training. To do this, it is necessary to understand the quality of labor resources at different stages of development of a specialist and what quality labor resources are needed in different segments of the economy.

2.2. Ways to assess the quality of human capital in accordance with new challenges

Many scientists, economists and managers consider the characteristics acquired by human capital in modern times and ways to assess the level of quality. But it all comes down to one thing; conditions that ensure the quality of human capital is a high level of education that meets the requirements of the latest technology qualifications, quality of health and living conditions, all this is of key importance as a component of the state's economic growth strategy. Based on this, we can say that the state of education, health, circumstances and conditions that determine the standard of living of the population, form the quality of human capital and its impact on economic growth. If we talk about the indicators of this process, they can serve as indicators of per capita cash income, the average monthly nominal wage, the average size of pensions, the subsistence minimum and several others. In the macroeconomic analysis of dynamics and factors of accumulation of the human capital it is necessary to consider, both quantitative, and qualitative characteristics of the population incentives for education, accumulation of knowledge, skills and experience. These economic incentives are determined by the difference between the amount of additional income for the period of future employment, due to the receipt of this education, and the cost of their acquisition. A major problem in this analysis is the long-term perspective and uncertainty of future income associated with education. For this reason, as well as due to the difficulties of their forecasting, even for large professional groups of the population, the importance of social norms, for example, the social status of a profession, as an incentive to choose one or another professional education. Quantitative economic criteria for the choice of education for young people have limited practical applicability because the information available for their calculation is taken from past experience, and not from forecasts of future development of the labor market. In addition to the lack of reliable forecasts of the state of the labor market in the world, there is still a significant differentiation of wages, both by region and within one professional group, which makes it difficult to assess the benefits of education. Based on the theoretical analysis, we conclude that modern human resources in order to be transformed into human capital should have such basic characteristics as the quality of education, the level of health care and a number of additional feature; for example, knowledge of new competencies of the digital economy digital literacy, the ability to search, create,

process, use, share and sell data, to be able to interact with other people, to prioritize, to have the skills of empathy, concentration and attention management, soft-skills, to observe information hygiene (ability to distinguish facts from fiction), to work and manage information in modern information environments, media, social networks, marketing. In the context of digitalization of the economy, the essence of human capital is changing, it must be considered more than just a set of knowledge, skills; the development and evolution of society with its intellectual, creative, moral and ethical assets and values comes to the fore. These skills are extremely scarce, and the deficit will only increase. We have reviewed the statistics of indicators that indicate the quality of human capital in different countries in order to prove the proposed by us and to identify new major trends and acquired characteristics; in addition, we have identified the skills required by the employer at this stage.

3. RESEARCH METHOD

Several countries were taken as the object of the study to confirm the hypotheses, but since there is one tendency everywhere, the comparative retrospective analysis of human capital will be carried out on the example of the Russian Federation; the most perspective qualities are revealed and models of the most effective application of human resources at all stages of development are created. Employed people are people who perform any activity related to the production of goods or the provision of services for payment or profit. We have studied the statistics of employed people aged 15 to 72 years, from this array are three differential groups. The first group of people who are just beginning their careers, are aged 20 -24 years we characterize them as immature people; the second group consists of people aged 40-44 years are included in the term Mature workers, this group is characterized by the fact that people at this age reach maximum working activity; and the last final group of people who are in the age of 55-59 years, summarized by the concept of overripe workers, because they have a decrease in performance. The paper proposes a method that is based on three stages:

- The first stage is based on the study of the structure of employment by age groups, it shows the percentage of the working population of the total number of the relevant age group;
- The second stage studies the number of employees by age and occupation groups, it allows us to draw a conclusion about what position according to statistics is most often occupied by a person in different years of life.
- The third stage reveals the structure of employment by level of education and age group it helps to make a conclusion about the level of education of the population in different periods of life, the percentage of the population in the relevant age group. Assessment of the level of education is important to characterize the quality of the workforce, as it directly affects the degree of qualification and the ability to make non-standard, creative decisions.

The study of the qualities of human capital is based on comparative analysis United Nations Statistics Division (UNSD), The World Bank Group, Rosstat, the state statistics EMISS. The method of rapid assessment and empirical analysis is used to trace the dynamics of the characteristic features of human capital for economic growth at each level. Several countries were taken as the object of the study to confirm the hypotheses, but since there is one tendency everywhere, the comparative retrospective analysis of human capital will be carried out on the example of the Russian Federation; the most perspective qualities are revealed and models of the most effective application of human resources at all stages of development are created. Employed people are people who perform any activity related to the production of goods or the provision of services for payment or profit. We have studied the statistics of employed people aged 15 to 72 years, from this array are three differential groups. The first group of people who are just beginning their careers, are aged 20 -24 years we characterize them as immature people; the second group consists of people aged 40-44 years are included in the term Mature workers,

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4. THE RESULTS

The human resources industry has undergone significant innovation in recent years. Scientific methods and data have helped to form the main factors necessary for the development of human capital. The results show that the transition from analog to digital economy is faced with the problem of quality of staffing; this is evidenced by the data of the sociological survey of managers and employers. According to the generalized results of sociological research, employers who could not find a suitable employee for the position, we can identify such key skills.

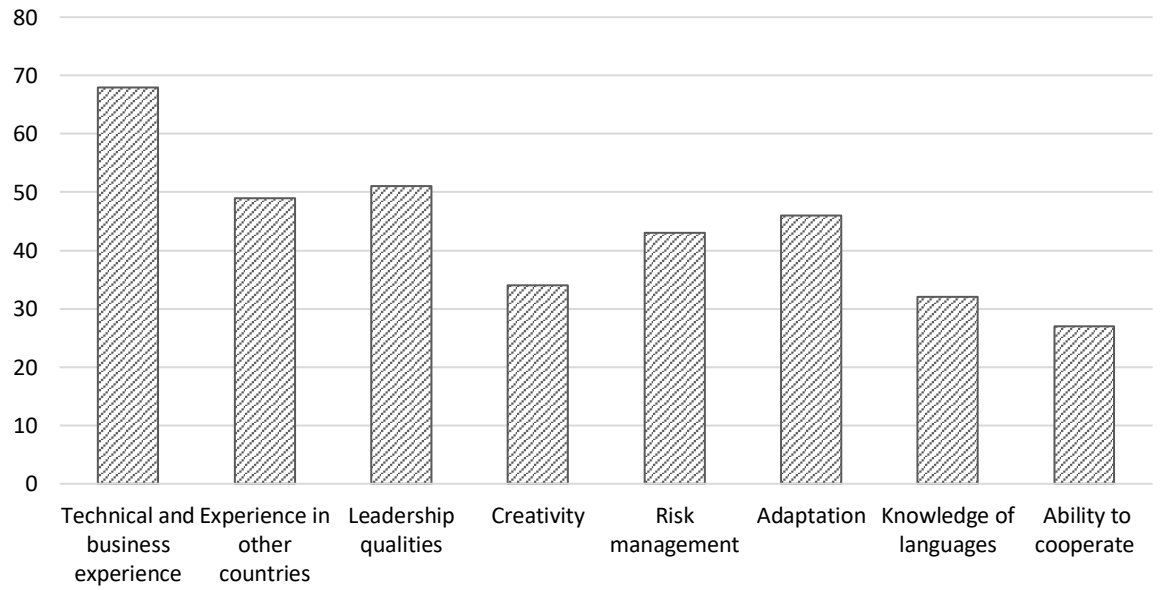

Figure 1: The need for skills of the applicant in the selection of personnel by the employer (%) (Own elaboration)

The most demanded skills for human capital are revealed: this is a synthesis of technical and business experience 68%, experience 49%, risk management 43% (predictive ability); this confirms our hypothesis. According to statistics, about 30% employers in the world can't find an employee because of the required skills. Consider the part of workers. Education in our time began to play an important role in the choice of profession, competent skills and abilities, so the process of obtaining it became lengthier because of what the younger generation every year enters the actively employed population later. Having studied the statistics of employed people in different age groups, we can observe the following dynamics:

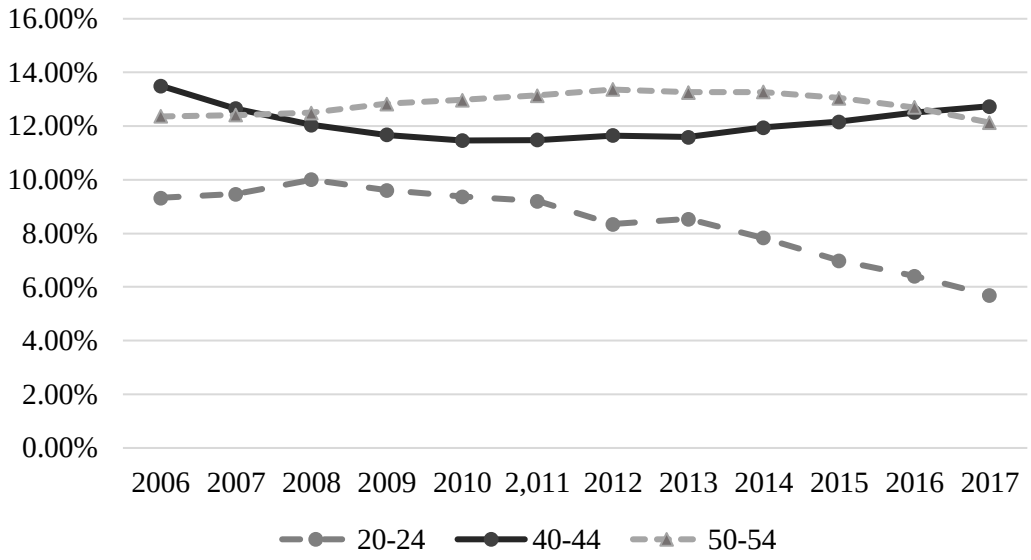

Figure 2: The number of employed by age groups (Own elaboration)

Based on the graph, we see a decreasing trend in the number of employees between the ages of 20 and 24. Over 10 years, the number of employed decreased by 2.5 million people. There are several reasons for this trend: young people are still receiving education and are unable to work, or employers refuse to accept them because they do not have enough competent skills to work in a particular field. The group of employees aged 40 to 44 years in 2017 compared to 2007 has not changed, but there was a decline in 2010 by 1.3 million people compared to 2006. The older group (overripe group) remained at the same level. In order to obtain competent skills and abilities, as well as higher paid work, people are trying to get an appropriate education, so there is a trend of increasing the number of students in higher education; this trend is presented on the chart.

Figure following on the next page

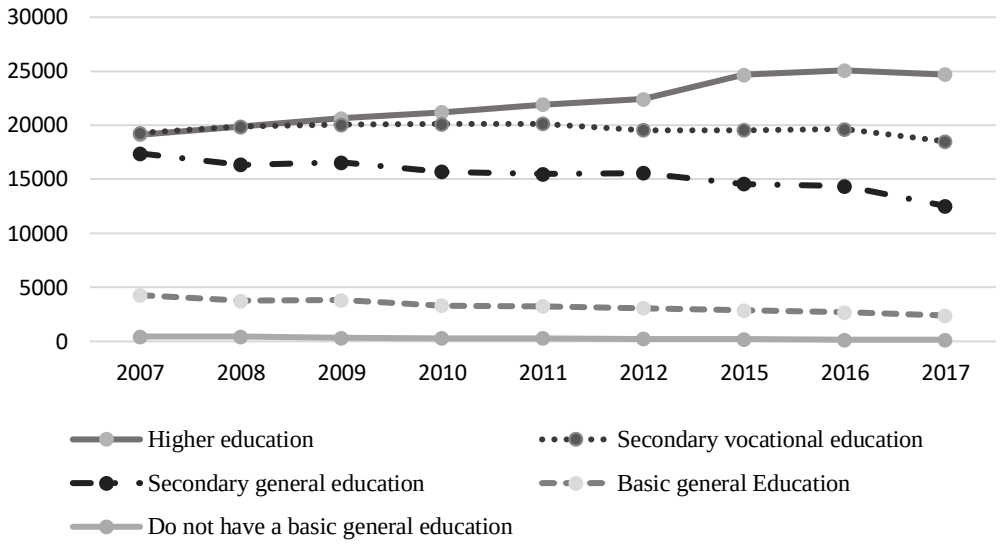

Figure 3: The number of employees by level of education (Own elaboration)

The number of people who received higher education in 2017 amounted to 24.7 million people, which is 30% more than in 2007. In 2017, the number of people with higher education amounted to 34.2% of the total number of employed. Measurement of educational potential by age groups based on data of Rosstat, the period from 2007 and 2017 shows a significant increase in the share of the younger generation aged 25 to 29 years with higher education, they make up almost half of the total population 42.2%. The chart 4 shows the change in the number of employees by level of education.

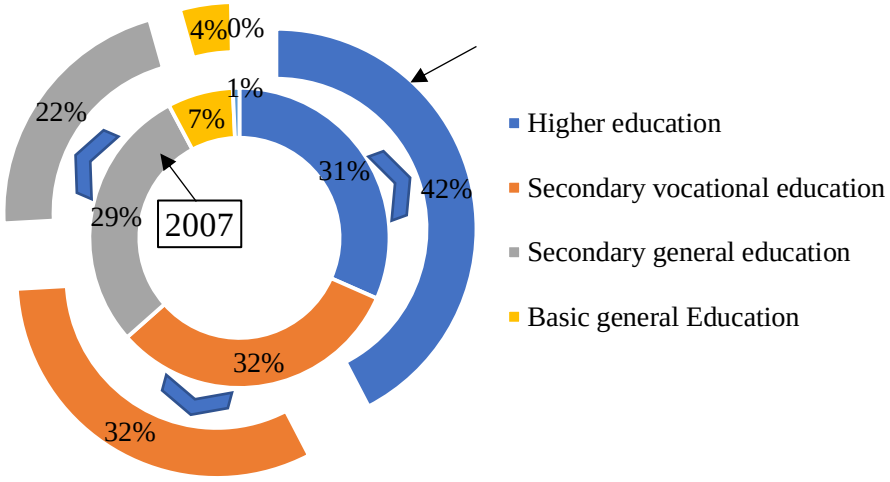

Figure 4: Changes in the share of education of the employed in 2007 and 2017 (Own elaboration)

The study of the dynamics of the number of employed people in the Russian economy in terms of education for the period from 2007 to 2017 showed a number of significant trends for the development of human capital. First, throughout the observation period, more than half of all employed in the economy have the level of secondary and primary vocational education; secondly, a steady period of growth in the number of employees with higher professional education began in 2007, and the crisis in the economy almost did not affect this group; third,

the proportion of persons with achieved schooling has decreased by 28% during this period. The next stage of the study is aimed at studying the number of employed populations by groups of occupations.

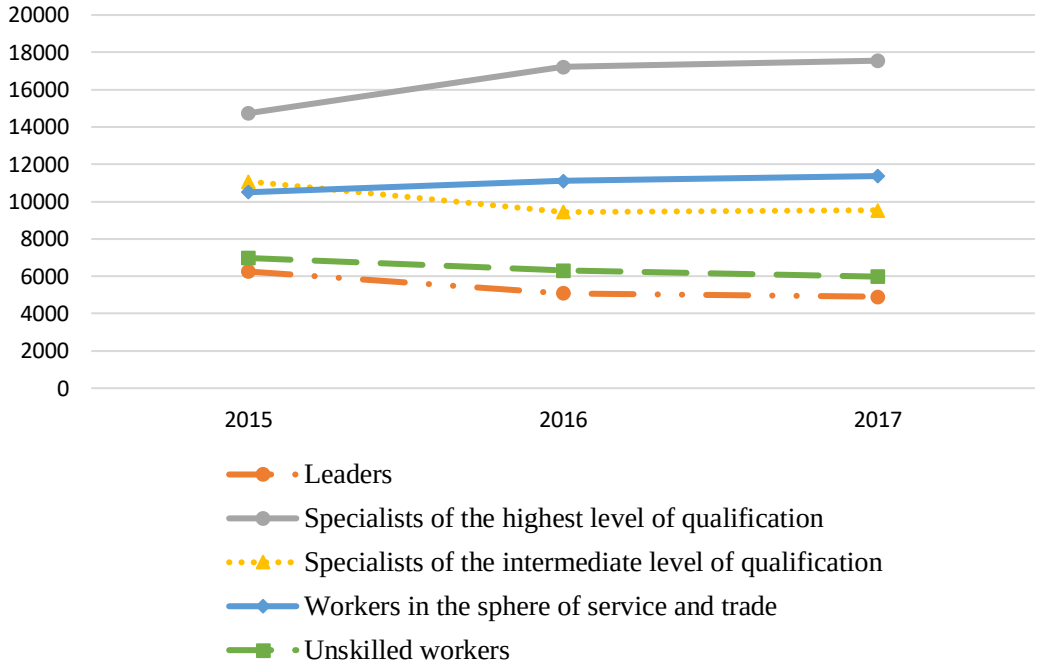

Figure 5: Number of employees by groups of occupations (Own elaboration)

Analysis of trends in the number of employees by economic activity showed the growth of top-level professionals in the period from 2015 to 2017, their number increased by 20%, with the largest share of 31% people aged 30 to 39 years. The number of leaders in three years decreased by 22%, due to the fact that the employer requires inflated conditions for employment, there is a shift in positions; so, in 2017 the number of managers aged from 20 to 29 years decreased by 90.000 people in comparison with 2015, the number of managers aged 50 to 59 was also reduced by 12%. Now on the Russian market the maximum number of managers 29.7% of the total number of people aged 40 to 49 years, they are in the opinion of the market have the necessary human capital for modern economic condition. The number of employees in the service sector has increased by 8.2%, mostly young people aged 20 to 24 years of about 26%, largely due to the fact that young people are still receiving education and they have no experience, that is not enough of the knowledge that employers demand in other areas of the economy. In addition to all the above reasons, the structure of employment by groups of occupations is affected by changes in the demographic situation, as along with the process of natural reproduction of the population there are migration processes. The impact of globalization has a negative impact on the labor potential of the country, as at the moment the outflow of able-bodied population over its inflow significantly prevails, in addition, the quality of labour migrants leaving the country is high in terms of education. Most of the migrant workers are young people. If we consider them by age groups, the first group at the age of 21-25 years is 23% respondents, the second group is the largest: 26-30 years is 41% and the third group-31-35 years includes 24% respondents. Further, with the increase in the age of migrants, their share in the migration flow is greatly reduced. Thus, young people are the most mobile group in terms of labour migration. Based on the analysis we can distinguish several patterns, firstly, the labor market is currently subject to changes associated with deformation of labor requirements; the discrepancy between the quantity and quality of graduates of educational

institutions to the needs of the enterprises; external and internal migration processes; the decrease of the rating of attractiveness of engineering and working professions; the presence of companies competing for professionals and talents.

5. CONCLUSION

The conducted research allows to prove that the symbiosis of quality human capital and innovative socio-economic relations are the objective components of a sustainable economic system, that forms the mechanism of self-development of the knowledge economy. Human capital is a key component of the new economy. In scientific work, we have considered human capital at three levels according to the age criteria of immature workers, mature workers, overripe workers. Now there is a change in working conditions. Young people are increasingly attracted to free work, not chaining to the workplace, the lack of a rigid schedule, comfortable working conditions in a convenient place and at a convenient time. At the current stage of development, the mobile economy is able to create a large number of jobs, this trend will significantly reduce unemployment at the state level. The development of the digital segment has led to an increase in the number of multidisciplinary professionals through the development of Internet platforms and remote work. They help to increase the mobility of workers and provide comfortable working conditions, attract young people who are at different levels of education in their free time. This is due to the feature of the work that can be combined with the educational process; education will play a significant role in the future. The need to improve the competitiveness of education requires the use of effective teaching methods that contribute to better assimilation of the material, the activation of students during class; such learning tools include Internet technologies; computer-based training system (e-textbooks, simulators); the e-knowledge test (computer-based tests); new technical means of training (interactive whiteboard, multimedia projector, etc.). The share of e-education will also grow and that education with the advent of new professions will prepare new specialties. The study found that, the number of leaders in three years decreased by 22%, but at the same time there is a growth of specialists of the highest level of qualification by 20%, this is since the employer requires inflated conditions for employment in higher positions. There is a need for the formation of human resources, possessing new competencies. According to the data obtained in the course of the study, such skills are technical and business experience, international experience, leadership qualities, communication; knowledge and skills alone are not enough, the market requires specialists with relevant skills and the ability to apply them effectively, with motivation for continuous development. Now there is a problem in Russia, weak cooperation of enterprises and educational institutions; therefore, the graduates have poor employment. Also, the current educational system is based on theory and, as a rule, education is separated from the employer. In most cases, the practical training of students in enterprises is formal, the necessary skills are not fully mastered; the equipment does not correspond to advanced technologies in most educational institutions of the country, there is no possibility of rapid updating of material and technical base. Statistics show that there is a downward trend in the number of people between the ages of 20 and 24 around the world. In particular, the number of employed in Russia has decreased by 2.5 million people in 10 years, but the number of people who received higher education in 2017 amounted to 24.7 million people, which is 30% more than in 2007. It is very important to start changing the process of education to solve the identified problems. First, since people began to spend more time on education, there is a need to establish a relationship between educational institutions and enterprises in which graduates could work. This cooperation will allow you to gain experience at the time of training, and after graduation to get employment from a reliable employer. Secondly, an important stage of training is also the gamification of the educational process, in this model there is a kind of cooperation between employers and educational institutions.

The introduction of gamification in the learning process will prepare students for work. The experience of gamification application in Russian higher professional education allows to introduce students to the future profession, formation of values of professional realization and development of professional personality, and also significantly increase the efficiency of the educational process by immersing in the system of educational goals, objectives, problems, projects through game technology. Gamification in higher education is designed to create an information and learning environment that would contribute to the development of soft-skills, that is, communication skills, independent, active desire of students to gain knowledge, professional skills and abilities, such as critical thinking, decision-making, team work, be ready for cooperation. Thus, gamification helps to reveal creative abilities and motivates self-education. On the basis of such education a person becomes more prepared for the modern digital economy. It should be noted that the development of the future economy is concentrated around the person and his capabilities. People are the soul of the digital economy. And it's not only and not so much about education. The economy of the future is the economy of passionaries of creators, bright personalities, generators of ideas; competition for such people will only intensify.

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PECULIARITIES OF EDUCATIONAL NEEDS OF YOUNG PEOPLE WITH DISABILITIES IN MODERN RUSSIAN SOCIETY

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ABSTRACT

The educational needs of young people with disabilities are studied from the perspective of structural and functional analysis, sociology, pedagogy, monitoring the educational needs of students with disabilities, and socio-psychological well-being of students studying in inclusive groups, as well as the integration of people with disabilities into the community. The empirical basis of the research was formed by the data of the surveys of 2017 and 2018, in which 155 graduates with disabilities of general educational and special (correctional) schools of the Sverdlovsk, Chelyabinsk, and Kurgan regions took part. The survey of 2018 was conducted among 1047 students of the inclusive groups of 11 higher education institutions of the mentioned regions. The study reveals support for inclusive education by the vast majority of applicants and students with disabilities, as well as a significant majority of healthy students. Most students with disabilities choose their future occupation by the end of school. The level of social and psychological well-being and satisfaction with the overall student life is very high, according to both healthy students and students with disabilities. The assessments of the main components and conditions of the educational process are also approximately the same. There is also a discrepancy in their opinions on specific indicators. Thus, among students with disabilities, there are relatively more of those who positively assess the possibility of receiving medical and psychological assistance for a healthy lifestyle. The number of healthy students is relatively higher among those who positively evaluate the work of the dean's office, the student council and the warden council, leisure and recreation facilities, and extra-curricular activities. In obtaining higher education, social and psychological support, as well as the adaptation of training programs to their needs, are singled out from the list of needs of applicants with disabilities. Students of inclusive groups of higher education institutions point out the problems during the process of education and communication, medical and psychological assistance, leisure activities, and others. Based on the research results, it is recommended to continue monitoring the state of inclusive education and addressing its problems from the perspective of strengthening the integration of persons with disabilities into modern society.

Keywords: *Adaptation, Well-being, People with disabilities, Inclusive education, Educational needs*

1. INTRODUCTION

At the current stage of the development of Russian society, the formation and implementation of the educational needs of young people with disabilities are becoming more relevant and significant. Education is a leading factor in social progress. It is also an integral part of the socialization of each individual, and it plays an essential role in the adaptation of each social group in a changing society. Education plays a unique role in the adaptation and integration into the community of a social group such as young persons with disabilities. Issues relating to the implementation of the educational needs of young people are particularly important in the context of inclusive education, which ensures equal access to education for all learners, taking into account the diversity of special educational needs and individual opportunities and the humanistic nature of education. However, opinions on inclusive general and vocational education are mixed (Bocharnikova, I.S., 2018, Cook, B.G., Gerber, M.M., Murphy, J., 2000, Grunt, E., 2018, Kantor, V.Z., Proekt, Y.L., 2019, Martynova, E.A., 2016, Ryabinova, E.N., Chekanushkina, E.N., Timoshchuk, N.A., 2018). There is much support for inclusive general and vocational training, but there are also people who advocate for the education of persons with disabilities (PWDs) in separate special groups or specialized education institutions. There are differences in the needs and interests of students with disabilities and healthy people. It is essential and urgent to study the peculiarities of the educational needs of young people with disabilities and their demands for competence to solve vital problems. The employment situation of such graduates also looks contradictory. The socio-psychological environment should also be monitored in inclusive groups. Representatives of several sciences, primarily philosophers, psychologists, sociologists, pedagogues, study the educational needs of young people with disabilities (Gavrilenko, L.S., Chupina, V.B., Tarasova, T.I., 2016, Kantor, V.Z., Mazur, M.A., 2019, Salegi, AM., Lopez, RC., Rodriguez, AZ., 2019). The purpose of our study was to analyze the peculiarities of the educational needs of young people with disabilities. This purpose defined the following tasks:

1. To identify the attitude of high school graduates with disabilities and students of inclusive groups of universities to inclusive education and their requirements to its conditions and components;
2. To evaluate the socio-psychological well-being of students of inclusive groups of higher education institutions as a result of their satisfaction with the implementation of their educational needs.

The object of the study is the educational needs of graduates with disabilities of general educational and special correctional schools, and the students of inclusive groups of higher education institutions. The subject of the research is the peculiarities of the educational needs of young disabled people and their implementation in modern Russian society. The theoretical and methodological basis for research in the provisions of structural and functional analysis is the T. Parsons sociological school. According to him, changes in elements of the system have a direct influence on the entire system. In addressing the peculiarities of the educational needs of young people with disabilities, an interdisciplinary approach has been adopted, consisting of the study of data from psychology, pedagogy, and the sociology of education. The system approach also manifested itself in the orientation to the monitoring data of 2017 and 2018 on the educational needs of applicants with disabilities, as well as monitoring data of 2018 data on the social and psychological well-being of students of inclusive groups of universities in the Sverdlovsk, Chelyabinsk, and Kurgan regions of the Urals region. An inclusive group is a study group in which students with disabilities health impairments (deaf or hard of hearing, significant vision impairment, cerebral palsy, wheelchair users, people with an autism spectrum disorder, neuropsychiatric disorders, etc.) are enrolled on a full-time basis. In the course of the conducted research on the questionnaire of an applicant with disabilities in 2017 and 2018, 155 graduates

with disabilities of general educational and special (correctional) schools of Sverdlovsk, Chelyabinsk, and Kurgan regions (after this referred to as applicants) were interviewed (Biryukov, E.S., Kozlov, V.N., Romanenkova, D.F., Salganova, E.I., 2019). In November 2018, the monitoring of the social and psychological well-being of students studying in inclusive groups of higher education institutions was started. In December 2018, 1047 students from 11 universities of the Sverdlovsk, Chelyabinsk, and Kurgan regions were interviewed. Of the total number of students surveyed, 14% have disabilities, and 86% are healthy (Kozlov, V.N., Romanenkova, D.F., Salganova, E.I., 2019).

2. ATTITUDES OF YOUNG PEOPLE WITH DISABILITIES - HIGHSCHOOL GRADUATES AND STUDENTS OF INCLUSIVE GROUPS OF HIGHER EDUCATION INSTITUTIONS TO INCLUSIVE EDUCATION AND THEIR REQUIREMENTS TO ITS CONDITIONS AND COMPONENTS

According to surveys of applicants with disabilities in schools of Sverdlovsk, Chelyabinsk, and Kurgan regions, the vast majority - 141 out of 155 respondents in 2017 and 2018 - found it convenient to obtain knowledge and qualifications in the chosen profession full-time and part-time education in groups with students without health restrictions. The number of applicants, for whom such forms of education are convenient, has increased significantly since December 2017. The vast majority (79%) of surveyed students studying in inclusive groups across the region supported the creation of mixed groups consisting of healthy students and students with disabilities in 2018. Students with disabilities (89%) are significantly more likely to support mixed groups compared to healthy students (78%). At the same time, the monitoring of the educational needs of disabled school graduates reveals that one in six of them considers it a convenient form of obtaining knowledge and qualification in the chosen specialization in full-time and part-time education studying in a group with disabled students. We believe that there are objective and subjective reasons for this, and maybe they need to be considered in the future. Attention is drawn to the fact that almost three-quarters of applicants with disabilities choose their future occupation by the end of each calendar year. Applicants make a choice depending on their hobbies, correspondence of future profession to their hobbies, and income as well. The choice of occupation for applicants with disabilities is also due to its popularity, prestige, career prospects, and ease of access. In December 2018, almost one in four applicants with disabilities did not decide on their future occupation in December 2018, and one in seven applicants in December 2017. TV, teachers, and employers are less critical among the sources of information that guide applicants with disabilities in choosing an occupation. Such certainty with the future occupation among the most applicants with disabilities allows them not only to choose a university for higher education more reasonably but also to impose requirements on the educational process in it. One of the needs of applicants with disabilities in higher education is socio-psychological support. It was indicated by one in four respondents in 2018. One-fifth of applicants note the need for special equipment, but all persons with first group disability point to the need for such equipment. Every ninth applicant needs the help of an assistant, with hearing disabilities –every fourth, with the first group of disability – every third. Five respondents need to develop an individual educational program. Two-thirds of applicants with disabilities in 2018 did not see the need for technical equipment and specialized services when studying at a higher education institution. However, some students need certain types of technical equipment and specialized services. When choosing an occupation, every third applicant with disabilities does not need the help of a career guidance specialist, even more students with the first group of disability do not need the help of a specialist. The need for socio-psychological support in obtaining a higher education is not mentioned at all by applicants with disabilities of the musculoskeletal system and applicants in the first group of disability.

Applicants with disabilities of the musculoskeletal system, as well as persons in the second and third groups of disability, do not need special equipment. In 2018, as in 2017, the majority – two-thirds of applicants with disabilities believed that the curriculum should be modified and adapted to their needs. In 2018, every fourth applicant with disabilities felt that education programs should be the same for everyone. The data from the monitoring of the socio-psychological well-being of students of inclusive groups of higher education institutions in the region in 2018 showed that inclusive groups mainly meet the needs of students, conditions, and components of the educational process and extra-curricular activities. Thus, a significant majority – 88% of students positively assess the organization of the educational process, but 84% of students with disabilities and 89% of healthy students. 88% of students positively evaluate the work of the dean's office, 87% - the willingness of teachers and staff of the university to work with students with disabilities. 86% of all surveyed students positively assess the work of the student council, the board of chiefs, but 82% of students with disabilities and 86% of healthy students. The organization of leisure activities at the university is positively asses by 86% of students. Opportunities and conditions for physical education and sports - 81%, but 84% of students with disabilities and 80% of healthy students. Environment for independent and creative work - 80%. It should be noted that other conditions and components of the educational process receive positive and coinciding assessments of the majority of students among both healthy students and ones with disabilities. There are also differences in the evaluation of the possibility of receiving medical care at the university (positively noted by 71% of students with disabilities and 65% of healthy students) and the option of receiving psychological assistance (indicated by 72% of students with disabilities and 62% of healthy students). The majority (73%) of students in inclusive groups emphasize that their universities have created conditions that promote a healthy lifestyle for students. Moreover, this is indicated by 78% of students with disabilities and 72% of students with normal health. A positive assessment by the majority of students of the conditions and components of the educational process at their higher education institutions does not mean that there do not face any challenges or shortcomings during their educational process and extra-curricular activities. Negative assessment is made by 32% to 22% of students of inclusive groups of the possibility of receiving medical and psychological assistance in their higher education institutions, living conditions in the dormitory, the work of curators with the groups, catering, recreation and leisure activities, the availability of equipment, special furniture, technical equipment used in educational process, etc. Every sixth student believes that the conditions created in higher education institutions do not contribute to a healthy lifestyle. Quite a lot of students (45%) do not engage in extra-curricular activities, while 22% are not willing to do so (26% of students with disabilities and 21% of healthy students). An insufficient organization of leisure activities by the university is indicated by 13% of students. Every fifth student faces problems during the studying process. At the same time, there are such issues as the need for additional time to adapt to the learning process, lack of knowledge about the usage of special technical equipment, difficulties in organizing group activities, and communication.

3. SOCIO-PSYCHOLOGICAL WELL-BEING OF STUDENTS OF INCLUSIVE GROUPS OF HIGHER EDUCATION INSTITUTIONS AS A RESULT OF THEIR SATISFACTION WITH THE IMPLEMENTATION OF THEIR EDUCATIONAL NEEDS

The results of a survey carried out in December 2018 among the students studying in inclusive groups in the universities of the Sverdlovsk, Chelyabinsk, and Kurgan regions indicate a rather high level of their social and psychological well-being. A significant majority of students (85%) of inclusive groups, 90% of students with disabilities, and 85% of healthy students are generally satisfied with their student life.

92% of students in inclusive groups and 90% of students with disabilities indicate that they were never laughed at in their study group because of their appearance, manner of speaking, nationality, religious beliefs, etc. 83% of inclusive students and 85% of students with disabilities feel protected in a higher educational institution. 86% of students in inclusive groups and 84% of students with disabilities indicate that conflicts are not frequent in their study group. The level of socio-psychological well-being of students of inclusive groups of higher education institutions is quite high due to the creation of conditions and components of the educational process that allow meeting the educational needs of students with disabilities and healthy students. It is also important to note that the vast majority of students in inclusive groups do not have problems with their classmates, teachers, or dissatisfied with the lack of organization of leisure activities at the higher education institution. A significant number of students (80%) do not face challenges during their educational process. When problems arise, most students first turn to their parents, relatives, friends, and classmates for assistance. Students rarely ask for help from the university administration, curator (tutor), or teachers when they face challenges during their educational process in the higher educational institution. The identified challenges and shortcomings in the educational process and extra-curricular activities have some impact on the socio-psychological well-being of students studying in inclusive groups. Thus, a proportionately large amount of students (almost a quarter) feel alone. Nearly a fourth of respondents and 20% of students with disabilities do not like to study in the same group with some classmates. One-fifth of students claim that they do not take part in some tasks in the group, while the number of students with disabilities facing this exact problem is 16%. Every sixth student disagrees with the fact that he/she feels protected at the higher educational institution, and every seventh student with disabilities feels the same. Every tenth student is not generally satisfied with his or her student life, but only one out of seventeen students with disabilities feel the same.

4. CONCLUSION

The fact that the majority of school graduates with disabilities choose their future occupation by the end of school convincingly proves that they have formed a demand for further training; they want to acquire a profession and take their place in life. Monitoring of the educational needs of applicants with disabilities and socio-psychological well-being of students of inclusive groups of higher education institutions shows the recognition and support for the feasibility of inclusive education by the young people, their friends, and relatives. The monitoring reveals the rational requirements of the majority of applicants with disabilities and students of inclusive groups of higher education institutions to the conditions and forms of inclusive education. Thus, a noticeable majority of applicants with disabilities and students of inclusive groups of higher education institutions advocate for the creation of mixed groups consisting of students with disabilities and healthy students. The majority of students with disabilities advocate for modification and adaptation of the curriculum to their needs. A significant part of applicants points out the need for social and psychological support, specialized equipment, and special services in obtaining higher education. Students of inclusive groups of higher education institutions pay attention to the need to expand opportunities for medical and psychological assistance in their higher education institutions, improve living conditions in the dormitory, catering, conditions for a healthy lifestyle, leisure activities, specialized equipment, furniture, technical equipment used in the educational process. There are slight differences in the assessment of conditions and components of the educational process and extra-curricular activities between the students with disabilities and healthy students. It is due to the mood and motivation of both. Among students with disabilities, there are relatively more of those who positively assess the opportunities for medical and psychological assistance, the conditions for a healthy lifestyle in a higher educational institution.

The number of healthy students is relatively higher among those who positively evaluate the work of the dean's office, the student council and the warden council, leisure and recreation facilities, and extra-curricular activities. Every fourth student with disabilities does not want to be involved in extra-curricular activities, while among healthy students, it is every fifth. Students of inclusive groups of higher education institutions in the Sverdlovsk, Chelyabinsk, and Kurgan regions are mainly positive about the implementation of their educational needs. The overwhelming majority of students of inclusive groups of higher education institutions are generally satisfied with their student life, with the moral and psychological climate in their group, and most of them positively assess the conditions and components of the educational process. Compared to healthy students, the number of students with disabilities who feel alone, do not take part in some tasks, feel unprotected in higher educational institutions, and generally dissatisfied with student life is relatively less. It is quite evident that student youths are adapting to the modern educational process in Russian universities, which is carried out in accordance with the requirements of the Federal Law "On Education in the Russian Federation," which also applies to inclusive education. Monitoring results show that inclusive education is carried out with some challenges and contradictions. The creation and operation of a network of resource training and methodological centers for the education of persons with disabilities studying in higher education organizations of the Russian Federation would help to identify and address the issues mentioned above. Monitoring of the state of inclusive education, as well as the social and psychological well-being of students of inclusive groups of higher education institutions also contribute to solving problems. We believe that the continuation of such activities at all levels of management and monitoring of its fundamental problems will contribute to the integration of young people with disabilities into modern Russian society and the implementation of their constitutional rights to education, work, and a decent life.

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INTERORGANIZATIONAL NETWORKS AS A TOOL MODERNIZATION OF THE REGION'S ECONOMY IN CONDITIONS FOURTH INDUSTRIAL REVOLUTION

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ABSTRACT
The article discusses the theoretical and practical aspects of the innovative development of Russia. Statistical data on innovation activity in Russia, in the federal districts are presented, and the main factors hindering innovation activity are identified. The emphasis is placed on the need to study and develop in Russia organizational, as well as organizational and managerial innovations, which include network structures.
Keywords: *fourth industrial revolution, network structures, organizational innovation*

1. INTRODUCTION

Considering the prospects for economic development, experts note the need to adapt to the requirements of the fourth industrial revolution from the standpoint of consumer expectations, improve products and goods, joint innovations and new organizational forms. Since 2011 Russia implements the Strategy for Innovative Development of the Country until 2020, aimed at the formation of competencies of innovation, the formation of an effective science, innovation infrastructure, the development of innovative business and the development of innovation territories. In the light of these measures, they are of particular interest from the theoretical and practical point of view to industrial and technological innovations, but they take into account the importance of implementing organizational and managerial innovations much less. At the same time, without organizing and managing the introduction of innovations, the latter cannot work as efficiently as possible. The issue of introducing organizational and managerial innovations is especially acute for integrated economic structures. So, according to A.I. Tulikova, modern conditions give rise to the desire of subjects of economic activity not only to innovative processes, but also to integration for the purpose of innovative development. In turn, new forms of integration contribute to the development of the national innovation system.

2. THEORETICAL BACKGROUND

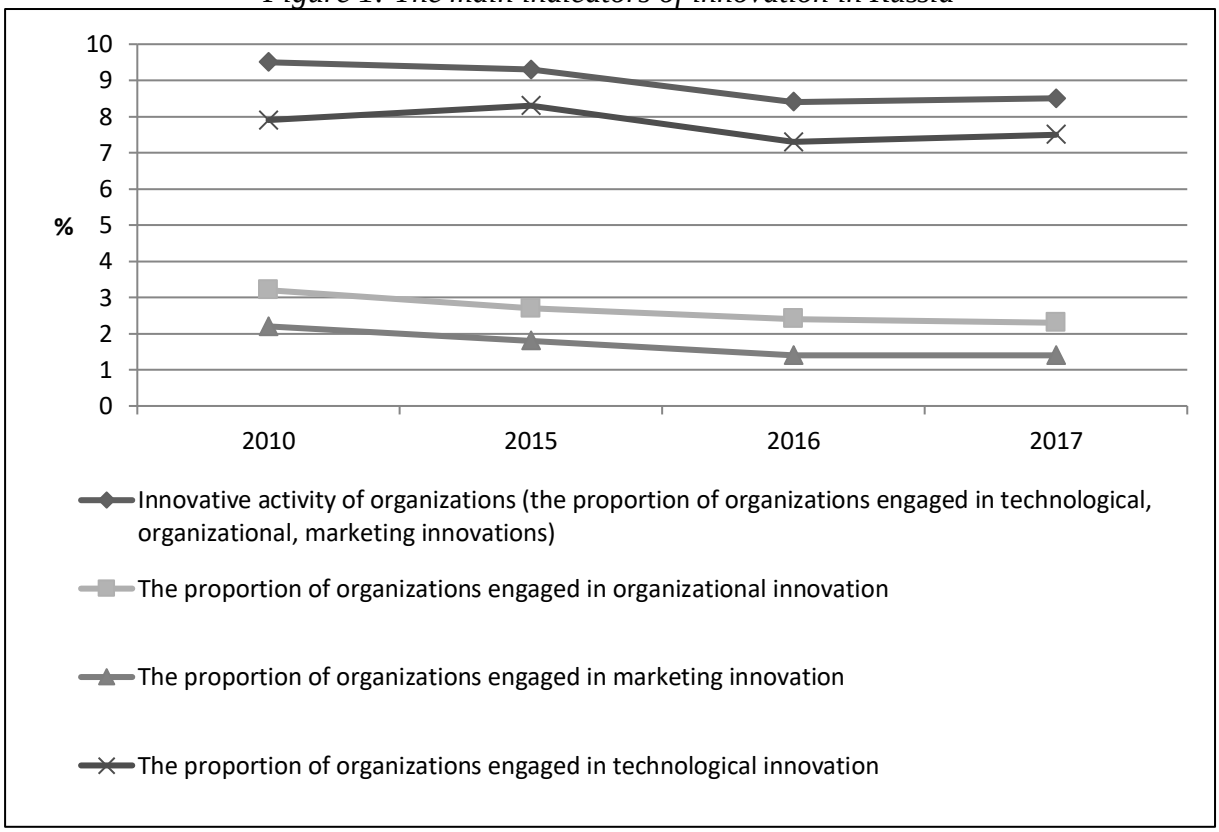
According to the methodology for assessing innovation activity by the Federal State Statistics Service, organizational innovation refers to the use of new methods of doing business, organizing jobs or organizing external relations. Organizational innovations increase the efficiency of the business entity, as it reduces administrative and transaction costs, increases staff satisfaction, labor productivity, limited assets on the market become available, and the cost of supplies decreases. Another feature of organizational innovation is that it is very difficult to evaluate their effectiveness by traditional methods, since the impact on performance is indirect. At the same time, the assessment of indirect effects is a complex and time-consuming process, often with inaccuracies [12].

Organizational innovations are also specific from the point of view of protecting intellectual property, since these measures are very difficult to implement in relation to ideas, decisions and other results of creative activity [12]. For this reason, organizational innovation is easier to implement than technological innovation. At the same time, the relative ease of implementation and the availability of rich foreign experience in implementing organizational innovations do not produce tangible changes in the economy of the country or individual regions. This can be judged by the main indicators of innovation in Russia.

3. KEY INDICATORS OF INNOVATION IN RUSSIA

The main indicators of innovation in Russia are presented in Figure 1.

Figure 1: The main indicators of innovation in Russia



Source: https://www.gks.ru/folder/14477

Since 2010 to 2017 the proportion of domestic organizations engaged in technological, organizational, marketing innovations does not exceed 10% and decreased from 9.5% in 2010 up to 8.5% in 2017. Factors hindering innovation:

- economic factors (lack of own funds, lack of financial support from the state, low demand for new goods, work, services, high cost of innovation, high economic risk);
- internal factors (low innovative potential, lack of qualified personnel, lack of information on new technologies, lack of information on sales markets, underdeveloped cooperative ties);
- other factors (insufficiency of legislative and regulatory legal documents regulating and stimulating innovative activity, underdevelopment of innovative infrastructure, uncertainty of economic benefits from the use of intellectual property) [9].

In the context of federal districts, indicators of innovation activity are presented in table 1.

Table 1: Innovative activity of organizations in the federal districts, %

	2010		2015		2016		2017	
	Total	of which technological innovation	Total	of which technological innovation	Total	of which technological innovation	Total	of which technological innovation
Russian Federation	**9,5**	**7,9**	**9,3**	**8,3**	**8,4**	**7,3**	**8,5**	**7,5**
Central Federal District	8,6	7,3	10,9	9,8	10,3	9,0	9,9	8,6
Northwestern Federal district	9,4	7,6	9,6	8,1	8,3	7,1	8,6	7,6
Southern Federal District	7,5	6,2	7,6	6,7	7,1	6,2	8,4	7,5
North Caucasus Federal District	6,2	5,0	4,7	4,4	2,9	2,6	3,2	2,9
Volga Federal District	12,3	10,2	10,6	9,5	9,4	8,4	9,1	8,1
Ural federal district	11,5	9,6	7,9	6,7	8,2	6,5	8,2	7,3
Siberian Federal District	8,2	6,8	8,0	7,2	6,9	6,0	7,3	6,5
Far Eastern Federal District	8,6	7,0	7,2	6,5	6,4	5,7	6,4	5,5

Source: https://www.gks.ru/folder/14477

The innovative activity of organizations as a whole is higher than the national average in the Central Federal District (9.9% in 2017) and the Volga Federal District (9.1% in 2017). The lower activity of organizations applying various innovations is observed in the North Caucasus Federal District (3.2% in 2017), the Far Eastern Federal District (6.4% in 2017), and the Siberian Federal District (7.3% in 2017). In such conditions, it is difficult to talk about the development of innovative activity in Russia, the formation of an innovative type of economy. Another feature of the development of business entities in Russia is orientation to technological innovations: in 2017. 7.5% of organizations carried out technological innovations, which significantly exceeds the share of organizations engaged in organizational innovation (2.3% in 2017) and marketing innovations (1.4% in 2017). Modern machines and equipment, software, automation tools are purchased, while organizational, marketing innovations are not considered as sources of increasing the efficiency of activities [17]. The exception is situations of crisis, when there is an objective need for the development of not only technological innovations. However, the reactive model of behavior of business entities in relation to organizational innovation is not acceptable in modern conditions. All subjects of economic activity at all levels need to realize that innovative development is possible with the simultaneous application of both technological and organizational innovations. At the same time, according to T.G. Bondar, it is necessary to distinguish such a type as organizational and managerial innovations, where organizational changes are the result of managerial innovations of a strategic nature [5]. Production and technical changes can be carried out by economic entities independently. However, organization and management within integrated structures require more modern mechanisms and tools [5]. The latter include the network approach to the organization and management of integrated structures.

4. INTERORGANIZATIONAL NETWORKS

The development of network interactions and relationships takes place in various forms. There are strategic alliances between state structures and business [1], between business, education and science [11]. They focus on the involvement of economic entities in public-private partnerships [3]. Network structures include an industrial zone or park, partnership, cluster, association, associative holdings, franchising agreements, long-term agreements, collective trademarks [7], intermodal logistics centers, transnational corporations and informal business associations that can carry out large projects in many industries [2]. The diversity of network structures is partly due to the presence of various integration goals: economic (implementing resource-intensive programs, managing the flow of goods, services, information, gaining access to innovations, etc.), social (family, ethnic, spiritual), social and class (desire to defend their interests, to influence socio-economic processes). The result of this integration is to obtain a number of positive network effects, both by network participants and the regional economy [10]. For economic entities, network relations have the following positive effects:

- savings on transaction costs, R&D costs, marketing research;
- increase the level of confidence in interorganizational relations;
- decrease in information asymmetry;
- synergistic effect;
- increasing the innovative potential of subjects and the possibility of implementing their mutual adaptation strategies;
- allow to overcome the shortcomings of the market and administrative mechanism;
- «free rider effect», in the framework of which information assets become available to all participants in the network, and, as a result, the emergence of organizational rents and external network effects;
- significantly reduce the time of development and development of mass production, as well as ensure the promotion of products on markets;
- low costs of control (security);
- access to resources controlled by other market participants.

Network interorganizational relations can also have positive effects for the regional economy: improving the efficiency of the use of the territory's resources, potential, including the innovative potential of the region, increasing the level and quality of life of the population of the territory where the network is located, optimizing the negative consequences of inter-regional competition. If we talk about the risks and factors that reduce the effectiveness of network relations in Russia, the following should be noted. Negative external network effects are the possibility of opportunistic behavior, the growth of transaction costs of leaving the network [13]. In the event of a network breakdown, the risk of information leakage and opportunistic behavior of its former participants increases [15]. Competition in the market and monopoly may increase [13; 15]. In the conditions of the economic crisis, the level of confidence in relationships may decrease, which negatively affects network structures [4; 6]. Research M.Yu. Sheresheva confirms the fact that network participants are not satisfied with the level of trust. However, they do not plan to break network interactions [20]. A risk factor is the overall goal of network interaction, as the individual goals of participants may partially contradict it. The contradictions between individual and collective goals can lead to low indicators of network efficiency in the short term [15]. However, an unstable network can become only if there is a significant discrepancy between the goals of its participants and the common network goal, and the network will break up if it is fundamentally impossible to balance the interests of network participants [20]. Interests and goals, strategies, corporate cultures of partners can contradict each other. This is inevitable with a combination of competition and cooperation, as well as in the early stages of the formation of network relations,

when it is necessary to reach consensus on strategic issues between all potential participants [4]. A risk factor may be the presence of several leadership centers [4]. In its pure form, network socio-economic relations are difficult to manage [14]. The consequences of the functioning of the network are relatively unpredictable [4], uncertain and can lead to non-standard situations [14], which makes the network structure unstable and fragile. The reason for the failure of network relations may be the impossibility of transferring by one of the participants competencies that are important for other participants [4]. Excessive network expansion can lead to reduced efficiency and slower decision-making. Dependence and limited actions of network participants are increasing, which can lead to a complete loss of independence [15]. This is especially evident in the focal network, when weak partners become more dependent on the central (focal) company. However, in polycentric networks, similar problems may arise. So, the desire to increase market power by one of the partners with a dominant position in the network can turn the polycentric network into a focal network with a pronounced leader [20]. The close ties and collective nature of power reduces management flexibility. At the same time, managers of network structures play a key role, which increases the risks associated with staff turnover [15]. In his work, M.A. Izmaylova [8] gives other factors within the framework of the ecology model of a population of organizations (Michael Hennan and John Freeman) that may become an obstacle to building a network. The author refers to them major investments in the enterprise and equipment, the level and nature of personnel training, lack of information, mentality and points of view of decision-makers, the history of the organization, the established ways of working, the difficulties of changing the corporate culture. Another source of risk is the participation of Russian elements in network structures owned by other states. On the one hand, this makes it possible to earn income, learn from the experience of other, successful participants, enter into cooperative relations and thus increase the efficiency of their activities. But the profit education center, as a rule, is located in the same place as the decision-making center, therefore all the «dividends», ultimately, are paid to other countries due to the Russian network elements [16].

5. CONCLUSION

So, considering the network structure as an organizational and managerial innovation, focused on adapting external relations with the environment in difficult socio-economic conditions, it should be noted that creating a network, you can get a number of positive effects. However, the process of creating and operating such structures in Russia is fraught with certain risks. For the effects of network relationships, special conditions are required:

- the establishment in the economy and society of network models of coordination of communications;
- improving the reliability of partners,
- an interconnected mechanism for increasing and distributing the integration effect,
- the transition from direct and directive methods of public administration of education and the development of network structures to indirect forms of support for self-organization trends.

In this regard, organizational and managerial innovations, as well as network relations, as a special case of the latter, should become an object of interest for federal and regional authorities. A deeper study of these aspects, in our opinion, will allow us to formulate the principles and mechanisms of the formation and development of network relations, which, in turn, will lead to the possibility of using the positive potential of network effects for self-development of the regional economy.

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THE IMPACT OF UNSUSTAINABLE EMPLOYMENT ON MIGRATION LABOR MOBILITY IN RUSSIA

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ABSTRACT

Under current conditions studying problems of precariatization or, in Russian authors' nomenclature, non-standard employment, has significant value in elucidation of economic dimension and regional dynamics transformation. This concept relates to the process of fundamental changes in people's living conditions towards uncertainty both in economic and social sense. Essence of unstable employment lies in broadening of involuntary socio-economic employment relations for the worker under conditions of urgent, civil law and other contracts, as well as informal employment in formal economy, hidden production, illegal activity and unemployment. Events of unstable employment and social precariatization happen within the scope of capitalistic globalization process that is noted all over the world. The article puts forward analysis of prerequisites for migration mobility of labor migrants that are mostly linked to heighten precariatization of their employment. Research methods that were used during writing this article are based on analysis, generalization and generalization of scientific literature on the issue of labor migration. Author conducted review of scientific works in this research sphere, marked out the most topical areas of studying labor mobility of labor migrants. Currently there are increasing inconsistencies of interests of labor subjects that are working on the labor market, as a result precariatization aggravates, labor force's mobility pursuit increases. During implementation of active state policy aimed at decreasing of unstable employment of labor migrants Russian citizens should feel that their employment is a priority for the state and employers. It is unallowable to solve migrants' problems by infringing local population interests.

Keywords: *labor market, labor force, manpower, migration policy, labor mobility, migration*

1. INTRODUCTION

Topicality of precariatization or unstable employment on the labor market study increases day by day. Notion "precariat" is formed from the Latin word "precarium" (unstable, unsteady, insecure) and word „proletariat" that used to stand for a class that was fenced off results of labor and was exploited in the interest of the ruling class - the bourgeoisie. Precariat is a principally new formation meaning a social class that represents fencing off not only labor results but from the society as a whole of significant social groups which undergo specific acute exploitation of their labor, knowledge that has influence over their quality of life [1]. According to G. Standing precariat consists of people that lack the seven forms of labor security: security of labor market; employment guarantee; labor guarantee; labor safety; qualification conversion; income security; security of opinion expression [2]. Problem of employment precarity became noted as a study subject of Russian scientists in the beginning of the second decade of XXI century [3; 4; 5; 6]. In foreign scientific literature discussion of issues related to unstable employment had begun earlier, in Western Europe – in 80s and 90s of the late century [7; 8, 9 et all.].

Beginning of Russian discussion on this global problem has almost conformed to development of the second stage of unstable employment transformation as a global event, that has begun in the second decade of XXI century. The most widespread features of unstable migrants' employment are:

- absence (expiration) of labor contract or enabling documentation for labor activity;
- groundlessly low payment, delays and neglect to pay wages, social security allowance;
- great (more than 12 hours per day) duration of working time, including neglect to pay for overtime work;
- failure of employers to pay tax payments and social fees;

Aim of this study is to analyze prerequisites for influence of unstable migrants' employment over labor mobility and mobility of labor force in Russia.

2. STATUS AND SCOPE OF UNSTABLE EMPLOYMENT IN RUSSIA

Official data that are provided by state bodies does not give reliable representation of the scope of migrants unstable employment in Russia. But we can try to estimate approximate number of this category on the basis of existing statistic data as well as sociological and expert estimates. Instability of employment among migrants in Russia mostly appears in shadow economy [10]. According to our estimates and results of expert poll among leading Russian scientists and public officers number of illegal labor migrants and "labor migrants with unsettles status" employed on the territory of the Russian Federation varies from 2 to 5 mln. people that is statistically proven by the fact of discrepancy between numbers of people arriving to Russia with the share of issued enabling documentation and notion on engaging and employment of foreign citizens. In 2016 4,3 mln. foreign citizens and persons without citizenship entered Russia stating work as an aim for entering. At the same time number of patents and working papers that were drawn for migrants was 1,66 mln. During 2017 4,85 mln. foreign citizens and persons without citizenship arrived to Russia with the aim of job placement. Number of patents and working papers that were drawn for migrants was 1,83 mln. that estimates only on 38% of number of foreigners who arrived to Russia with the aim of job placement. Similar dynamics is seen in the first half year of 2018. Thus, for 2,67 mln. foreign citizens and persons without citizenship who stated work as the aim of arrival de-facto there are 1,03 mln. approval documents [11]. Therefore more than 3 mln. foreign citizens and persons without citizenship are not officially employed in Russia. Moreover, number of illegally employed working force increases through number of migrants who own patents and working permissions but do not have a labor/commercial contracts. Number of these in 2017 estimated in more than 1 mln., which is proven by a low share of notions on engaging and employment of foreign citizens that estimates in a bit more than a half of the whole number of issued approval documents for the right to execute working activity. 55% of migrants, who initially became legalized on the labor market, had informal relations with their employers (both legal and natural entities). Of 850 hundred of citizen of EAEU who arrived with the aim "payroll job", more than 60% worked informally [12]. Taking into account illegal employment of foreign citizens that enter Russia with private (without a right to perform labor activity) aims (more than 2 mln. people per year), as well as migrants who infringed terms of staying in the country and continued to work, we get approximately up to 5 mln. labor migrants in shadow sector whose activity is characterized by a high level of precariatization. In this case beyond the scope of legal terrain most of foreign workers are in highly vulnerable position due to the absence of personal documents, approval documents, labor contracts. In shadow sectors there are seen numerous cases of neglect to pay or significant delay of payments or social security allowance, short or excessive length of working time, violation of labor protection rules, labor slavery, violence and aggression from the employer.

Detailed study among migrant workers in such large regions recipients of foreign workforce as Moscow and Moscow oblast (more than 40% of issued approval documents in 2018) found that less than half of the respondent migrant workers are within the scope of official direct labor contracts and almost one third of foreign workers are employed without an active labor contract or have an unofficial (shadow) contract. Significant share of respondent migrant workers expressed dissatisfaction with absence of social security such as paid sick lists (53,2%), yearly paid vacations (57,4%) as well as absence of employer's payments to state nonbudgetary funds 75,1%). Highly qualified and qualified specialists are characterized by high (93%) content with their employment and level of social protection provision in Russia. But their share does not exceed 2,5% of the whole amount of approval documentation issued in 2018. Therefore by approximate estimation number of unsteady employed foreign citizens in Russia varies in the range of 5,5-7 mln. people. In accordance with received notions on engaging and employment of foreign citizens as well as results of sociological and expert studies we state that the following types of economic activity are the main kinds of economic activity that are related instability of labor migrants employment in Russia: construction; daily goods manufacturing; public services; housing and public utilities; catering; manufacturing; wholesale and retail trade; vehicles repairs; agriculture and forestry.

3. PROSPECTS OF LABOR MIGRANTS UNSTABLE EMPLOYMENT DEVELOPMENT IN RUSSIA

Based on the tendencies of 2015-2018 in short-term perspective to 2021 Russia is expected to increase number of labor migrants by 300-500 thousand people per year. Main causes of intensifying external migration flows into Russian Federation will be significant migration gravity and non-visa regime with many CIS countries, high demand on hired labor among small and medium sized enterprises, relatively big wages [13]. Due to settled high birth rate tendency perspective of volume and intencivity of migration into Russian Federation from such states as Kazakhstan, Kirghizia, Uzbekistan, Tajikistan in mid-term (to 2024) increasing will continue and increase [14]. At the same time slowdown of socio-economic development, unstable situation on financial markets, reduction of wages and working places by employers, drop in income level of Russian citizens are in total factors that have negative impact over comparatively well-off part of migrants [15]. As a result of deteriorated financial situation some part of labor migrants will either leave for their countries of residence, or try to compensate loss of income by avoiding to pay advance payment for patents, or completely go "into shadow" [16]. While characterizing current situation and prospects of employment in Russia during the poll migrant workers' opinion divided, at the same time most of them feel insecure and unsure about future employment in case current working conditions will maintain.

Figure following on the next page

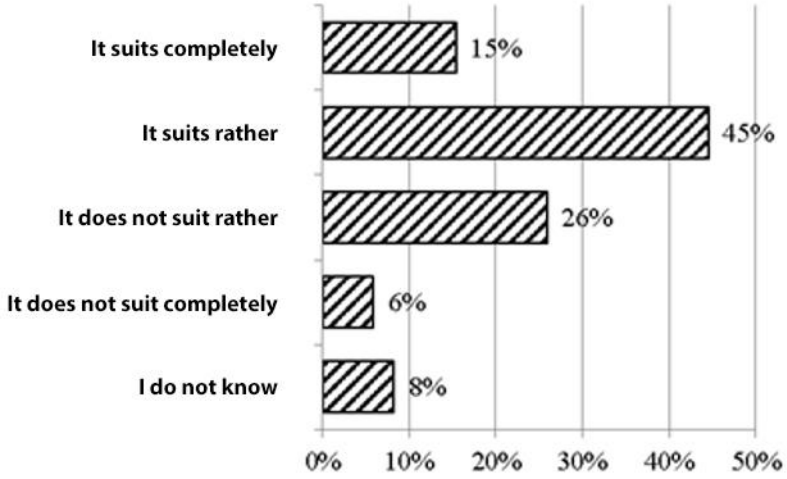

Figure 1: Analysis of respondents on the question "Are you satisfied with the nature of your employment in Russia?"

Under condition of maintaining current model of attracting foreign labor force that allows existing a significant part of unregistered migrant activity Russian labor market is threatened by deformation of its structure, labor relations degradation, widespread discrimination and exploitation of workers [17]. During the poll respondents were offered to mark their labor relations with employers (table 1).

Table 1: Labor relations of respondents with the employers (%)

№	Character of relations with the employers	%
1.	Permanent contract	21,8
2.	Fixed-term contract	54,3
3.	Spoken agreement on temporary work	9,2
4.	Spoken agreement on working for an unspecified time	8,8
5.	Other	5,9
	Total	100

During implementation of passive, inert scenario of migration processes development by 2021 along migrant workers share increase there will be an increase of scope of unstable employment up to 7-8 mln. people. Otherwise in case there will be a developed and implemented complex of state measures against migrant workers unstable employment in Russia, there will be conditions for migrants to leave shadow sector and to stimulate their legal employment and that by 2024 will lead to decrease in number of unstable employed migrant workers to 2-3 mln. people.

4. PRIORITY AREAS FOR DECREASING UNSTABLE EMPLOYMENT OF WORKING MIGRANTS IN RUSSIA

High significance of the unstable employment problem among labor migrants in Russia demands implementation of a number of priority areas. Within the scope of aforementioned vectors of decreasing labor migrants unstable employment in Russia the following complex of measures is necessary:

- simplifying the procedure of receiving documents for temporary and permanent residence in Russia;
- liberalization of migration control and way of receiving approval documents for the right to perform working activity;

- codification of legislative environment for migration processes within the scope of migration law codex;
- introducing progressive taxation scale for non-residents of the Russian Federation;
- signing a treaty within the EEU framework on pensionary provisions for migrant workers;
- transition to more flexible kinds of employment, including long-term contracts for 2 years with migrant workers with a possibility of prolongation;
- implementing quantitative restrictions for a number of foreign citizens that could be registered in a local migration registration body;
- adopting laws and regulations providing conditions for migrant workers adaptation to social conditions [18];
- developing on a legislative level a mechanism for carrying out mandatory payments with foreign workers via transferring wages to bank accounts opened in credit institutions of the Russian Federation;
- holding a onetime immigration amnesty in order to legalize working migrants with unsettled status and illegal immigrants;
- strengthening criminal sanctions for illegal crossing of the Russian Federation borders and breaching its laws;
- increasing number of examinations for employers that use labor of foreign workers regarding health and safety compliance, and also increasing size of penalties for breaching labor safety regulations;
- increasing size of penalties for using illegal workers labor;
- holding regular informational campaigns in media that explain conditions of legal enter, stay and employment in Russia;
- strengthening control over employers regarding their compliance with labor legislation;
- state's assistance in social adaptation of migrant workers and members of their families, including help with housing problem, placing children in pre-school and schooling institutes, informational-advisory support;
- enhancement of the role of diplomatic bodies, expatriate communities in solving issues of migration workers [19];
- activation of Russian trade unions in order to involve labor migrants as well as developing special trade unions in order to coordinate human rights actions between Russian trade unions and trade unions of working migrants home countries;
- simplifying migration procedures within the EEU framework;
- opening immigration functionary centers in regions recipients of foreign labor force;
- broadening list of digital services available for verified labor migrants based on state and municipal services platform;

It is necessary constantly to improve and amend Russian labor, taxation and civil legislation in order to protect labor and social rights of Russian and foreign workers. These changes should stipulate employers to create new workplaces and to sign official labor contracts with the workers under the condition of flexible types of employment objective extensive use. Aforementioned measures should assist working migrant leaving "shadow" of unofficial employment, payment of official salary and payments for mandatory social security [20]. At implementing active state policy aimed at decreasing unstable employment for working migrants, Russian citizens should feel priority concern of state and employers about their employment and rise in quality of life. It is inacceptable to solve issues of migrant workers by infringement of local population's interests.

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EMPLOYEES COMPETITIVENESS FACTORS: SYSTEM-MATHIZATION OF APPROACHES

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ABSTRACT

The concept of employee competitiveness has a number of contradictions. This is due to the peculiarities of the functioning of the labor market, in which achieving a sustainable balance of interests of all market players is almost impossible. Employees learn, develop skills, acquire or change a profession in order to find a more suitable job, employers strive to minimize personnel costs, get the most out of employees. The state invests in training in areas where there is a shortage of specialists, often caused by low wages. This situation is occurring in an ever-changing and unpredictable environment. They increase likelihood of errors in this area and deepening the imbalance in the labor market. The article provides the overview of key research published in the Russian scientific literature, analyzes approaches to the study of the factors of employees' competitiveness, systematizes them, and highlights common features. The refined characteristics factors of employees' competitiveness is offered. It is based on the relationship with determinants of the quality of labor force. The proposed classification is universal and allows you to explore the ability to manage competitiveness at the state (region), enterprise, individual level. It is also supplemented by the division of factors into constructive and destructive according to the principle of influence on the resolution of contradictions in the field of employee competitiveness. All this can help employees to form personal competitiveness, and enterprises can invest more effectively in staff training. At the state and regional level, they can be used to improve programs to promote employment and reduce unemployment.

Keywords: *employee competitiveness, employee competitiveness factors, labor quality*

1. INTRODUCTION

The competitiveness of workers in the labor market in modern, rapidly changing conditions is an urgent task not only for the state or for the enterprise, but also for the employee. At the state level, the primary task is to provide the economy with highly qualified personnel and reduce unemployment, increase employment efficiency, which can be solved by ensuring the competitiveness of workers. For the enterprise, a high level of quality characteristics of personnel is important, which will correspond to the quality of workplaces and being one of the key resources will allow the organization to be competitive in the market. It is also obvious to the employee that a high level of competitiveness will allow him to get and / or keep a job that best meets his capabilities, needs and desires, that is, to ensure a certain level of personal economic security and social stability. An important point is that competitiveness is a complex characteristic of an employee that combines all the qualitative characteristics of the workforce and manifests itself in interconnection with the external environment. It is a dynamic characteristic and changes with the environment, requiring the employee to be more advanced and adaptive. Its provision implies advancing actions of subjects to manage the competitiveness of the employee, forecasting the requirements of the external environment. Thus, the problem lies in the fact that, on the one hand, constantly changing conditions and a dynamic labor market

require high competitiveness of employees for the efficient functioning of the economy, the enterprise, on the other hand, the factors that determine it are not well understood, which makes it difficult to manage this process. Taking all this into account, the purpose of this article is to study the factors of employees' competitiveness and systematization of existing approaches. To achieve this goal, the following tasks were determined:

- define and clarify the essence of the category of competitiveness for workers in the labor market, describe its features and characteristics;
- to determine the factors of employee competitiveness and consider existing approaches, determine their advantages and disadvantages'
- show the ratio between the determinants of the qualitative characteristics of the workforce and the factors of competitiveness, to identify under what conditions they become like that;
- to offer our own version of the classification of the competitiveness factors of employees, which allows us to correspond not only to the current market situation, but also to possible changes in the future.

2. THE CONCEPT OF COMPETITIVENESS OF THE EMPLOYEE IN THE LABOR MARKET

Competitiveness in its most general form is the ability of an object to withstand competition in the market. Therefore, speaking about the competitiveness of the worker, we will give a definition to the labor market. "The labor market is a system of socio-economic relations arising between employers that generate demand for labor and employees who offer their labor services." (Bazzhina, 2019) B. Korneichuk (Korneichuk, 2019) notes that in the labor market there is actually "an exchange of benefits between the employee and the employer: the labor service is exchanged for cash wages" and that this market transaction has a number of features, in including this: "The content of labor is not known in every detail at the time of hiring the employee. The higher the proportion of creative functions in the labor process, the greater the uncertainty regarding the content of future labor. In the case of simple labor (loader, stacker, etc.), the content of labor is actually determined. The problem of the uncertainty of the content of future labor is usually eliminated by analyzing the personal qualities of the applicant for the workplace. This feature distinguishes the labor market from other markets where the personal qualities of the seller do not play a significant role"(Korneichuk, 2019). Taking that into account we can make the point that that the basis of an employee's competitiveness is the qualitative characteristics of his workforce. You should also distinguish between internal and external labor markets, since the model of the internal labor market differs significantly from the model of the external labor market, which accordingly affects the competitiveness of the employee. "The external labor market is a combination of workers offering their labor and firms (employers) presenting demand for labor. After the applicant is hired, his labor supply becomes equal to zero, and he ceases to exert any influence on the external labor market. Similarly, after a firm satisfies its demand for labor (hires the necessary number of workers), it actually leaves the external labor market. The internal labor market is a collection of workers of a particular company offering their labor to it, as well as of this company itself, which is demanding the labor of its employees. The internal labor market is also called intra-company"(Korneichuk, 2019). Having review various opinions on that topic we can highlight the following features of competitiveness, which reveal its essence and allow you to take into account all aspects in its study.

1. competitiveness is a certain combination of qualitative characteristics of the workforce that give it an advantage in the fight against competitors for a vacant workplace (Milyaeva, 2002, Khokhlova, 2011, Galuzo, 2008)

2. degree of compliance with environmental requirements, or rank, or ability to withstand competition in the labor market (Milyaeva, 2002, Ozernikova, Danilenko, Kvartsevich, 2007)

Both of these approaches are very important, as they capture the two most important characteristics of competitiveness:

- the basis of employee competitiveness is a certain combination and level of development of the qualitative characteristics of the workforce
- competitiveness is a relative concept, it depends on the requirements of the external environment.

In its most general form, competitiveness is defined as "a combination of qualitative characteristics that meet the requirements of employers, representing a symbiosis of their subjective preferences and objective requirements of the production potential of these jobs" (Milyaeva, 2002), and also as "an integrated characteristic employee, determining his comparative position in the domestic and foreign labor market in relation to other workers "(Ozernikova, 2005). In our opinion, it is important to distinguish between competitiveness in the external and internal labor markets. Competitiveness in the external labor market depends entirely on environmental factors and the aggregate requirements of the employer. According to L.G. Milyaeva, one of the key moments that form the essential aspect of the concept of "competitiveness" is the fact that "competitiveness is a relative concept that requires mandatory clarification, that is, specification of a segment of the labor market or an intra-company employment model, whose jobs are subject to competition" (Milyaeva, 2002). Competitiveness in the domestic labor market depends on the requirements of a particular employer. The fundamental difference is that in the domestic labor market the employee has already formed the opinion about themselves, the results of theri work are known and they suit the employer, and here not only on the qualitative characteristics of his workforce are observed, but individual achievements in work as well. "The internal corporate competitiveness of an employee is ensured by the combination of his professional and personal qualities, thanks to which he provides the necessary results in his work" (Galuso, 2008) "An employee's competitiveness is the ability to achieve individual achievements in work, representing a contribution to the achievement of organizational goals" (Sotnikova, 2014). It is important to understand that an employee can be competitive in the external labor market and not competitive in the domestic one and vice versa. This is due to the fact that the subjective requirements of an individual employer may or may not coincide with the requirements on the labor market for this category of workers. Also, the features of the category "employee competitiveness" is that this category is dynamic, relative, subjective and evaluative. Thus, we will consider competitiveness as a certain degree of development of the qualitative characteristics of its workforce, providing it with the ability to withstand competition in the labor market.

3. FACTORS INFLUENCING THE COMPETITIVENESS OF THE EMPLOYEE IN THE LABOR MARKET: CONCEPT AND APPROACHES TO RESEARCH

In general terms, a factor (from Latin 'faktor' - making, producing) is a cause, the driving force of a phenomenon, a process, determining its nature or its individual features. By the factors that influence the employee's competitiveness, we understand the reasons, conditions and circumstances under the influence of which there is a restructuring of the employee's qualitative characteristics, determining his ability to withstand competition, meet the requirements of employers and achieve high results in the labor process. Researchers still haven't determined unianimously the composition, classification and content of employee competitiveness factors, as well as the minimum necessary and sufficient set of factors at each level (state, enterprise,

individual) to manage competitiveness. This is due to the relativity of the category itself and, as a consequence, to the variety of interpretations of this concept. The choice of a grouping characteristic and the composition of factors are based on research tasks. Multicomponent groupings are mainly used (for example, Ozernikova, Danilenko, Kravtsevich, 2007). Thus, Galuzo E.A. (Galuzo, 2008) notes that the competitiveness of an employee in the external labor market is associated with the following characteristics of the labor market:

- offer on the labor market - with the number of candidates for the position, their professional and personal qualities and conditions of the offer,
- demand in the labor market - with the number of required employees for a position with the necessary professional and personal qualities, as well as with terms of employment,
- assessments and decisions of the employer - with the assessment technologies used by the employer in the selection, selection and employment.

It is also noted that the competitiveness of a person is affected by both economic (the size of wages, surcharges and allowances, bonuses) and non-economic factors (a certain social package, the mode of work and rest) (Galuso, 2008). Ozernikova, T.G., Danilenko, N.N., Kravtsevich, S.V. give an interconnected system of factors that are classified according to the following criteria: by content, by level of formation, and by the method of occurrence (Ozernikova, Danilenko, Kravtsevich, 2007). So, according to the level of formation, they are divided into internal and external. The internal ones by the mode of occurrence include: institutional (at the level of society); corporate (at the enterprise level), and in content: technological, economic, political and social. Internal factors are classified according to the level of formation (congenital and acquired), and by the method of occurrence - professionally-qualifying, personal, demographic, motivational. Khokhlova I.I. (Khokhlova, 2011) offers an interconnected system, highlighting factors according to the level of formation (external, internal), the level of manifestation and content (macro level (state) (economic, social, legal, market), micro level (enterprise) (relations in collective, wages, working conditions, etc.), self-level (employee) (psychophysiological, personal, vocational qualifications)). Pylaev I.N. (Pylaev, 2015) generally supports the approach proposed above, proposes to consider and include factors from the standpoint of controllability in the classification. A similar approach is presented in a study examining the influence of globalization factors on the competitiveness of workers (Ovchinnikova, Arzybova, Kobelev, Eremina, 2014). There, the following are proposed as competitive factors:

- the external labor market (state, region) I and II levels (economic freedom of the population, the development of society, competition, etc.);
- domestic labor market level III (working conditions, corporate policy, staff development strategy, etc.);
- the employee's personality IV level (desire, education and knowledge, health, etc.).

Sidnina V.V. (Sindina, 2011) considers mainly external factors, paying attention to the fact that they can act as a limitation on the competitiveness of the organization’s employees. In general, the common features of the approaches presented in the literature are that almost all the scholars consider and highlight the factors of employee competitiveness in accordance with the levels of the economy: macro level (state, region), micro level (enterprise), individual level. At the individual level, almost all authors include groups of qualitative characteristics of the workforce as competitive factors. In addition, the content of the list of factors is based on the author's logical and analytical conclusions without any justification. Also, the proposed classifications of factors are implemented from the perspective of a systematic approach, which is the main one, but, on the other hand, the relativity of the competitiveness category requires consideration from the perspective of a reproductive and situational approach.

Thus, a generalized grouping of employees' competitiveness factors has developed, using several signs of the grouping: the method of occurrence, source, level, content, etc. However, the question remains unresolved about the choice of the necessary and sufficient set of factors to manage competitiveness.

4. RELATIONSHIP OF FACTORS OF COMPETITIVENESS OF THE EMPLOYEE AND DETERMINANT OF QUALITATIVE CHARACTERISTICS OF ITS WORKFUL

The competitiveness of the employee is based on the qualitative characteristics of his workforce, or rather, their specific level, which allows you to compete and win the competition. Therefore, the determinants affecting the qualitative characteristics of the labor force will also be factors determining the level of its competitiveness. The employee's competitiveness is relative and subjective, situational and depends on the requirements of employers. However, there are general, basic, universal qualitative characteristics of the workforce that will determine the level of competitiveness of the employee, his adaptability. The determinants that influence the change in the system of qualitative characteristics of the labor force (the determinants of the qualitative characteristics of the labor force) are understood as the causes, conditions, and circumstances under the influence of which there is a restructuring of its internal structure, expressed in a change in the content and ratio of its elements (Maslennikova, 2003). Let us consider the classification of the determinants of labor force qualitative characteristics, which is based on taking into account the differences between the qualitative characteristics of the labor force as a system of relations with external conditions and factors and as an internal ratio of elements. As a result, external and internal determinants are identified (see table 1). The set of external determinants was divided into three groups, based on the direction of their action in relation to the qualitative characteristics of the workforce, namely:

- determinants of direct action that directly affect the change in the quality characteristics of the workforce;
- determinants of indirect action, affecting the change in the qualitative characteristics of the labor force indirectly;
- the conditions under which the determinants act, determining the strength of their action and focus.

level	Groups of factors	Factors
State level	Macroeconomic conditions	Political, socio-economical and technical conditions
	Indirect external factors	Possibility to get education, demand, supply and labor force price (salary)
Enterprise level	Direct external factors	- interesting work (content of work, a high level of labor organization, job satisfaction); - safe and healthy working conditions; - the presence and condition of the training system at the enterprise; - Opportunities for professional growth and advanced training; - the level of remuneration; - job security and the status of the social partnership system
Individual level	Internal factors	-qualitative characteristics of the workforce: motivational, vocational qualification, biomedical, intellectual -internal contradictions between the elements of the qualitative characteristics of the workforce

Table 1: Classification of employee competitiveness factors (compiled by the authors of the article)

Under the internal determinants (sources of change and development) of the qualitative characteristics of the labor force, one should understand the whole totality of internal contradictions between their individual groups. This includes the contradictions between the motivational sphere and the professionally-qualifying characteristics, professionally-qualifying characteristics, the motivational sphere and the basic characteristics. Studies of competitiveness factors have shown that it is impossible to develop an exhaustive list that will meet the needs of all employers, since success criteria and critical success factors in the labor market can significantly differ from the situation, from the specifics of the labor market, etc. Given that competitiveness is a multifaceted phenomenon, a broader approach to the classification of factors determining it will be required, namely from the standpoint of the relationship with the qualitative characteristics of the workforce. The proposed classification allows us to combine the above approaches, to make the grouping of factors more justified and, due to this, more complete.

5. CLASSIFICATION OF FACTORS OF COMPETITIVENESS ON THE BASIS OF CONTRADICTION OF INTERESTS OF SUBJECTS

If we consider the process of increasing the competitiveness of an employee from the perspective of the interests of subjects, one can observe their coincidence, divergence or contradiction of interests. Interest is the subject of interest, desires and incentives for the actions of economic entities. (Reisberg, 1999). The main interests of the subjects in the field of ensuring the competitiveness of the employee are presented in table 2. Each entity has its own interests in relation to other entities and carries out actions corresponding to these interests. Layering on each other, the interests of the subjects can form “zones of coincidence” and “zones of divergence”. “Zones of discrepancy” can be considered as sources of contradictions, to mitigate or resolve which “zones of coincidence” can be used. Also, an employee, analyzing the “zones of coincidence” of the interests of the state and the enterprise, can use this to increase his own competitiveness, build an individual trajectory of professional development.

Spheres of interest	Individual	Enterprise	State
Economical sphere	minimize training costs, receive high salaries, have employment guarantees	get highly skilled workers at the lowest cost	minimize the cost of training workers in strategic areas of the economy
Social sphere	to satisfy their needs and the needs of their sumy for different benefits through a well-paid job	to provide a standard of living sufficient for their retention and effective work and social guarantees for their employees	high standard of living
Spiritual sphere	labor as a means of self-realization and as a means of obtaining wealth	loyalty and commitment to this organization through work in it	labor as a value for the whole society

Table 2: Interests of subjects in the field of ensuring the competitiveness of the employee (compiled by the authors of the article)

At the state level, the interest lies in balancing the labor market, minimizing unemployment, and also providing training of highly qualified personnel for strategically important sectors of the economy. This may contradict both individual and collective interests. Thus, some enterprises may not be included in strategically important sectors, which means that the state

minimizes its participation in the training of personnel for these sectors, so organizations will need to invest their funds. Also, if there is an overabundance of specialists of a certain profile on the labor market, the state will also reduce funding for their training, which may contradict the interests of individuals who wish to receive such professions. It is important for the enterprise to attract highly qualified personnel, to retain them in the organization, to train according to the specific needs of the enterprise. This may conflict with the interests of the individual, as it may not meet his needs and desires. In addition, the interest of the enterprise is to retain highly qualified personnel in the organization, and the growth of their competitiveness may lead to their dismissal or to increase their value for the organization. The "zone of coincidence" of interests is that the enterprise, the state and the individual are interested in increasing the competitiveness of workers, which consists in improving the quality characteristics of workers in demand on the labor market. Thus, for example, if an individual wants to improve his professional qualifications in a profession that is in demand on the labor market, then interests of the individual, enterprise and state will overlap. Factors can exacerbate or resolve contradictions. Based on the presented contradictions, it is possible to systematize the employee competitiveness factors, dividing them into constructive and destructive:

- constructive factors are those that will work to eliminate them,
- destructive, which have a negative effect and contribute to the exacerbation of contradictions.

A feature of the proposed classification is that, at certain values, any factors can contribute to the resolution of conflicts of interest or exacerbate them. So, for example, such an external factor as the level of wages in the labor market with a low value can intensify the contradiction between the interests of the state and enterprises in a certain number of employees of one professional group and the individual interests of people to master such a profession and work in it. The largest contradictions can arise in one sphere between different levels, as well as between different spheres. Thus, interests in social, spiritual and economic spheres, as well as an individual, collective and public interests, may come into conflict. Inconsistency of interests implies a constant search and updating of the mechanism of coordination of interests, a compromise resolution of conflicts that arise in order to ensure high competitiveness of employees. Thus, factors affecting competitiveness must be considered from the point of view of their destructive or constructive actions, aggravating or resolving conflicts of interests of subjects. Also, subjects of employee competitiveness management can also evaluate their actions from this position. So, for example, state policy should be built in such a way as to harmonize as much as possible all kinds of interests. However, this is a rather complicated task, the solution of which involves government intervention in the economic and social life of society, and pursuing an active policy in this area.

6. CONCLUSION

Thus, employee competitiveness is a complex and dynamic category. Therefore, the classification of competitiveness factors is also a rather difficult task. The article analyzed the key works in this area, their characteristics are given. To clarify the classification of employee competitiveness factors, the latter was used to correlate with the qualitative characteristics of the workforce. This allowed us to identify four groups of factors and clarify their content. The article also considers the interests of subjects of competitiveness management and notes that they may conflict. This means that each of the proposed factors must be considered as constructive or destructive, contributing to the resolution of contradictions between subjects or aggravating them. This gives ample opportunity for correction and coordination of actions of subjects in the field of employee competitiveness management.

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MEMORIAL TOURISM IN THE CITY OF VUKOVAR

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ABSTRACT

As one of the more specific forms of tourism during the recent years is the appearance of the attractive dark tourism. Dark tourism includes tours of places of torment and death, places of crime activities and also the places where genocide has occurred. The most famous destinations of this type of tourism are: Chernobyl, Auschwitz, the streets of Belfast, Cambodian death fields, Ground Zero, the ruins of the New Orleans after Hurricane Katrina and Budapest Museum of Terror. Memorial tourism constitutes part of a dark tourism and the main motives of its influence are education, remembrance and encouraging curiosity with respect to the past historical events. Because of the suffering in the Croatian War of Independence, the City of Vukovar has memorial sites that have contributed to the whole - The Vukovar Nocturne (Vukovar Hospital, Memorial Centre Ovčara, Ovčara mass gravesite, Memorial Cemetery of the casualties of the Croatian War of Independence, Memorial Centre of the Croatian War of Independence, Memorial House of Croatian defenders on Trpinjska road, Central Cross at the mouth of the river Vuka in the river Danube). The goal of this paper is to determine the tourist offer and demand for the Memorial tourism in the City of Vukovar and also the guidelines for its further development are also suggested.

Keywords: *Memorial tourism, Dark tourism, City of Vukovar, The Vukovar Nocturne, Tourism market*

1. INTRODUCTION

The City of Vukovar is located in the northeast region of the territory of the Republic of Croatia and is the administrative centre of the Vukovar-Srijem County. According to the latest 2011 Census, the City of Vukovar had a population of 27 683 inhabitants (Central Bureau of Statistics, 2019). In 1991, during the Homeland War of Independence, the City of Vukovar was demolished and burnt to the ground during the aggression against Vukovar with numerous human casualties and material damage, after resisting a large military force for almost three months. After the fall of Vukovar, the city was under Serbian siege. In the course of 1998 the town of Vukovar was peacefully reintegrated into the territory of the Republic of Croatia and since had become a symbol of Croatian freedom. Since then, much has been done to rebuild the city and to return the population. Dark tourism is one of the specific forms of tourism in which tourists visit places where the casualties happened, wars, natural and other disasters, crimes and genocides. There are numerous examples of dark tourism in the world: Chernobyl, Auschwitz, Belfast streets, Cambodian death fields, Ground Zero, the ruins of New Orleans after the Hurricane Katrina, Phu Hai prison in Vietnam, the Budapest Museum of Terror etc. One form of dark tourism comprises memorial tourism. Memorial tourism has been constantly evolving in the City of Vukovar, and there are numerous sites of remembrance for the war victims that are visited by tourists and elementary school pupils as part of the project Visiting eighth grade pupils to Vukovar for them to perceive the victims of Vukovar and to learn about the not so long Croatian history and of the creation of the Croatian state. The memorial sites in the town of Vukovar are: Vukovar Memorial Cemetery, Ovčara Memorial Centre, Vukovar Hospital 1991 - a place of remembrance, the Memorial Centre of Croatian War Veterans on Trpinjska Road, the Homeland War Memorial Centre and the Central Cross at the mouth of the Vuka River’s confluence into the Danube.

In the paper is given an overview of memorial sites in the city of Vukovar, analysis of the tourist market and SWOT analysis of the memorial tourism development.

2. THE MEANING OF DARK TOURISM

Dark tourism (black tourism, grief tourism, morbid tourism, disaster tourism) is a specific form of tourism that involves a tourist trip to a place associated with death, natural and social disasters, i.e. with suffering and tragedy. The offer of dark tourism is based on (Stone, 2010): visits to dark exhibitions, prisons and dungeons, cemeteries, places where great conflicts took place, concentration camps and dark thematic parks. Dark tourism is identified with events that have taken place in recent history and with it encourage tourists to re-examine the phenomena of the modern age in a historical context (Lennon, Foley, 2002). Dark tourism is another example of actively pursuing a tourist trip where tourists learn about the past of the destination and the way of life led in it. Places of dark tourism are associated with memory and education (Foley and Lennon, 1997). A war places probably represents the World's greatest and most recognized individual category of tourist attractions (Smith, 1998). Dark tourism literature indicates a more recent form of tourism travel that has become popular during the mid-1990s (Kang et al., 2010). Why do tourists visit places related to violence? In line to various researches, some do so in order to connect with the history and the local community of the place, for the reason of empathy and memory, while others visit them for fun and excitement (Skelin Horvat, 2013). As one of the market-specific forms of tourism, dark tourism in many ways differs from the other forms of tourism. Among the key differences are the multidimensional motivations to visit sites and attractions that were marked by human tragedies, as well as the social sensitivity of resources that form the basis for its development (Kesar, Thomas, 2014). Dark tourism can have a difeferent effects; on tourist, on hosts and the local community. It may nagatively impact upon locals „in that it has the ability to glorify past tragedies…could also limit communities from moving on from disasters" (Best, 2007). Memorial tourism constitutes a part of dark tourism whose primary goal is education, empathy and travel to destinations with remembrance of victims of war and natural disasters. Memorial tourism can be divided into two segments:

- the one that is result of a suffering related to humans as a result of social conflicts
- the one that is related to human suffering as a result of a disaster.

Unlike dark tourism, which is represented in a broader sense of a framework, memorial tourism does not include locations such as places of suffering of an individual's, e.g. celebrities, places for morbid rituals for the religious purposes, obscure sites with mystical events for entertainment purposes, etc. (Kesar, Tomas, 2014). The most famous tourist products of memorial tourism are Auschwitz and Hiroshima. Auschwitz is visited by about one million tourists annually, mostly as part of a visit to Krakow, located 50 km away. In Hiroshima, there is a memorial park in memory of the victims of the atomic bomb, and since the opening of the park to date some 53 million people have visited Hiroshima (www.visithiroshima.net, 2019).

3. VUKOVAR MEMORIAL SITES

Under the title Vukovar Nocturne are integrated the memorial sites as a result of a Homeland War for Independence: The place of remembrance - Vukovar Hospital 1991, Ovčara Memorial Centre, Memorial Ovčara Mass Grave, Vukovar Memorial Cemetery of Homeland War Victims, Memorial Centre of Homeland War, The Memorial Centre of Croatian War Veterans on Trpinjska road and Central Cross at the mouth of the Vuka's confluence to the Danube. In the basement of the Vukovar hospital, the lives of several hundred wounded individuals and hospital staff were reconstructed as it had been during the occupation of the city. For the permanent exhibition a plaster cast of people was used as well as multimedia account of the

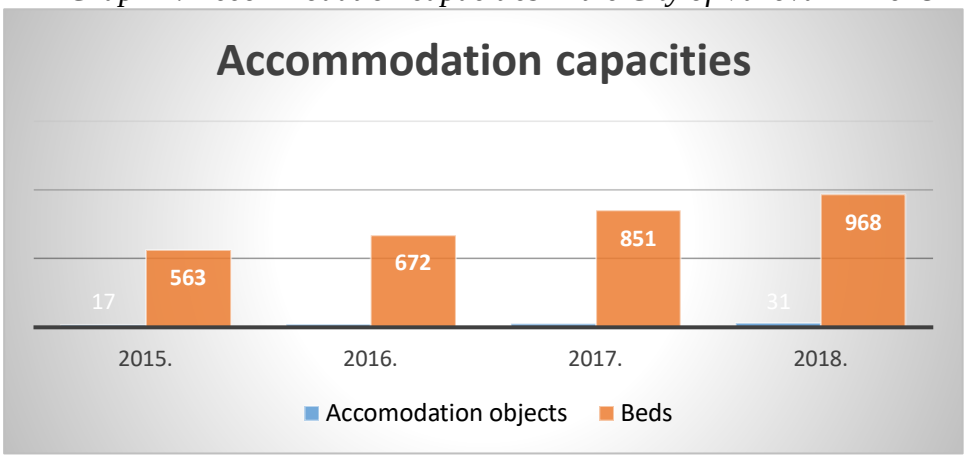
events. The Ovčara Memorial Centre is the site of casualties of civilians and the wounded during the Homeland War for Independence, and the hangar where the crimes took place has been transformed into a modern memorial centre. Pictures of the killed and missing from the Vukovar's tomb are placed on the walls, and in front of the photos are their personal belongings that were found in mass graves. Vukovar Memorial Cemetery of Homeland War Victims is the largest mass grave in Europe since World War II, and is located on the eastern approach to Vukovar. On the cemetery there are placed 938 white crosses, where each symbolizes one victim. The Memorial Centre of Homeland War take care about keeping the memory of the War, the preservation of memorial sites and educating students and pupils about importance of the war history: it also organizes individual visits, and here it's possible to see a variety of exhibitions, simulate battlefield conditions and outdoors exhibits. On 12 video screens on the walls of the Memorial Centre of Croatian War Veterans on Trpinjska road, war photographs and videos of early war events can be seen and war reports can be heard, as well as information on each individual brigade member killed. In front of the memorial is placed a tank as a sign of the force that was crushed by the brave defenders, and a bust of Major General Blago Zadro who is held as a hero of the Homeland War for Independence. On the mouth of the Vuka river, there is a monument to all those who gave their lives for freedom and independence in the form of a cross - Central Cross at the mouth of the Vuka's confluence to Danube (Vukovar Tourist Board, 2019).

4. TOURIST MARKET OF THE CITY OF VUKOVAR

Although tourism is not traditionally the main activity of the City of Vukovar, here tourism has a future development perspective. It is also through the development of memorial tourism which endeavours to utilize memorial resources for tourism purposes. In the Strategic Guidelines for Tourism Development for the City of Vukovar for the period from 2016-2020 (Institute for Tourism, 2015) states that the City of Vukovar represents a place of special reverence for Croatian citizens, but also a place of special interest for many categories of tourists. The City of Vukovar has numerous natural and cultural-historical resources that, together with memorial sites, can create considerable tourism potential. Of particular importance is the Danube River, Vukovar water tower, Vučedol Culture Museum, Vukovar Municipal Museum, Baroque Town Centre, Eltz Castle, Adica Forest Park, The County of Srijem Palace, City old water tower, Church of St. Filip and Jakov, the Dubrava Forest, the Danube bicycle route, the birthplace of Lavoslav Ružička and many others. In the city of Vukovar various events and manifestation have taken place, such as: Vinkovo on Vučedol, Sky over Vukovar, Vukovar and Borovo settlement Remembrance Day, Vukovar puppets spring, Actor festival, Rowing marathon, Advent in Vukovar, Flower fair, Bonofest and many others. From Graph 1 it can be seen accommodation capacities in the City of Vukovar during the course of 2018.

Graph following on the next page

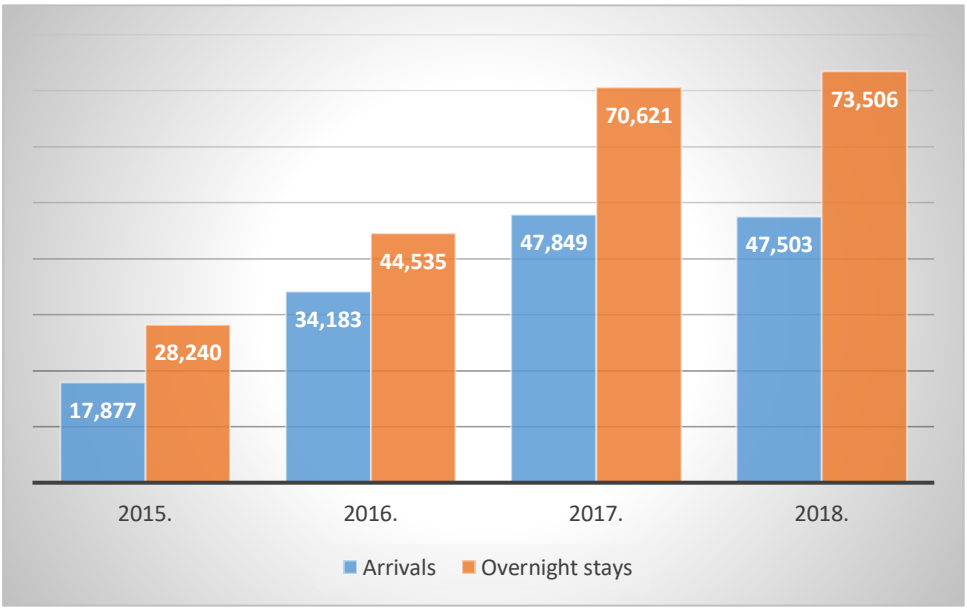
Graph 1: Accommodation capacities in the City of Vukovar in 2018



Source: Vukovar Tourist Board, Tourist office performance report, 2019

An increase in the number of accommodation capacities has been recorded; in 2018 there were registered 14 accommodations capacities more than in 2015, with available 405 beds. Vukovar holds one hotel and four hostels and the rests are private renters. In Graph 2 is shown the number of arrivals and overnight stays in the city of Vukovar from 2015-2018.

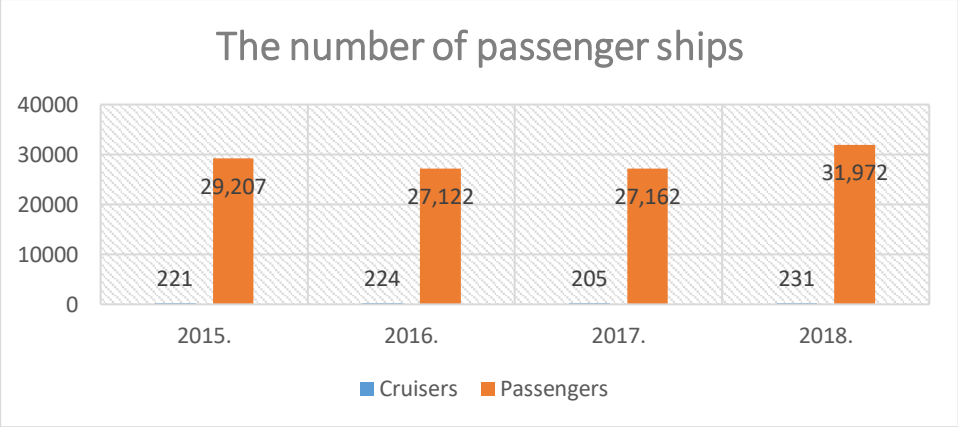
Graph 2: Number of tourist arrivals and overnight stays in the City of Vukovar from 2015-2018



Source: Vukovar Tourist Board, Tourist office performance report, 2019

In accordance to the above stated data, it is evident that the number of tourist arrivals and overnight stays is increasing, except for the 2018 when it was 0,72% less arrivals than in the previous year but 4,09 more overnight stays than in the previous year. In 2018, foreign tourists in Vukovar realized 3727 arrivals (13,42% more than in 2017), and made up to 8163 overnight stays (27,97% more than in 2017). The local guests made up in total of 43776 arrivals and 65343 overnight stays. In 2005, in Vukovar there were 7919 tourist arrivals and 12511 overnight stays, so data from previous years represented a significant increase in tourist demand. On Graph 3 is shown the number of passenger ships that docked in the City of Vukovar.

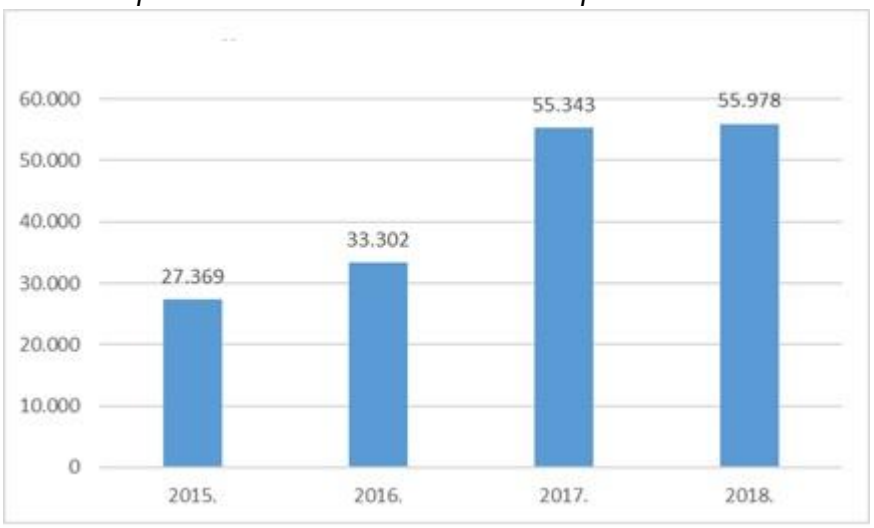
Graph 3: Number of passenger ships docked in Vukovar



Source: Vukovar Tourist Board, Tourist office performance report, 2019

The number of cruisers that docked in the City of Vukovar has increased over the years, as well as their number of passengers. This is also important for the purpose of development of memorial tourism, because in agreement with tourist agencies, tourists from cruisers could also be approached with this form of tourism that bears witness to the city's past. From the Graph 4 is visible the number of visitors to the Memorial Centre of the Homeland War Vukovar.

Graph 4: Number of visitors to the Memorial Centre of the Homeland War Vukovar

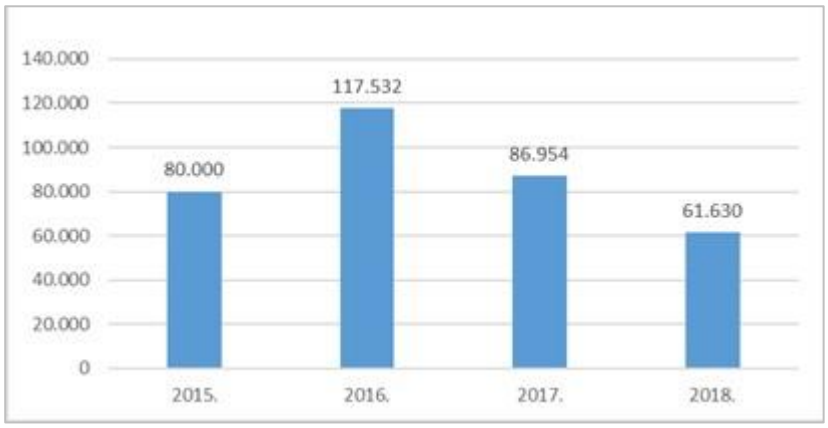


Source: Vukovar Tourist Board, Tourist office performance report, 2019

It was recorded the increased number of visitors to the Memorial Centre of the Homeland War Vukovar in 2018 when there were 28 609 more visitors than in 2015.

Graph following on the next page

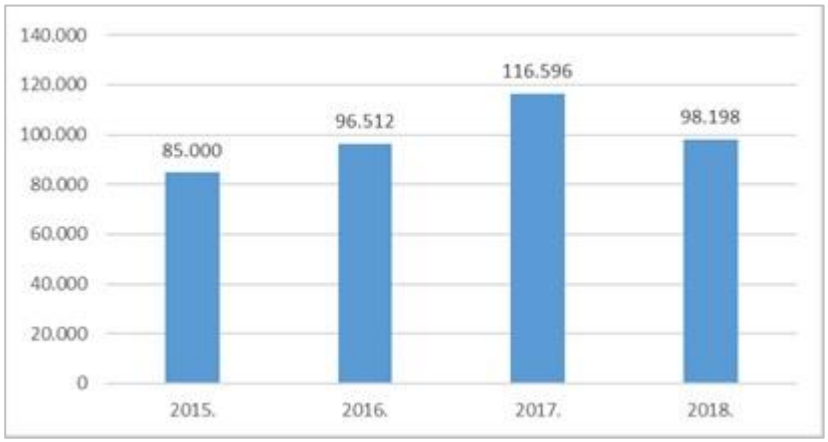
Graph 5: Number of visitors to the Memorial Centre of Croatian War Veterans on Trpinjska Road



Source: Vukovar Tourist Board, Tourist office performance report, 2019

The number of visitors to Memorial Centre of Croatian War Veterans on Trpinjska Road has declined over the years; in 2018 there were 18 370 visitors less than in 2015. The Memorial Centre was opened in 2011. On the Graph 6 is shown the number of visitors to the Vukovar War Hospital - a place of memory.

Graph 6: Number of visitors to Vukovar war hospital - place of memory



Source: Vukovar Tourist Board, Tourist office performance report, 2019

During the recent years the number of visitors to Vukovar's War Hospital has been noted as the highest in 2017. The number of visitors is on the rise, except in 2018 when it was less than the previous year. In the Republic of Croatia is ongoing the project of visiting of the eighth grade pupils to Vukovar in the scope of implementing scientific and educational activities and the aim of the project is to preserve the memory on the Homeland War of Independence and the Battle of Vukovar. During fieldwork, students receive information's on the Homeland War of Independence and the Battle of Vukovar, which is compulsory fieldwork for the history subject in the eighth grade in all of the primary schools in the Republic of Croatia. The pupils start their fieldwork with lectures on the Homeland War of Independence and the Battle of Vukovar, with the aim of creating a theoretical framework before visiting the memorial sites, which is to be followed by a visit to the actual sites of suffering and memorials. The Homeland War lecture is delivered by history teachers, while the lecture on the Battle of Vukovar is given by active military personnel who participated in the Homeland War of Independence. The lectures are adapted to the age of the pupils and they are presented in accordance with the history curriculum for the eighth grade of primary schools.

After the lecture, the students are visiting the Vukovar City Museum and the Vučedol Culture Museum (Ministry of Croatian Veterans, 2019). From Table 1 can be seen the number of pupil's visits from the beginning of the project to the last completed school year.

Table 1: Eighth grade pupils visiting the city of Vukovar

School year	Number of pupils
2014/2015	6 093
2016/2017	34 721
2018/2019	38 709

Source: Ministry of Croatian Veterans, 2019

It's obvious an increase in the number of pupils who came to Vukovar as part of the aforementioned project and have visited the memorial sites of the Homeland War for Independence.

5. SWOT ANALYSIS OF THE DEVELOPMENT OF MEMORY TOURISM IN THE CITY OF VUKOVAR

In Table 2 is shown a SWOT analysis of the development of memorial tourism in the City of Vukovar.

Table following on the next page

Table 2: SWOT analysis of the development of memorial tourism in the City of Vukovar

Strengths - natural resources - cultural and historical resources - gastronomic offer - built memorial sites - cultivated landscapes - environment surrounding the location - proximity to the airport - accommodation capacities - river cruising - numerous manifestations - recognizable destinations - Vukovar's role in the Homeland War - global tourism demand - project for elementary grade pupils - the possibility of education about the city's history - archaeological sites (e.g. Vučedol culture) - successful examples of memorial tourism	*Weaknesses* - insufficiently utilized form of tourism - distances from large receptive markets - depopulation of the area - weak promotion of the City of Vukovar as a destination for memorial tourism - tourism is not a traditional activity of the area - lack of tourist identity - lack of destination management - insufficient number of travel agents
Opportunities - a new tourism product - increased interest in selective forms of tourism - stay with tourist contents on offer - improving the market recognition - linking with other forms of tourism (such as cyclotourism, cultural, event tourism, cruise tourism, rural tourism) - the impact of memorial tourism on the development of other activities (trade and catering) - connecting with the maritime tourist destinations by plane flights - the possibility of creating a tourist product on the basis of memorial tourism by connecting Vukovar with e.g. Dubrovnik, Goli Otok, Jasenovac - networking with other tourist attractions in the city and county - development and promotion of local products (wines, kulen, souvenirs…) - strategic partnerships - the possibility for financing from EU funds - education of the population and potential entrepreneurs on the possibilities and prospects of memorial tourism - new employment in tourism - cooperation between the public and private sectors	*Threats* - prejudice about profit making in places of memorial tourism - other destinations intended for memorial tourism - lack of entrepreneurial climate

Source: author work

As strengths outweigh weaknesses and also opportunities outweigh threats, the development of memorial tourism in the city of Vukovar has a growth strategy potential. Memorial tourism is included in Strategic guidelines for tourism development for the City of Vukovar from 2016-2020 (Institute for Tourism, 2015) and is referred to as a tourist product of special interest to Vukovar.

6. CONCLUSION

Owing its history and the role played in the Homeland War for Independence, the City of Vukovar has its own memorial sites that can be exploited for the purpose of development of memorial tourism. Memorial tourism is a part of dark tourism that provides its tourists with an events and education in relation to the suffering of people as a result of social conflicts and disasters in some areas. The contemporary role of memorial tourism makes also the fact that throughout the historical events, it represents contemporary social relations and promotes tolerance among people. This is why memorial tourist sites can become unavoidable tourist destinations, as witnessed by numerous examples of such destinations in the world. Memorial tourism in the City of Vukovar should be linked to other forms of tourism by providing the tourists with throughout tourism products and experience. One of the possibilities for the development of memorial tourism is the creation of a new tourist product of memorial tourism in the Republic of Croatia by connecting memorial sites (e.g. Vukovar, Dubrovnik, Goli otok, Jasenovac) into one tourist arrangement. Therefore, the development of tourism would have a positive impact on the development of other services (such as trade, catering). From statistical data is visible that the number of tourists and their overnight stays has increased over the years in the City of Vukovar. By project of visiting pupils of the eighth grade to Vukovar has encouraged the education of young people by visiting memorial sites that influence a lot more on their attitude, and provides a greater sense than what is possible to see and read from the books. Thus, from the SWOT analysis is visible the number of advantages and opportunities in the course of the development of the memorial tourism in the City of Vukovar, which means that a memorial tourism has potential for the growth strategies. Development of the memorial tourism in Vukovar could be enhanced by greater promotion of the tourist product, education of the local population about the new possibilities, creating new tourism products and arrangements and networking with other selective forms of tourism.

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THE ATTITUDE OF SMALL BUSINESSES TOWARDS THE STATE ECONOMIC POLICY

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ABSTRACT

The development of small business is one of the prerequisites for strengthening economic democracy in Russia. In the" business-state" system, the entrepreneur acts as a person who assumes the function of risk and progress, while the state is the guarantor of reliability and stability. The author's multifactirial questionnaire was used to study the attitude of entrepreneurs to the state economic policy. To study the image of economic policy and the state used semi-projective techniques - modified semantic differential and the method of "Image of the State" (O. Deyneka). Small business entrepreneurs from the Leningrad and Smolensk regions of the trade business and farms took part in the study. The results of the study showed the dissatisfaction of entrepreneurs with the monetary and tax policy of the state. Also, some entrepreneurs did not show faith in overcoming corruption against the background of a generally positive attitude to economic policy. The image of economic policy is partly in the negative zone of semantic space, which is due to the presence of unsolved problems to date: for example, distrust between business and the state, as positive changes in the field of support for entrepreneurship began to appear relatively recently. The image of the modern Russian state was associated primarily with the figure of the "President". There are also associations with the concepts that embody the products of political labor: "legality", "social protection", "order", and with the function of "management", which indicates a positive image of the state as an institution of policy and, in particular, economic policy, among entrepreneurs of regional small business.

Keywords: *attitude, image of economic policy, small business*

1. INTRODUCTION

The development of small business is one of the necessary conditions for economic stability in Russia, helping to reduce social tension in society and strengthen the democratic system [11]. Small enterprises help to economic growth in the country, affect the saturation of the market with necessary goods and the creation of additional jobs and thereby solve many economic and social problems. The ability of people to do business and such objective factors as the image of an entrepreneur in society and the attitude of the state towards business contribute to the development of entrepreneurship [4]. The factor of coordination of the economic course of the government with the interests of entrepreneurs is of the greatest importance for small and medium-sized businesses [10]. Political attitude require permanent monitoring with the use of various psychological methods and taking into account strategic policy objectives, as well as current. Leading economists and psychologists have shown that the expectations and attitudes of the population towards economic institutions and government affect the state of the economy more than objective determinants [6, 7, 9]. Citizens' attitude to economic policy is an important factor of national security, since entrepreneurship in today's world is a serious economic and political force [1, 14]. In addition, harmonious relations in the “business-state” system contribute to the influx of the young generation into business [14], especially in innovative and technological one. Despite the repeatedly adopted resolutions on small business, the preparation of various programs for its support and development, the current situation with providing guarantees to mass entrepreneurship cannot be called absolutely successful.

The purpose of this study was to study the attitudes to modern economic policy and the image of the state as its subject among regional small business entrepreneurs. In accordance to the purpose, the following empirical objectives of the study were formulated: 1) to identify the attitudes of entrepreneurs towards the economic policy at the present stage of country's economy development and to the state as an institution that regulates political and economic life; 2) to study the image of modern economic policy and the image of the state in the ordinary mind of small business entrepreneurs; 3) to identify the relationship of attitudes to the economic policy of Russia and the image of the state among entrepreneurs.

2. METHOD

2.1. Participants

In total, 80 small business entrepreneurs from the Leningrad and Smolensk regions took part in the study. Entrepreneurs of middle and older age are represented in the sample (average age - 39 years). The proportion of men participating in the study is more than the proportion of women (55% and 45%, respectively). Areas of respondents' entrepreneurial activity: wholesale and retail trade, real estate, agriculture. The subjective income level was estimated as a whole in the sample as average.

2.2. Instruments

The main methodological tool was the multi-factor questionnaire "Attitudes to Economic Policy" (AEP). It had of 40 statements, and measured attitudes towards various aspects of economic policy: structural, regional, monetary, financial, tax. Participants were asked to express their degree of agreement / disagreement on a 7-point Likert scale. The questionnaire was checked for construct validity using factor analysis and for homogeneity reliability using the Spearman-Brown formula. Additionally, two semi-projective methods were used. Semi-projective methods make analysis deeper [2, 9] by re-creating image of phenomenon in common consciousness, which is characterized by conscious and unconscious elements and intertwining of rational and emotional contexts. To study the reflection of modern economic policy of Russia by entrepreneurs, a modified semantic differential (MSD) was used, which included three classical scales by C. Osgood ("evaluation", "activity", "potency") and one new scale "risk-benefit" developed by the psycholinguist I.M. Lushchihina. The phrase "economic policy in modern Russia" was used as a stimulus material. To study the image of the state as an institution of politics a self-developed symbol-association ranking method with the stimuli concept of the "State" was used. The list of associative concepts includes: state functions (governance, rule, direction and control), the state of society, embodying the political activity products (rule of law, stability, freedom, order, social security), the specific people and groups that are associated with the State (President, ruling class, parties, the bureaucracy), some form of interaction between elements of the system "citizen-state" (partner, tyrant, competitor, nobody) [5].

3. RESULTS

The results of the study showed a high degree of approval of the import substitution policy in Russia ($M = 5.38$; $\sigma = 1.87$), an awareness of the need for state subsidies for agricultural development ($M = 6.06$; $\sigma = 1.32$), the manifestation of economic patriotism ($M = 5.40$; $\sigma = 1.77$), in particular preferences to buy domestic goods, if they are not inferior in quality to imported ones. Entrepreneurs also approve the state's environmental control of food products and consumer goods ($M = 6.01$; $\sigma = 1.41$). In addition, small business entrepreneurs for the most part were not indifferent to the environmental consequences of entrepreneurial activity ($M = 5.14$; $\sigma = 1.88$). Thus result showed positive dynamics in the environmental consciousness of entrepreneurs in comparison with the 2007 data [3].

At the same time, the results obtained with the help of the questionnaire made it possible to identify the main problem of relations in the "small business - state" system. Respondents are more not satisfied than satisfied with the legislative framework for the development of small and medium-sized businesses in the country (M = 3.55; σ = 1.64). Very low approval from entrepreneurs is addressed to monetary policy as part of the economic policy of the Russian Federation (M = 2.75; σ = 1.61). The degree of agreement with the statement of trust in the Russian banking system was also low (M = 2.98; σ = 1.60). Obviously, respondents fully and unanimously delegate responsibility for the stability of the national currency to the state and government (M = 6.02; σ = 1.39). Regarding the need for entrepreneur's financial literacy and, in particular, knowledge in the field of the exchange rate and stock prices of leading banks and companies (M = 4.01; σ = 1.76), only half of the entrepreneurs consider this to be important. Another problem area of relations in the system of "small business - state", according to our data, was such a part of economic policy as fiscal policy. Not all surveyed small business entrepreneurs condemn those entrepreneurs who do not pay taxes (M = 3.75; σ = 1.97), and also consider the modern taxation system to be fair (M = 3.10; σ = 1.49). Most respondents are well aware of the principles of taxation and taxes (M = 4.91; σ = 1.68) and favor a progressive income tax scale, considering it more fair to take a higher tax from the rich and increase it in proportion to wealth (M = 4.81 ; σ = 2.19). Some of the study participants could suggest a more advanced tax policy system (M = 3.73; σ = 1.86). Respondents expressed complete unanimity in connection with the request transparency of information regarding the use of tax fees (M = 6.63; σ = 0.93). At the same time there is a high degree of agreement with the statement that it is impossible to overcome corruption in our country (M = 4.57, σ = 2.19). As for social policy, material well-being as a component of economic security, here the respondents are unanimous. The surveyed entrepreneurs are sure that the state should provide them with security in financial sphere (M = 5.16; σ = 1.78). Entrepreneurs agree that, first of all, it is important to prevent the existence of citizens below the poverty line (M = 5.55; σ = 1.55), but they believe that the state should care not only about the poor (M = 5.54; σ = 1. 50), but about all citizens. Analyzing business attitudes of entrepreneurs, it should be noted that the majority of respondents do not show deformations associated with the balance "contribution / return", as was often the case in the 90s. So, most entrepreneurs are inclined to consider human wealth as the result of their individual efforts (M = 6.19; σ = 1, 24). They believe that big capital cannot be gained by honest labor (M = 5.66; σ = 1.50). Finally, they periodically display such a form of socially responsible business as charity (M = 5.29; σ = 1.50), value the reputation of their company (organization) (M = 6.50; σ = 1.05), love their job (M = 6.18; σ = 1.24), expect an increase in their income in the near future (M = 5.22; σ = 1.80). A comparative analysis of the data in the groups of entrepreneurs engaged in trading business and farming showed statistically significant differences (Table 1).

Table following on the next page

Statement	sales		farming		
	M	**σ**	**M**	**σ**	***(p)***
I absolutely trust Russian banking system ***	***3,18***	1,60	2,40	1,50	0,18
I believe that a businessman should be aware of the quotes of the largest banks and companies ***	***4,35***	1,78	3,00	1,3	0,19
The effectiveness of the state apparatus is, first of all, economic, and therefore already political stability ***	***4,90***	1,60	4,15	1,18	0,17
I am ready to move my business somewhere to the regions, if this will reduce costs and increase profits ***	***4,33***	2,35	2,85	2,34	0,27
I consider the modern tax system to be fair ***	2,90	1,53	***3,70***	1,26	0,19
I never participate in charity events **	2,93	1,91	***2,05***	1,88	0,22
I approve the environmental audit of food and consumer goods for sale **	***6,17***	1,28	5,55	1,70	0,16
I like my business, my work*	6,07	1,36	6,55	0,69	0,14
I usually don't think about the environmental consequences of doing business *	3,05	1,88	2,85	1,80	0,21
The state is obliged to care only for poor citizens, the rest should rely solely on themselves *	2,60	1,66	2,05	0,83	0,17

*Table 1: Comparison of attitudes of entrepreneurs of the trading business and farms (Note: significantly different * – p<0,05; ** – p<0,01; *** – p<0,001)*

Farmers trust banks less than representatives of the trading business and distance themselves from financial foresight in the field of currency dynamics. Probably less confidence in banks is associated with problems in obtaining farm loans. At the same time, unlike the trading business, agribusiness entrepreneurs consider the modern taxation system fair. Farmers were more responsible environmental attitudes. As for the approval of environmental quality control of foodstuffs and consumer goods intended for sale, representatives of the trading business showed it to a greater extent. Apparently, with the diversity of domestic and foreign products and the enormous spread in their quality, as well as the desire of manufacturers to reduce the cost of products, representatives of the trading business are accustomed to the need for such control and accounting in their pricing policy. Perhaps agribusiness entrepreneurs showed slightly less approval for control, as they are more confident in their products. They also value their work more. Entrepreneurs in trade showed higher in their interest in providing by state with economic stability; readiness for social mobility of their business; independence from state support than farmers. Entrepreneurs in trade are less likely to participate in charity events. The factor analysis of the data of the questionnaire of attitudes to economic policy in Russia allowed us to identify four factors.

Table following on the next page

I	***Factor of attitude to the functions of the state and to own business (16.1%)***	factor loads
	The state is fully responsible for the stability of the national currency (including the possibility of monetary intervention).	0,649
	A society can be considered civilized only if its members are protected by the state from existence below the poverty line.	0,666
	I approve of an environmental audit of food and consumer goods products for sale.	0,688
	I approve of the import substitution policy in Russia.	0,547
	I am always aware of how things are with my family budget.	0,496
	Every citizen has the right to receive information about where the funds from taxes go.	0,489
	I value the reputation of my company (organization).	0,486
II	***Factor of attitude to tax policy and stratification in society (15.1%)***	
	Big capital cannot be gained by honest labor.	0,683
	I believe that it is fair to take a higher tax from the rich and increase it in proportion to wealth.	0,649
	I could suggest a more advanced tax policy system.	0,590
	The state must ensure my financial security in modern conditions.	0,457
	I am glad that I live in such a complex and rich time for self-realization.	-0,660
	I expect an increase in my income in the near future.	-0,567
III	***Factor of approval / rejection of modern state policy in business development (14.7%)***	
	I have no complaints about the legislative framework for the development of small medium-sized businesses in the country.	0,714
	I am convinced that state power through its actions contributes to the development of business and production in our country.	0,711
	I consider the modern tax system to be fair.	0,680
	My income is consistent with my efforts.	0,553
	I approve of the monetary policy of our state.	0,490
IV	***Factor of economic interest (13.3%)***	
	At present, only a common economic interest can rally citizens.	0,704
	The effectiveness of the state apparatus is, first of all, economic, and then political stability	0,628
	If I didn't have enough money for anything, I would rather find a way to earn it than refuse (buy) it.	0,573
	The priority of state interests over private interests in economic policy is inevitable.	-0,471

Table 2: The factor matrix of the questionnaire attitudes to economic policy

As can be seen from Table 3, the first factor captures the awareness and acceptance of the distribution of functions in the "small business - state" system. The function of stability and reliability is assigned to the state, and risk and progress to business. The entrepreneur is ready to participate in the business focused on import substitution, and bear his risks, he accepts the need for environmental control of his activities, monitors his budget, values the reputation of his company and makes efforts for this. At the same time, he expects the state to fulfill its functions, in particular, responsibility for the stability of the national currency, for the correct spending of tax collections and informing citizens about this, for the economic security of citizens who should not live below the poverty line. The second factor (and the correlations between its elements) shows that entrepreneurs who are dissatisfied with their income and their self-realization condemn the flat tax scale, advocate a progressive tax scale, and demonstrate economic intolerance. The factor reflects the social resentment of some of the small business entrepreneurs. The third factor by weight was called the approval / rejection factor of modern state policy in business development. It included the acceptance of legislation, tax and monetary policy. As shown by the correlation analysis between the signs of the factor, those entrepreneurs who believe that their income is consistent with their efforts, approve the policy of developing entrepreneurship in Russia.

The fourth factor combines the manifestations of economic interest at the macro and micro social level, as well as the economic activity of the individual in order to satisfy consumer interests. The results obtained with the help of the MSD do not generally contradict the assessment of the state economic policy that we identified using the questionnaire. As can be seen from Figure 1, the image of economic policy among entrepreneurs is in the semantic space close to zero, but still in its negative zone. This result was primarily influenced by the descriptor ratings for "slow" (-1.14), "inert", "compliant", "wavering", "backward", "superficial", "dependent" and "disturbing". The results obtained with the help of the MSD testify to the experience of certain difficulties amid the economic crisis provoked by the sanctions of Western countries.

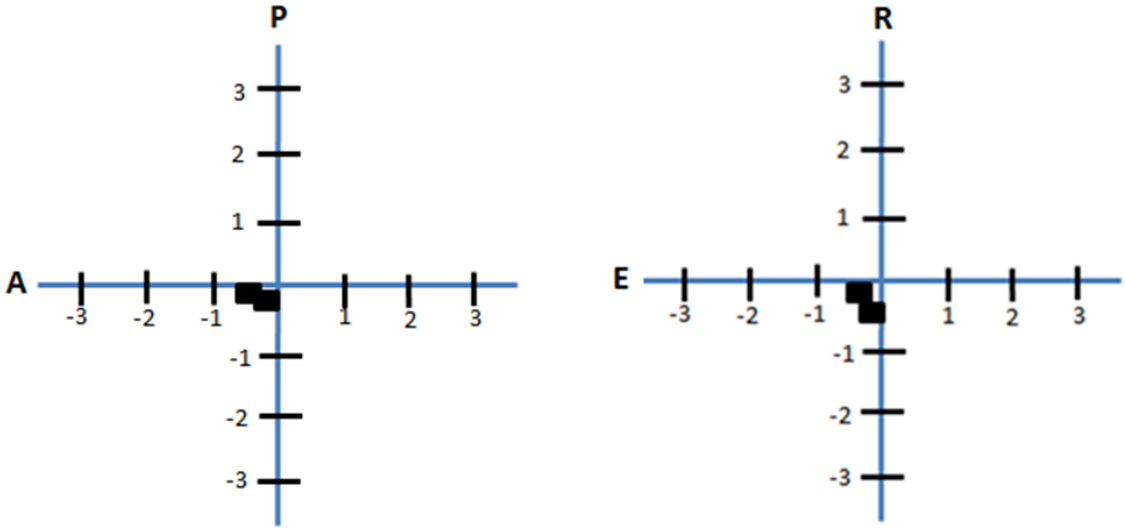

Figure 1: Total indicators in the semantic coordinate space of the scales "Activity and Potency" (A and P) and "Evaluation and Risk-Benefit" (E and R)

The study of the image of the modern state as the main subject of economic policy among small business entrepreneurs showed a favorable picture (Table 3).

«Russian state»	**Rank**	**M**	**σ**
Parties	11	9,75	5,39
Social protection	*3*	*6,83*	*4,36*
Domination	15	10,77	4,87
Partner	13	10,47	4,04
No one	18	15,25	4,61
Ruling class	14	10,55	5,27
Order	*2*	*6,92*	*4,90*
President	*1*	*4,67*	*4,79*
Guide	8	7,73	4,74
Tyrant	17	15,05	4,44
Stability	9	8,65	4,96
Control	7	7,68	3,94
Bureaucracy	12	9,95	5,24
Management	*5*	*7,28*	*4,21*
Liberty	10	9,00	4,38
Competitor	16	11,77	4,61
Legality	*4*	*7,11*	*4,36*
Regulation	6	7,53	4,06

Table 3: Descriptive statistics of the ranking of associations with the concept of "Russian state"

A favorable picture of the reflection of economic policy by citizens of a particular country can be considered one in which the state is associated primarily with the products of political labor, according to Yuryev [13] or socio-political goals that are not amenable to an operational solution, according to the Tuchtfeldt goals pyramid [12]. The top five associations with the state included after the President's figure, such products of political labor as "order", "social protection" and "legality", as well as the "management" function among small business entrepreneurs. As our long-term cross-country studies (for example [8]) have shown, in countries where the state is associated mainly with political people and groups, institutions and the relations of citizens with them, low state authority is diagnosed (Mozambique, Russia in the 90s). And, on the contrary, in countries where the products of political labor are included in the top five associations with the concept of "state", successful relations in the "citizen-state" system are diagnosed, the latter being evaluated as social. Based on the results obtained, it can be concluded that, in the view of entrepreneurs, the modern Russian state copes with the management function, provides citizens with products of political labor - social protection, order and legality, and has a political leader.

4. CONCLUSION

The study of the attitude of small business entrepreneurs to the economic policy of the Russian state against the background of a generally positive attitude allowed us to identify problem areas: entrepreneurs' dissatisfaction with the monetary policy was manifested; identified some expectations in the field of tax policy of the government; some entrepreneurs do not believe in overcoming corruption. The results obtained in our study about the negative attitude of entrepreneurs to monetary policy are consistent with data from other authors. So, the analysis of answers about the forms and measures of state support for small and medium-sized enterprises [10], showed that entrepreneurs expect to receive primarily financial assistance, because for small businesses the lack of free cash and problems with obtaining, processing and repayment of credit are often the most pressing ones. In the factor structure of the attitude to economic policy, the most significant factor clearly recorded the reflection in the minds of entrepreneurs of the differences between the functions of business and the state in the economic system: the business assigns a risk and progress function to itself, and it expects the state to realize the stability and reliability function. The economic policy image is partially located in the negative zone of the semantic space, because of the amount of unresolved problems: for example, distrust between representatives of business and the state, as positive changes in the field of entrepreneurship support have recently begun to appear relatively. Entrepreneurs associate the modern Russian state primarily with the figure of the "president", as well as with such concepts that embody the products of political labor as "legality", "social protection", "order", and with the "management" function, which says about the positive image of the state as an institution of politics and, in particular, economic policy among regional small business entrepreneurs. A comparative analysis of two groups of entrepreneurs - from agribusiness and from the trading business - showed that farmers value their work more, they are confident in the quality of their products, are more likely to take responsibility for entrepreneurial activities themselves, while business entrepreneurs demonstrate some externalism in relation to the state. Entrepreneurs in the retail business are more likely to trust the banking system, and agribusiness representatives are more satisfied with the tax policy. The study has several limitations: it was carried out on small business entrepreneurs from the Leningrad and Smolensk regions, as well as represented by trade and agribusiness. In the future, the selection of small business entrepreneurs should be expanded to include respondents from other regions of Russia and other areas of business.

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ECONOMIC INTEGRATION OF THE WEST SIBERIAN MACRO-REGION INTO THE SYSTEM OF ECONOMIC RELATIONS

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ABSTRACT

The new challenges of spatial development of the Russian Federation update the new configuration of regions in order to modernize regional assets. In these circumstances, regional economic systems show a need to integrate and integrate into the system an interregional and international division of labour based on the principles of equality and mutually beneficial cooperation. Moreover, the integration of Russia into the world economic space, the penetration of local spatial structures of different specialization into world markets, predeterminates the interconnection of corporate, sectoral and territorial development strategies in spatial projection. A new vision of the spatial configuration of regional entities is specified in the Spatial Development Strategy of the Russian Federation for the period up to 2030. The aim of the study is to assess trends in the formation of a single economic space, preceding the implementation of interregional cooperation in the West Siberian macro-region, at the "entrance" to the new institutional structure. The assessment of the capacity of the macro-region, all other things being equal, determines the relevance and novelty of the study. The geographical unit of analysis is the West Siberian macroregion, which includes the Tyumen region, Khanty-Mansi - Ugru and Yamalo-Nenets autonomous districts. Within the framework of the structural and sectoral typology, the macroregion is represented as specialized in the economic development of fuel and energy resources and locally oriented diversification. Spatial design, as transformed, results in complementarities of capacities and synergies in a broader institutional perspective. The period under review 2005-2018, includes indicators of the Federal Service of State Statistics of the macroregion, submitted in accordance with the All-Russian Classification of Products by Types of Economic Activity. To test previous development trends, indicators characterizing the state of socio-economic processes and the impact of foreign economic activity on the formation of gross regional product have been calculated. Analysis of the problem of inclusion and interpenetrability of regions allowed to make an assumption about productivity of creation of a single spatial formation - West Siberian macro-region. Capitalization of the potential of the territory of the macro-region creates prerequisites for increasing the productivity of cooperation between economic actors and the creation of other international alliances.

Keywords: *macroregion, economic development, fuel and energy resources, export, import, international economic cooperation, integration potential*

1. INTRODUCTION

The regional economic systems of the Russian Federation, faced with the realities of the transformation processes of the modern market economy of implementation, show the world community the tendency to form the contours of a common economic space.

Disintegration processes caused by the collapse of the previous model of the economic system, focus on regional interests, intensified imbalances within the framework of a common economic space. Under these conditions, new economic relations have developed in the outer sphere, which determines the development of individual economic entities. However, such integration processes are already insufficient, which actualizes the issue of the involvement of the macro-systems of Russia in the world economy. The problem of positioning the national economy in the global economic space, the preservation of strategic guidelines, and the observance of national security conditions, has now gained particular relevance. The problems of the transition to an innovative type of development of raw material regions have not been studied enough, including the regions of the Far North of Russia. It is necessary to develop conceptual approaches to determining the role and place of the northern territories with a specific raw material structure and highly costly production and living conditions. It is advisable to identify priorities and mechanisms to formulate development strategies for these regions, as well as the use of structural features to increase the level of integration of the country's economic space. The new "agenda" for the long term focuses on geographic space, which is becoming a factor in economic growth. The agglomeration effects of smoothing spatial differences and integrating regions that have the potential to generate global competitiveness are highlighted. The West Siberian macro-region has the potential and capabilities to realize global competitiveness. It includes the Khanty-Mansiysk Autonomous District - Yugra, the Yamalo-Nenets Autonomous District, and the Tyumen Region. The communicative problems of inter-regional interaction of neighboring regions have been repeatedly specified with various hypotheses about the future. The real linkage of management tools focused on foreign markets reflected in the Federal Laws "On the Coordination of International and Foreign Economic Relations of the Subjects of the Russian Federation", Federal Law of the Russian Federation dated 01.01.1999, "On Strategic Planning in the Russian Federation," the Federal Law of July 27, 2014. The new positioning of the constituent entities of the Russian Federation is major scientific and national economic problem, which over the past years, leading scientific research institutes and organizations, in particular, SOPS RAS of the Russian Federation, VNIIVS of the Ministry of Economic Development of the Russian Federation, Institute of Regional Policy of the Ministry of Regional Development of the Russian Federation and others.

2. APPROACHES TO MESOREGION DIFFERENTIATION

Notable features characterize the unified socio-economic space of Russia as a territorial continuum of regional entities. Economic policy, economic relations that are uniform in form and content, legal norms governing the activities of actors, ultimately provide the conditions for the country's sustainable development. The challenges of spatial development, initiating the growth of differentiation of socio-economic proportions, reinforce the problems of inequality and uneven development of economic sectors and the social sphere. Objective diversity is considered both as a potential for innovative modernization of the economy and as a burden of increasing fragmentation of space against the background of interregional contrasts of internal development (Zadorin, 2018, p. 102). The actualization of the innovative potential of the economy implies, first of all, the presence (concentration) of resources, factors and prerequisites for the life of society and the development of the territory. The spatial (territorial) organization of natural, material, and social potentials to assess, maintain, and developing vital systems over time is a universally recognized goal and formulated at a UN conference in 1992 in Rio de Janeiro [United Nation, New York]. World experience in assessing natural potential presented by the World Bank and provides for the assessment of natural resources based on rental payments and world prices. At the same time, the value of the rent (land, forest, etc.) substantiated over the past 25 years based on world prices for agricultural products, forestry, mining, and other industries is justified.

The international standard, developed by the International Institute for Management and Development (Lausanne, Switzerland), suggests the possibility of assessing the resource potential based on the competitiveness rating of states based on multivariate models. An assessment of the effectiveness of using the region's economic potential (EPR) is in the process of reforming and substantiating a general theoretical approach to constructing such a measure. A standard criterion for the effectiveness of using a starting EPR is the ratio of costs to results or the highest degree of achievement of a given goal. The effect of the realization of the region's potential capabilities can be shown as the sum of two components, one of which characterizes the increase in the quality of life of the population, the other - the contribution of the territory to the solution of federal and interregional problems. In the process of formation and development of market relations, the centers of management of socio-economic transformations are shifting to the level of territorial spaces. In this regard, the resource potential of the regions and the effectiveness of its use in conjunction with the development of human capital are of particular importance. The resource potential of the region, being the backbone of the region, acts in a dual sense: as a producer of material goods and social services; as a consumer - an employer of labor for the production of new goods. The model proposed to assess the natural resource potential of the region (PDP):

$$E = Pn + Vs + Vd + Te + Es \qquad (1)$$

where: E - economic assessment of the PDP; Pn - payment for the right to use resources; Vs - resource fee; Vd - payments for emissions, discharges, waste disposal; Te - current costs for the maintenance and operation of environmental funds; Es - payments for mandatory environmental insurance.

There cannot be a single conceptual approach to the formation of the spatial organization of potential, except that it should be combined, ceteris paribus (lat.). Proceeding from this, the formation of geo-economic macro-regions in Russia is acquiring special theoretical and practical significance in connection with the development of priority areas for the integration of the economies of neighboring countries. The independent development of the regions is characterized by significant unevenness, which leads to the presence of contrasts in the territorial distribution of social and economic potentials (Table 1).

Table 1: The development of social processes (in the numerator, the quantity; in the denominator, the rank)

Macroregion parts	Individual indexes				
	average real GRP per capita	life expectancy	literacy	educational attainment	human potential
Khanty-Mansi Autonomous District - Yugra	4.080	0.798	0.999	0.769	0.936
	2	1	1	3	1
Yamalo-Nenets Autonomous Distict	7.461	0.785	0.997	0.810	0.900
	1	2	2	2	2
Tyumen region	1.283	0.769	0.997	0.882	0.909
	3	3	2	1	2
Average	2.556	0.784	0.997	0.820	0.924
Russian Federation	0.188	0.779	0.997	0.893	0.883

Source: Tyumenstat, 2019 p.542

In the system of indicators characterizing social processes, the well-being of households and corporations reflects by gross national product per capita. The individual indices of the average

real GRP per capita differentiated by the studied regions but exceed the indicators of the Russian Federation. Inequality has the form:

7.461 > 4.080 > 1.888 > 1.283.

The intraregional indices of life expectancy in the Khanty-Mansi Autonomous District and the Yamalo-Nenets Autonomous District exceed the average Russian indices; the Tyumen Region lags behind by this indicator:

0.798> 0.785> 0.770> 0.769.

Literacy of the population, as can be seen, has the highest level in the Khanty-Mansi Autonomous District. The level of education, on the contrary, is the highest in the Russian Federation and decreases from the Tyumen region to the Khanty-Mansi Autonomous District:

0.893> 0.882> 0.810> 0.769.

Regarding human potential, inequality has the form:

0.936> 0.909> 0.900> 0.883.

If we compare the regions with each other and with the Russian Federation, then the total parameters, arranged in descending order, reflect the continuum of development of social processes that change continuously in space:

Yamal-Nenets Autonomous District (10.053) > Khanty-Mansi Autonomous District (7,582) > Tyumen Obl. (4.840) > Russian Federation (3,740).

The ordering of individual indices on an ordinal scale characterizes the magnitude of the differences between regional entities. The distribution of the indices of life expectancy and the achieved level of education has an inherent property of transitivity, and in the first case, there is an increase, and in the second - a decrease in the severity of symptoms. The entropy of processes occurring in a closed system increases. Two trends characterize the dynamics of momentary data of official statistics. On the one hand, the intensity of development in each region is increasing (indicators of the previous period are higher than the next). On the other hand, in the development process under the same conditions, differentiation is observed due to territorially localized factors. Differences and features of regions as objects of integration, the importance of socio-economic differentiation of states and civilizations is a manifestation of the law of uneven economic and political development. The highest uneven distribution over the territory is inherent in natural resources, since their distribution is not amenable to economic regulation, but is exclusively geographic and geological, exogenous factor. A quantitative assessment of the endogenous development of each region distinguished by the population size, dynamics and individuality of socio-economic indicators. Considering each region as a subsystem of the country's socio-economic system and as an independent mesosystem with a complete reproductive cycle, trends that reflect significant and typical features of the development of GRP and random deviations in the studied period constructed (dependent variable - GRP):

- for Khanty-Mansi Autonomous District: $\hat{y} = 2{,}493.2 + 61.2t$
- for Yamal-Nenets Autonomous District: $\hat{y} = 1{,}528.2 + 189.3t$
- for the Tyum.obl.: $\hat{y} = 808.3 + 46.6t$

The tightness of the relationship between GRP of macroregion entities, i.e., the rank correlation coefficient W, equal to 0.978, indicates the presence of a strong positive mutual dependence of the three regions.

3. FOREIGN TRADE PRODUCTIVITY

In the context of globalization of the world economy and general liberalization of foreign policy, the inclusion of regions in the system of world economic relations and the development of foreign economic activity acquires a particular role. The effectiveness of foreign trade and the inclusion of Z-Sm in the system of international economic relations characterized by two multidirectional flows - export and import. The basic export and import growth rates relative to the initial period were:

Te = 1.969%, ($\sqrt[14]{25{,}551.4 - 12{,}292.8}$); Ti = 1.691%, $\sqrt[14]{2{,}029.1 - 467.5}$).

The average annual growth rate of exports and imports is 96.9% and 69.1% respectively. Features of the single-product structure of West Siberian macro-region, intra-industry trade between countries with similar products of one industry can have both positive and negative effects on the regulation of processes in the industry market (Barkhatov, 2007; Kryukov, Tokarev, Shmat, 2014, p. . 2-13). Two multidirectional export-import flows do not affect each other's dynamics and there is no connection between them - the rank correlation coefficient is 0.010. The normal equations of trends, referred to the middle of the period, have the form:

$\hat{E}$ = 31,952.1 – 666.7 t;

$\hat{I}$ = 2,329.0 + 287.1 t.

Table 2: Development of WSM foreign trade with non-CIS countries 2005-2018 (million US dollars)

№	Export	Import	Coefficient		Export Dynamics Index	Foreign trade turnover %	Export growth over the previous year
			import-export coverage	foreign trade balance			
0	1	2	3	4	5	6	7
1	12292.8	467.5	26.29	0.04	-	-	-
2	14861.0	544.6	27.29	0.04	1.21	120.7	2568.2
3	39606.6	970.6	40.81	0.02	3.22	263.4	24745
4	54665.5	1708.0	32.01	0.03	4.45	138.9	15058.9
5	31460.3	1537.1	20.47	0.05	2.56	0.58	-23205.2
6	41710.7	1588.5	26.26	0.04	3.39	131.2	10250.4
7	54608.9	2581.0	21.16	0.05	4.44	132.1	14698.2
8	56158.6	1838.9	30.54	0.03	4.57	101.4	-250.3
9	46426.2	1776.2	26.14	0.04	3.78	83.1	-1016.4
10	22281.4	1947.6	11.44	0.09	1.81	50.3	-24144.8
11	14253.9	1922.5	7.41	0.13	1.16	66.8	-8027.5
12	14809.0	6320.5	2.34	0.42	1.20	130.6	555.1
13	18643.4	7374.3	2.53	0.43	1.52	123.1	3834.4
14	25551.4	2029.1	12.59	0.85	2.08	106.0	6908.0

Ceteris paribus forecast for 2030 for export will be equal to 19952.1 million US dollars, (31952.1-666.7 × 18), for import - 7496.8 million US dollars, (2329.0 + 287 , 1 × 18). Such forecasts simplify the process of predicting the trends, since “other conditions” change under the influence of market factors (Shmat, Sevostyanova, 2006, pp. 39-48). Products of the fuel and energy complex held the largest share in the export structure of the macroregion. In 2010, it was 99.3%, (41432.2 / 41710.7), and in 2018 it was 95.7%. The export-oriented model retains its specialization, which develops due to the scale of production as foreign trade grows. Moreover, the interests of both the macroregion and international are focused on the resource potential. Therefore, the development strategy has a global orientation - the sustainable development of the oil-producing territory. Taking into account the effects of such a strategy, it can be translated into spatial coherence by the criterion of commodity exchange (Simarova, 2014, p. 108). The natural dynamics of development and the transformation of this territory into a support base for new oil and gas regions are receiving increasing attention both at the regional level and at the federal level. In contrast to foreign economic activity, the forms of implementation of interstate relations, in terms of scientific, technical, and innovative cooperation, constitute "foreign economic relations." The separation of this concept and foreign economic activity occurred in 1987 and was due to the need to change the management system and the transition from intergovernmental foreign economic relations to foreign economic activity at the enterprise level.

Figure following on the next page

Figure 1: Institutional support for the innovative development of the oil and gas industry of the West Siberian macroregion

Regional	Federal
"The main directions of the development of mineral raw materials and fuel and energy complexes" for 2014-2016. (Decree of the Government of the Tyumen region dated 11.06.2015 N 250-p). "The main directions of environmental protection" for 2014-2016. (Order of the Government of the Tyumen region dated 01.10.2013 No. 1891-rp).	The general scheme for the development of the oil industry until 2020. (Ministry of Energy of the Russian Federation. Order of June 6, 2011 N 212). General scheme for the development of the gas industry until 2030. (Approved by order of the Ministry of Energy of Russia dated 06.06.2011 No. 213). The energy strategy of Russia for the period until 2030. (Order of the Government of the Russian Federation of November 13, 2009 N 1715-r).
"The main directions of the development of education and science" for 2014-2016. (Order of the Government of the Tyumen region dated 01.10.2013 No. 1897-rp). "The main directions of development of the scientific and innovative sphere" for 2014-2016. (Decree of the Government of the Tyumen Region dated 12.28.2016 N 591-p)	Strategy of innovative development of the Russian Federation for the period until 2020 "Innovative RUSSIA - 2020". (Order of the Government of the Russian Federation of December 8, 2011 No. 2227-p.)
The law of the Tyumen region "On scientific, scientific, technical, innovative activity in the Tyumen region." (As amended by the Laws of the Tyumen Region dated 01.04.2008 N 12, dated 07.10.2009 N 65, dated 05.12.2011 N 102, dated 11/10/2013 N 74, dated 09/28/2018 N 90, dated 18.03.2019 N 14, dated 05.06 .2019 N 39).	Federal Law "On Subsoil". (dated February 21, 1992 No. 2395-1). Federal law "On the basis of state regulation of socio-economic development of the North of the Russian Federation." (dated June 19, 1996 No. 78-FZ). Federal Law “On Science and State Scientific and Technical Policy”. (dated August 23, 1996 N 127-FZ).
The action plan for the implementation in the Tyumen region of the Strategy for socio-economic development of the Ural Federal District for the period until 2020. (Approved by order of the Government of the Russian Federation of April 23, 2012 N 619-r). The concept of long-term socio-economic development of the Tyumen region until 2020 and for the future until 2030. (Order of the Government of the Tyumen Region dated May 25, 2009 No. 652-rp (as amended by orders dated November 6, 2013 No. 2082-rp, dated 04/16/2014 No. 596-rp))	The concept of long-term socio-economic development of the Russian Federation for the period until 2020. (Order of the Government of the Russian Federation of November 17, 2008 N 1662-r (as amended on September 28, 2018)). The concept of the Spatial Development Strategy of the Russian Federation for the period up to 2025 (Order of the Government of the Russian Federation of February 13, 2019 No. 207-r).

Research and development expenses include current capital expenditures of organizations allocated during the reporting year, regardless of funding sources.

There is an increase in costs, except 2008 and 2009, due to crisis phenomena in the economy. The volume of shipped innovative goods, works, and services performed include the actual costs associated with the implementation of innovative activities. According to the All-Russian Classifier of Economic Activities OK 029-2014, the main content of cooperation is related to the transformation of ideas into technologically new or improved goods or services introduced into foreign markets. The tightness of the relationship between the observed values - the gross regional product, investments in research and development - the concordance coefficient W is equal to 0.915. The obtained value W = 0.915 indicates the presence of a robust positive relationship between the indicators.

Table 3: The tightness of the relationship between gross and regional product, research costs and the results of innovation (in current basic prices, million rubles)

Years	Gross macroregional product	Costs of organizations of R&D	Volume of shipped innovative goods	Ranks of factors			Sum of ranks	Square of the sum of ranks
	x	y	z	RX	RY	RZ		
0		1	3	4	5	6	7	8
2005	2215584.4	3152.0	4816.7	1	1	1	3	9
2006	2551355.4	4391.6	10550.5	2	2	2	6	36
2007	2758813.1	6424.9	14520.5	3	3	5	11	121
2008	3121401.3	7101.1	17846.8	5	4	6	15	225
2009	2870284.0	7717.8	11822.1	4	6	3	13	165
2010	3301573.4	9289.3	17968.0	6	7	7	20	400
2011	4112596.0	7360.7	73798.9	7	5	11	23	529
2012	4625467.5	10215.8	27080.0	9	8	10	27	725
2013	4950207.4	10325.3	14145.0	8	9	4	21	441
2014	5295348.5	11624.9	27071.4	10	10	9	29	841
2015	5851557.8	16543.2	45145.7	11	12	8	31	961
2016	6009561.3	14955.2	173187.0	12	11	12	35	1225
2017	6985994.8	17577.8	206025.7	13	13	13	39	1521
2018	7669340.8	18653.3	265811.3	14	14	14	42	1764
Number of Ranked Features m = 3				Total			315	8963

4. CONCLUSION

Prospects for modernization and the transition to an innovative type of development of the northern territories determined by the development scenarios that will be embodied in this space. The most essential factor in the growth of innovative demand from the regions is the increase in the level of redistribution of the extracted mineral and biological resources. The analysis shows that there are three main scenarios for the development of the Russian Far North: "technological modernization," "new industrialization," and "strategic choice." "Technological modernization" implies an innovative component, which is possible under the conditions of preservation of the existing industrial raw material model, the primary operator of which is large oil-producing companies. Within the framework of this model, it is possible to eliminate some of the most acute social and infrastructural problems and imbalances. Modernization, in this case, is local, and the introduction of innovations will be determined by the informatization of production and management processes while maintaining the role of the raw material component in the economic structure of oil and gas provinces.

A higher demand for innovative developments is associated with the implementation of the "new industrialization" scenario. In this case, the regional government with the support of the federal center becomes the primary strategy for the development of territories. The implementation of the "new industrialization" scenario is the "raw" development of the territory on a technologically updated integrated basis and the most advanced processes to achieve the optimal balance of sectoral and spatial structures. Innovation determined by the demand for scientific and technological developments that reduce the material and environmental costs of extraction and primary processing of raw materials and increase the efficiency of the development of the mineral resource base due to managerial innovations related to the implementation of information technologies in management and exploration, production and processing. The optimal scenario for the transition to an innovative type of development is the implementation of the "strategic choice" scenario. The leading participant is the state that proposed a strategy for socio-economic development based on the maximum consideration of the country's spatial potential. The content of the "strategic choice" scenario is the targeted transformation of raw regions into a mechanism development of the Russian economy through the inclusion of the northern regions in the processes of globalization and positioning in the international division of t oud. The demand for innovations will be set, firstly, by commodity companies, which will be forced to modernize production due to the introduction of strict federal and regional technical and environmental regulations for the extraction and processing of raw materials, and secondly, a drastic increase in the level of redistribution of raw materials, and thirdly, optimization of human living costs in the Far North with a significant increase in the quality of life and a decrease in anthropogenic pressure on the environment. Summing up, it should be emphasized that the creation of the West Siberian macro-region will enhance the investment attractiveness of the territory for the concentration of internal reserves, the accumulation of own resources for their rational development, and use of production potential to create a unified infrastructure.

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PSICHOLOGY OF THE SAFE CONSUMPTION AT THE FOUNDATION OF FUNCTIONAL EQUIVALENCE THEORY

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ABSTRACT

It is supposed that every need is development of an imbalance caused by an overflow of informational, physical, and chemical factors that emerges over the course of life and cannot be eliminated by the organism independently without the risk of structure disturbance. Satisfaction of each need is a search for "channels" of equivalence establishment, in other words, increased or decreased number of informational, physical, and chemicals stimulus for elimination of this overflow. The final result of fulfilling the needs is establishment of equivalence due to transformation of surplus in factors mentioned before into functional and structural changes in an organism, into changes of behavioral activity including behavior of consumers. Elimination of imbalances without consequences for vital processes has its limit depending on individual potential connected with genetic features of an organism. Modern society interested in creation of a "qualified consumer" forms additional imbalances that are often unnecessary, within a person via means of mass media. At the same tame, advertisement offers "channels" of eliminating these artificially-created imbalances through purchase of goods and services. If needs are not fulfilled, a stress appears accompanied by negative emotions. Prolonged lack of possibility to eliminate imbalances in case a person is out of individual potential, leads to such consequences as neurosis, psychosomatic diseases, and finally, lifespan shortening. As a result, development of economy through growth in sales volume can lead to degradation in population health and cause considerable economical loses. That is why an efficient and safe consumption suggests mutual responsibility of seller and customer, and means not only sales promotion but also health promotion to provide adequate conditions to satisfy needs in future.

Keywords: *theory of functional equivalence, consumption, sales promotion, stress, health*

1. INTRODUCTION

At present, the development of the economy implies a continuous increase in the volume of goods and services consumed. Ideally, everything that is produced should be consumed with a subsequent increase in production for even greater consumption. This scheme assumes a constant increase in the amount of consumed resources of the Earth with the potential for their complete exhaustion. This situation is of great concern to the defenders of nature. In developed countries, there is a constant talk of responsible consumption. At the same time ideology of “consumerism” is wide spread though new consumption schemesmore safe for nature are being proposed and evaluated. It should be noted that although the growth in consumer activity may lead to the formation of dependence on the purchase of goods and services, any restriction of consumption is considered an attempt on personal freedom (Reith G., 2004,pp.285-291). At the same time, economic development requires, on the one hand, that consumption be optimal in terms of resource use. On the other hand, a person must consume goods and services produced for as long as possible, which requires certain efforts to preserve his or her health and extend the life expectancy. In this article, we offer approaches to optimize human consumption and consumer behavior based on the theory of functional equivalence.

2. NEEDS IN TERMS OF THE THEORY OF FUNCTIONAL EQUIVALENCE

The basis of consumer behavior has traditionally been the presence of needs. At the same time, usually, under the necessity is understood both what a human being needs in order to provide vital activity, and specific force of living organisms, and deviation of organism indices from normal values. What is the meaning of needs? We try to find the answer to this question within the framework of the theory of functional equivalence, which we are developing.We believe that information, physical, and chemical effects on the body should be equivalent to the sum of information, physical, and chemical components of vital activity transformed in the body and isolated from the body (Avilov O.V., 2019, pp.72-73). Thus, in our opinion, the need is the development of imbalance of different degree of severity, caused by the excess of information, physical and chemical factors formed in the process of vital activity, which cannot be removed by the organism independently, without the risk of structure disturbance. And satisfaction of needs is a search of "channels" of equivalence establishment, that is increased or decreased quantity of information, physical and chemical stimuli for elimination of this excess. The final result of needs satisfaction is equivalence establishment due to transformation of information, physical and chemical components surplus of vital activity into functional and structural changes in organism. These include, for example, the excretion or synthesis of certain substances, cellular renewal, mass and volume changes in organs and tissues, and changes in motor activity and behavior of a person. The process of establishing equivalence can go in stages. In this case, the sum of physical, chemical and informational changes in the body after meeting the needs is equivalent to that before meeting. Only ratios between physical, chemical and information components of vital activity process change. Formation and elimination of imbalances occurs continuously during a life course. From the point of view of our theory the imbalance exists already at the level of zygote, and is defined by initial level of disequilibrium. The step-by-step process of equivalence formation allows slowing down the process of approaching the full equilibrium - death. Elimination of imbalances without consequences for vital activity processes is possible only in that volume and pace, which are mainly determined by genetic features of the organism. We believe that the meaning of our life is well-timed elimination of imbalances at an optimal pace for slowing the time of death. At the same time, one cannot reduce the degree of congenital disequilibrium without the risk of premature death. One can only not increase it by establishing equivalence in time. However, life in society assumes that the disequilibrium and, consequently, the severity of the imbalances will increase constantly. For example, society imposes to the population that time of the beginning of the work and its duration, which absolutely do not correspond to the possibilities of the majority of society members to eliminate imbalances without risk for health. The fatigue after a work shows that imbalances appeared, and equivalence is not established. The need to follow fashion and a certain style of consumption activity in order to maintain one's position and income level may lead to the same consequences Daily contact with sources of information such as close people and work colleagues, the Internet, television and radio can increase the imbalance in our body. The list of such examples can be continued. In our opinion, it is worth noting the role of consciousness in the process of forming and eliminating imbalances. On the one hand, consciousness at the expense of concentration of attention on significant, in the opinion of an individual, individual problems and goals is able to increase the information consequences of life processes, that is, the degree of imbalance development. On the other hand, a person can consciously avoid those situations which increase individual disequilibrium and, especially in preliminary preparation, can quickly find "channels" for establishing equivalence.Needs are formed in the fetus as early as the womb. After birth, further development of the needs system takes place on both the unconscious and the conscious level. In the process of education in the family and in educational institutions of different levels, the individual learns the skills to eliminate emerging imbalances through the formed "channels" of equivalence.

Modern society, which is interested in creating a "qualified consumer", creates additional imbalances in a person through the mass media, most often completely unnecessary imbalances. At the same time, with the help of advertising, "channels" are imposed to eliminate artificially created imbalances by purchasing goods and services. As a result, economic development through sales incentives may lead to a reduction in health and life expectancy. In addition, constant participation in the consumer race may prevent a person from satisfying the metaphysical needs according to A.H. Maslow, as well as finding his meaning of life. At the same time, it is very important to know which needs couldbe most easily formed by the mass media. In order to preserve a person's health, one should know which imbalances are most likely to be corrected by means of consumer behavior, which can lead to exceeding the individual potential of the prevailing part of the population.

3. NEED FOR SAFETY AS A REASON FOR MOST CONSUMER BEHAVIOR

One of the most important needs that define many aspects of human consumption is the need for safety. Satisfying this need (or, according to our theory, correcting an appropriate imbalance) can also come at the expense of changing behavior in general and consumer behavior in particular. The purpose of consumption change is to establish equivalence. To obtain a sense of security, which is an indicator that equivalence is established, a person buys certain goods and services. The best known examples of such consumption are the purchase of a home, technical devices, including weapons, and the conclusion of insurance contracts. But achieving a sense of security can, in our opinion, go in other ways as well. For example, a person can start playing sports to become strong. In this case, the most popular may be martial arts, especially those that have been proven to be effective, or based on successfully made movies. In addition, it is precisely because of the need to acquire a sense of security that we believe fashion is mainly dictated by Western countries. The majority of humanity's representatives at the subconscious level are confident in the superiority of Westerners. Therefore, there is a copying of their clothing styles, features of consumer behavior. Imitating strong and influential people, a person psychologically feels stronger. In our opinion, human reproductive behavior also reflects the process of establishing equivalence in order to ensure personal safety. Since ancient times, the large number of children in a family has meant an increase in the strength of the family and, therefore, in personal safety. High fertility in developing countries confirms that old traditions are longstanding, especially when the State is not performing its functions. Material well-being in developed countries has been accompanied by a decline in the number of children in the family. Although conditions for the birth and upbringing of children are improving considerably, and an increase in fertility could be expected. But the opposite situation can be observed. In our opinion, this is largely due to the fact that the sense of security is achieved through the work of state structures: the army, police, health care system, social protection system. Another way to increase the feeling of personal security is to want more and more money, even when it seems senseless, because everything that can be bought is already bought. The feeling of being strong, meaningful, safe is usually enhanced when one gains power. The aspiration to power can be represented as process of establishment of equivalence at an information level. The information way of equivalence formation at elimination of the misbalance connected with feeling of insufficient safety is observed, in our opinion, and at aspiration to find that knowledge which nobody possesses. Thus, the need for security in many cases determines expected consumption. At the same time, in order to make consumption more optimal, it is necessary to know the indicators of both the emergence of needs and their satisfaction.

4. EMOTIONAL STRESS AS AN INDICATOR OF NEEDS SATISFACTION

It is known that in all situations when the human body encounters something new, unusual or dangerous, stress occurs, which may lead to serious changes in the functional state of the person (Selye H.,1952, pp.32-50; Kozlowska K., 2013, pp.315-318).From the point of view of functional systems theory, emotional stress is formed in all conflict situations in which the subject cannot satisfy his needs (Sudakov K.V., 1993, p.398). But according to the theory of functional equivalence, the view on the causes of stress can be somewhat different. In our opinion, the meaning of a stress reaction is an answer to a situation when the rate of imbalance development due to the impact or sudden absence of impact of informational, physical or chemical factors exceeds the rate of establishing equivalence. In this case there is an attempt of emergency formation of equivalent response through different "channels". As a result there is a change in functioning of practically all systems of an organism. But in connection with the fact that organism's response is urgent, stress in this phase of development is accompanied by significant disintegration in the work of functional systems and negative emotions (Sudakov K.V., Yumatov E.A., Tarakanov O.P., 1996, pp.38-39). This type of stress, also called acute stress, occurs when the imbalance is very pronounced and forms suddenly, for example, when trying to escape in a fire. If the imbalance exists for a long time, chronic emotional stress develops in order to find 'channels' to establish equivalence. In our opinion, its manifestations against the background of negative emotions can be described as a state of frustration, anxiety, cognitive dissonance. If we are talking about imbalances connected with attempts to satisfy higher demands (Maslow A.H., 1963, pp. 122-125) or to find meaning of life, we can speak about "existential vacuum" according to V.Frankl (Frankl V., 1966, pp. 98-99), or even about remorse. We believe that it is the prolonged absence of elimination of imbalances through the establishment of equivalence that leads to such consequences as emotional burnout syndrome, chronic fatigue syndrome, neurosis, psychosomatic diseases, and, as a result, to shorter life expectancy. But needs can be met, and the meaning of life is found. In case of establishment of equivalence in full positive emotions are formed in the person, and there is a transition from disorganization to coordination in work of functional systems. At the same time, positive emotions conceal a certain danger. These emotions are capable to push the person to statement of new and new purposes, to conscious formation of imbalances, not so much to receive desirable, as to receive positive emotions after elimination of imbalances. A kind of dependency may arise with the risk of exceeding a person's capacity to establish equivalence. "Addictive consumption" is a significant problem for developed countries (Reith G., 2004, pp.285-291). Such suboptimal consumption may be an additional cause of family stress (Boss P., Bryant C.M., Mancini J.A., 2017, pp.57-59).Is it possible to change a style of consumption?To answer this question, we investigated the consumer behavior of three married couples aged 30-36 years. All three women complained about overwhelming dependence on shopping and constant problems with the family budget. Measuring the stress levels of all six people using the methods of K.V. Sudakov and co-authors (Sudakov K.V., Yumatov E.A., Tarakanov O.P., 1996, pp.39-42) showed that emotional stress reached high values. All three married couples were also studied for their specific consumer behavior. Further, based on the recommendations of A.T. Beck (Beck A.T.,1970,pp.189-193), three sessions of cognitive therapy were conducted with all married couples within a month, a new hierarchy of needs was constructed, and more optimal models of consumer behavior were recommended. From the point of view of functional equivalence theory, we evaluated the severity of imbalances in families, determining the level of such an emergency equivalence mechanism as stress. We then individually selected the "channels" for establishing equivalence, checking their compliance with the task of eliminating imbalances associated with consumption. A month after the start of cognitive therapy sessions, it turned out that all six people (men and women) had reduced their emotional stress levels, changed their consumption preferences, significantly improved their mood, and lost an

overwhelming desire to make new and new purchases. We believe that this was a sign of the elimination of imbalances and the establishment of equivalence. Therefore, in our opinion, consumer behavior can be corrected and "addictive consumption" can be eliminated. In our opinion, the risk of psychosomatic pathology in three families has been significantly reduced.

5. CONCLUSION

Thus, the theory of functional equivalence helps to change the point of view on the cause of needs. Needs are constantly arising imbalances in the body that cannot be eliminated by one's own efforts and require a change in the action of information, physical and chemical factors of the human environment. Modern society, with the help of mass media, is creating more and more imbalances in the human body that are the cause of consumer behavior. We suppose that majority of themotives for consumption are related to attempts to correct imbalances caused by a lack of sense of security. At the same time, on the one hand, thanks to advertising, "channels" of establishment of equivalence, in other words, the goods and services with the help of which it is possible to eliminate the imbalances and to form an equivalent response become known. On the other hand, also thanks to advertising, a person is under constant emotional stress caused by the consumer race. Stress is, in our opinion, a mechanism with the help of which the organism tries to urgently find "channels" to establish equivalence. But if the person does not know, what exactly purchases can eliminate available imbalances, or if he or she knows what exactly he or she would like to buy, but experiences shortage of financial resources for making purchases, chronic emotional stress develops. As a result, the risk of psychosomatic pathology increases significantly. The degree of emotional stress in consumers can indicate both the presence of imbalances and their full or partial elimination, in other words, the establishment of equivalence through consumption. When working with families experiencing emotional stress associated with shopping addiction, it has been shown that cognitive therapy can optimize consumption with subsequent reduction of stress levels. Society should be interested not only in short-term improvement of economic indicators related to the stimulation of consumption of goods and services. If consumption exceeds a person's individual capacity to establish equivalence, there may be serious health consequences and even a reduction in life expectancy, leading to significant economic losses. In this regard, society should be interested in ensuring that individual consumption lasts as long as possible. This is possible if producers of goods and services as well as advertisers act responsibly. They warn people about the risks of "Addictive consumption", as well as train them to have optimal, healthy and durable consumption. We suppose that schools for “wise consumers” could be recommended. It can be assumed that the use of resources with mutual responsibility of producers and consumers of goods and services will also be optimized.

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IMPACT OF INSTITUTIONAL ENVIRONMENT UPON EFFICIENT FINANCING OF PUBLIC AND MUNICIPAL PROCUREMENT

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ABSTRACT

Financial effect of public procurement depends on the transaction specifics in view of the informal institutional practices. Institutional environment impacts relations between individuals under the conditions of uncertainty, facilitating or preventing opportunistic conduct of counteragents. Appropriate schemes of psychological protection, the awareness of successful cases and mechanisms of responsive adaptation as well as the need to support sustainable agent operations amid public administration by metrics directly influence the relative efficiency of procurement procedures and the public contract system in general. Based on empirical data and macroeconomic statistics, the authors give ex post evaluation of the impact of institutional and conduct factors, such as dependence on preceding metrics, economic crime incidence, religious and ethnic factors, on the relative saving of public financial resources within the public contractual system.

Keywords: *contractual system, economic conduct, opportunism, public procurement, saving*

1. INTRODUCTION: FACTORS UNDERLYING ECONOMIC CONDUCT, INSTITUTIONAL ENVIRONMENT AND EFFICIENCY OF PUBLIC REGULATIONS

The new institutional economic theory analyses financial-and-economic policy emphasizing the fact that due to non-zero transaction costs financial performance invariably depends on conduct of individuals and the conditions of material-and-technical environment. Conduct factors, culture or a system of believes influence how institutions develop and the way an institutional environment facilitate achievement of particular financial or other economic targets [2; 12; 28]. Several studies have been conducted on an effect of culture, particularly, reduction of interpersonal competition and increased confidence upon the outcome of economic development. It is expected that countries, where institutions are conducive to elevating the level of trust, demonstrate a faster economic growth by streamlining transactions under the conditions of uncertainty, reducing transaction costs of counteragent search, obtaining reliable information and control [10; 16; 32]. On the contrary, fragmentation by class, religion, language, ethnic characteristics or the level of income helps increase confidence (reduce transactions costs) within groups, but confidence declines on a scale of the economy in general [19; 22; 25; 26; 29]. As a result, rent-seeking behaviour is developing, financial institutions weaken and an economic policy tends to be inefficient.

Efficiency of transactions is predetermined by preliminary assessment of the starting conditions for activities of individuals in the established institutional environment, which depends on three elements [11]:

1. Knowledge and prevalence of appropriate patterns of psychological protection;
2. Information about similar cases of responsive adaptation – how rooted is such conduct pattern within a particular economic order determined by an institutional system;
3. Ex-ante assessment of alternative costs and / or transaction costs of a conduct strategy in a particular physical-and-technological environment. If such assessment is complicated or impossible due to bounded rationality of the parties to an exchange, alternatively it is possible to compare the current state with the desirable one and the one achieved at the previous stage.

Let's consider an impact of these three theoretically ascertained factors upon an official indicator of public procurement efficiency defined as a relative saving of budgetary funds achieved through procurement procedures within the public contractual system.

2. A MODEL OF SAVING PUBLIC FINANCIAL RESOURCES IN VIEW OF INSTITUTIONAL ENVIRONMENT FACTORS

A model chosen for studies of the Russian Federation stems from the approaches of the new institutional economic theory [4; 17; 18; 30] that comprises ideas from social and evolutional psychology [14; 33], social and economic anthropology [8; 9; 23; 24; 27], taking into account the specifics of the tools of new public management [7] and metrics management [3; 31]. Several factors influencing the quality of an institutional environment can be identified based on performance analysis of public and municipal procurement in Russia:

1. The existing system of formal rules of procurement operations, the backbone of which today is No. 44-FZ Federal Law [13], is rather complicated for comprehension and execution and incurs a set of significant sanctions from the guarantor. Therefore, in view of the reluctance of individuals to take risk, deliberate violations of the public procurement rules resulting in its decreased efficiency is possible only through precise understanding how the mechanisms of the contractual system work. An experience in training specialists for public procurement leads to a conclusion regarding the significance of the higher education factor for correct acceptance of formal rules for public and municipal customers as well as suppliers. Higher education also enables to estimate the expected costs and benefits of opportunistic behaviour of the exchange participants more adequately.
2. Based on the premise about the impact of information about similar cases of responsive adaptation upon the conduct of customers and suppliers, the known (publically ascertained but concealed from justice) facts of violations will play the key role in choosing rent-seeking behaviour and emerging moral hazards in public procurement. Monitoring and oversights measures, that put an emphasis on the procedural and financial aspects of procurement, highlight a group of corruption offences qualified as "taking and giving bribe" (Articles 290, 291 of the Criminal Code of the Russian Federation) and "abuse of office" (Article 285 of the Criminal Code of the Russian Federation). These data provide ex post evidence on the prevalence of opportunism in the public sector as a self-reproducing mechanism in transactions.
3. Since spending units must execute the Budget Act and fulfill the standard for complete use of financial resources allocated for public procurement, one might assume a significant degree of influence of prior experience upon the conduct of spending units in the next period in order to avoid funding cuts. Also, information about past conduct of a typical spending unit will be taken into account to estimate alternative costs of customers' managerial decisions with regard to the size of budgetary funds saving.

The first descriptive regression model characterizing saving of financial resources in public and municipal procurement is given below.

$$ECO_{i,t} = \beta_0 + \beta_1 ECO_{i,t-1} + \beta_2 CRIM_{i,t} + \beta_3 HE_{i,t} + \varepsilon_{i,t}, \quad (1)$$

Where

$$ECO_{i,t} = \frac{НМЦ_{i,t} - СЗК_{i,t}}{НМЦ_{i,t}} \quad (2)$$

$ECO_{i,t}$ – the saving level in public procurement in the *i* subject of the Russian Federation (region) in the *t* period;
$НМЦ_{i,t}$ – the total initial maximum contract price in public procurement in the *i* subject of the Russian Federation (region) in the *t* period;
$СЗК_{i,t}$ – the total value of public procurement contracts concluded in the *i* subject of the Russian Federation (region) in the *t* period;
$HE_{i,t}$ – the share of employed population aged 25-64 with a higher education degree in the *i* subject of the Russian Federation (region) in the *t* period;
$CRIM_{i,t}$ – the share of registered offences under Articles 285, 290, 291 of the Criminal Code of the Russian Federation in the total registered offences in the *i* subject of the Russian Federation (region) in the *t* period;
$\varepsilon_{i,t}$ – the random model error.

Several interrelated hypotheses are verified in the study experiment:

- *H1:* The size of saving in the previous period gives a statistically significant and positive effect upon the level of saving in public procurement in the next period.
- *H2:* Registered offences under Articles 285, 290, 291 of the Criminal Code have statistically significant and negative effect upon the level of saving in public procurement in the current period.
- *H3:* Presence of population that obtained higher professional education has a statistically significant and negative effect upon the level of saving in public procurement.

The empirical data used in the regression model are taken from Rosstat [the Russian Federal State Statistics Service] to show the share of employed population, aged 25-64 with higher professional education in 2012-2017 [5]. The value of the initial maximum contract prices and the value of contracts concluded under the law of the Russian Federation with the breakdown by regions in the analyzed period are found on the official web-site of the Unified Information System in Procurement [6]. Figures on registered corruption offences are published on the Legal Statistics Portal of the General Prosecutor's Office of the Russian Federation [15]. The main sample covered 83 regions of Russia before 2014 and 85 regions after 2014. Table 1 shows the estimates for 2012 – 2018 based on the model.

Table following on the next page

Table 1: Efficiency model for spending public financial resources in public and municipal procurement that takes into account conduct dependence on information about similar cases of responsive adaptation (the dependent variable – relative saving of public funds by regions of Russia)

Independent variables	2012	2013	2014	2015	2016	2017	2018
β_1 (saving in the previous year)	0.678***	0.603***	0.434***	0.748***	0.932***	0.118**	0.184***
Standard error of the regression coefficient	0,1	0.065	0.095	0.138	0.126	0.062	0.053
β_2 (offences)	-0.066	-1.148**	-2.243**	-0.785	3.514**	-2.186**	-1.404**
Standard error of the regression coefficient	0.07	0.55	0.834	0.907	1.571	1.119	0.553
β_3 (higher education)	0.192	-0.092*	-0.064	-0.132	0.229*	-0.249***	
Standard error of the regression coefficient	0.858	0.048	0.063	0.089	0.123	0.086	
β_0 invariable	5.853**	7.543***	6.853***	9.546***	-6.064	16.358***	4.963***
Standard error of the regression coefficient	2.253	1.701	2.473	3.259	4.482	2.826	0.628
R^2 – determination coefficient	0.388	0.582	0.328	0.332	0.428	0.206	0.243
F (Fisher test)	16.661	36.724	14.326	13.438	18.724	6.469	13.181
Number of observations	83	83	83	85	85	85	85

*Note: *** – significance at 1%, ** – significance at 5%, * – significance at 10%.*

For instance, the regression model takes the following form for 2017:

$$ECO_{i,2017} = 16{,}358 + 0{,}118 * ECO_{i,2016} - 2{,}186 * CRIM_{i,2017} - 0{,}249 * HE_{i,2017} \qquad (3)$$

The calculations show full or partial verification of the formulated hypotheses. The saving factor in the prior period is always significant at 1% error and positive. Therefore, the H1 hypothesis is verified over all years of observations, which proves the fact of constant attention of customers not only to the market conditions when saving is achieved, but also to the acceptable baseline of the previous year. Thus, both the technological and institutional bases of the economic conduct of customers that enable financial performance are verified. The criminal conduct factor is not always statistically significant and is nearly always negative. The H2 hypothesis is partially confirmed since over the years estimates with various statistical significances are observed; however, the fact of prevalence of (rooted) opportunistic behaviour in the public sector in the territory in question had a negative impact on cost-cutting (saving) in most years from the analyzed period. The H3 hypothesis is partly verified for particular years of observation. Perhaps, the importance of this factor increases in the watershed years (introducing a new legislative framework or intensifying the work of the regulators) and decreases in relatively "quiet" periods of customer's operations. For example, 2016 is a special, adaptation year due to an increased demand from politicians and the upper reaches of the bureaucracy for intensifying the efforts of the law enforcement bodies as a demonstrative anticorruption campaign within the public procurement system (Fig.1).

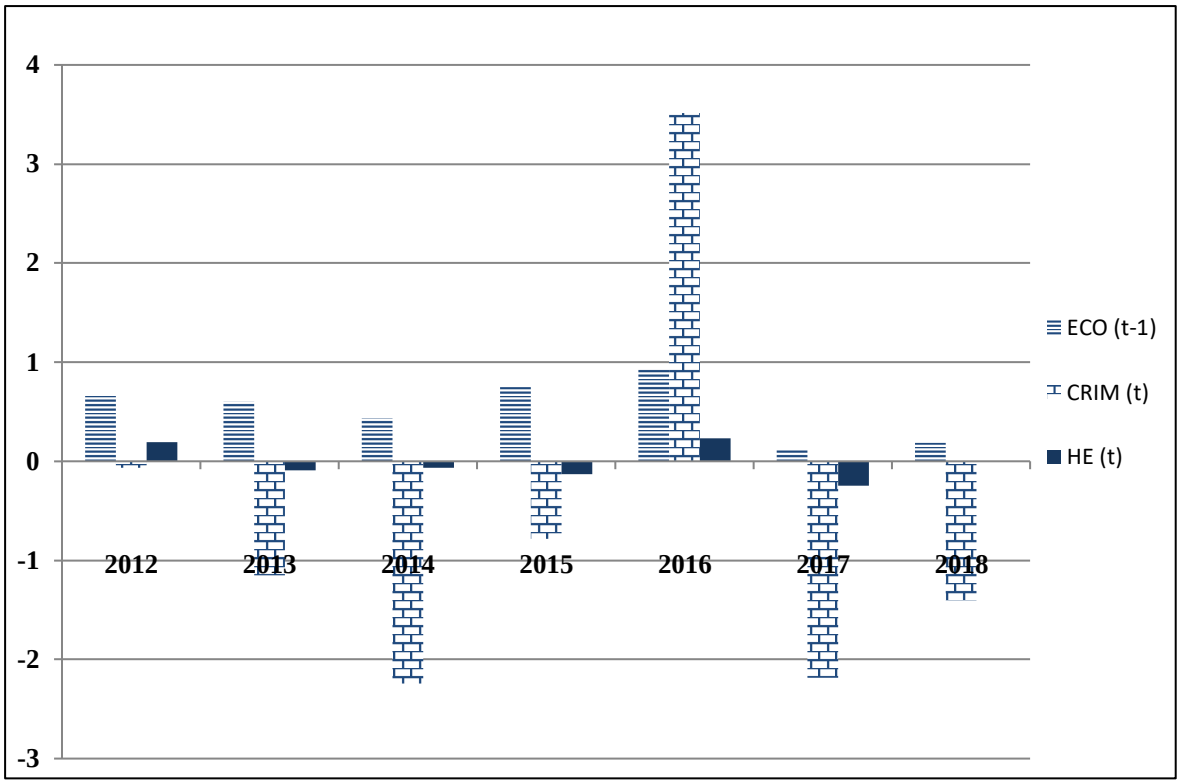

Figure 1: Pattern of coefficients for values in the regression model 1

3. A MODEL FOR SAVING PUBLIC FINANCIAL RESOURCES IN VIEW OF BEHAVIOURAL SOCIAL-AND-PSYCHOLOGICAL FACTORS

The second and third regression models are based on understanding that a growing fractioning of the society into different competing groups or clans simultaneously increases intra-group confidence but also raises transactions costs of market interaction in general, propagates opportunism as an efficient adaptation strategy and decreases the efficiency of public financing. Such understanding lays the foundation of already mentioned works by Jan Delhey and Kenneth Newton (2005), as well as Niclas Berggren and Henrik Jordahl (2006), Christian Bjørnskov (2009), Daniel Zerfu (2009) and other scholars [20; 21; 22; 34]. We deliberately do not combine these models into a single one because an integrating feature for new inputs is establishing a network structure and clans, for which development metrics are not represented by Russian regions in sufficient detail. For this reason, influence of social-and-psychological and behavioural factors upon financial performance of procurement operations will be considered from several different points of view, integrated by an idea of behavioural transaction costs. Let's make two additional assumptions to build a model: 1) Religious heterogeneity that delineate competing groups into "insiders" and "outsiders" can decrease efficiency of financing procurement activities in a region; and 2) Ethnic fractioning, delineating competing groups into "insiders" and "outsiders", can also decrease economic efficiency of procurement. To put it more exactly, in the second model we shall verify several interrelated study hypotheses.

- *H1:* The size of saving in the previous period gives a statistically significant and positive effect upon the level of saving in public procurement.
- *H2:* The factor of presence of population in a region that practice religions, which are not most prevalent across the entire territory of Russia, has a statistically significant and negative effect upon the level of saving in public procurement.
- *H3:* Proportion of the population with higher education has a statistically significant and negative effect upon the level of saving in public procurement.

The second descriptive model is given below.

$$ECO_{i,t} = \beta_0 + \beta_1 * ECO_{i,t-1} + \beta_2 * REL_{i,t} + \beta_3 * HE_{i,t} \quad (4)$$

where
$ECO_{i,t}$ – the saving level in public procurement in the *i* subject of the Russian Federation (region) in the *t* period;
$REL_{i,t}$ – the population share in the i-subject of the Russian Federation that practiced the most prevalent religion in Russia in 2012 according to a national MegaFOM survey, % [1];
$HE_{i,t}$ – the share of employed population aged 25-64 with a higher education degree in the *i* subject of the Russian Federation (region) in the *t* period;
$\varepsilon_{i,t}$ – the random model error.

The calculations are summarized in Table 2.

Table 2: Efficiency model of spending public financial resources in public and municipal procurement that takes into account the factor of religious differentiation (the dependent variable – relative saving of public funds by regions of Russia)

Independent variables	2012	2013	2014	2015	2016	2017	2018
β_0 (constant)	7.002***	7.894***	4.801***	10.081***	-3.909	16.869***	4.605***
Standard error	2.176	1.614	2.405	2.935	4.370	2.647	0.564
β_1 (saving in the previous year)	0.554***	0.533***	0.438***	0.677**	0.922***	0.081	0.18***
Standard error	0.110	0.069	0.108	0.135	0.134	0.059	0.054
β_2 (religion)	-0.043**	-0.046***	-0.027	-0.055**	-0.023	-0.058***	-0.028**
Standard error	0.021	0.014	0.020	0.024	0.033	0.021	0.011
β_3 (higher education)	-0.042	-0.092*	-0.045	-0.135	0.224*	-0.264***	
Standard error	0.068	0.047	0.063	0.086	0.121	0.079	
R^2 determination coefficient	0.417	0.610	0.310	0.366	0.394	0.237	0.486
F Fischer test	18.821	41.176	11.807	15.612	17.524	8.409	12.683
Number of observations	83	83	83	85	85	85	85

*Note: *** significance at 1%, ** – significance at 5%, * – significance at 10%.*

For example, the 2017 regression model looks as follows:

$$ECO_{i,2017} = 16{,}869 + 0{,}081 * ECO_{i,2016} - 0{,}058 * REL_i - 0{,}2964 * HE_{i,2017} \quad (5)$$

Similarly to the first model, the benchmark saving in the previous period is always significant at 1% error and positive; the H1 hypothesis is verified. The factor of the population share practicing religions that are not most prevalent in Russia is significant in 5 periods out of 7 and is always negative. The H2 hypothesis is partially verified, which is indicative of possible deliberate decisions in favour of bigger or less saving and the importance of taking into account social-and-psychological factors to pursue economic policy in the field of public procurement. The H3 hypothesis about the importance of higher education is also partially verified. Fig.2 demonstrates a dynamic pattern of coefficients for the model values.

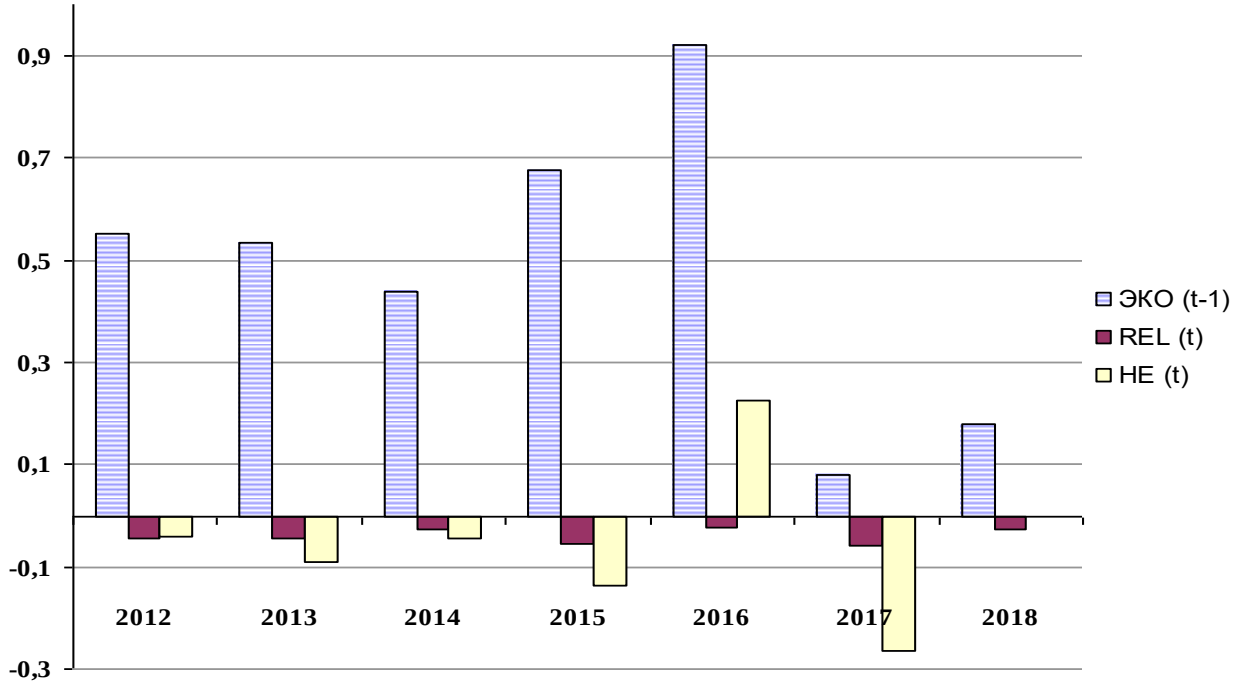

Figure 2: Pattern of coefficients for values in the regression model 2

The third model for financial resources saving takes into account institutional and behavioral factors and is includes analysis of information about the importance of local ethnic groups for achieving financial results in public procurement. The descriptive formula of the third model is presented below.

$$ECO_{i,t} = \beta_0 + \beta_1 * ECO_{i,t-1} + \beta_2 * N_{i,t} + \beta_3 * HE_{i,t} + \varepsilon_{i,t} \quad (6)$$

where
$ECO_{i,t}$ – the saving level in public procurement in the *i* subject of the Russian Federation (region) in the *t* period;
$N_{i,t}$ – the factor of the population share in the region that belongs to the most prevalent ethnic group in Russia (according to the 2010 national census)
$HE_{i,t}$ – the share of employed population aged 25-64 with a higher education degree in the *i* subject of the Russian Federation (region) in the *t* period;
$\varepsilon_{i,t}$ – the random model error.

Several interrelated study hypotheses were verified in the experiment:

- H1: The size of saving in the previous period gives a statistically significant and positive effect upon the level of saving in public procurement.
- H2: The factor of presence of population in a region that belongs to the most prevalent ethnic group in Russia has a statistically significant and positive effect upon the level of saving in public procurement.
- H3: The share of population with higher education has statistically significant and negative effect upon the level of saving in public procurement.
- The calculations are given in Table 3.

Table 3: Efficiency model of spending public financial resources in public and municipal procurement that takes into account the factor of ethnic differentiation (the dependent variable – relative saving of public funds by regions of Russia)

Independent variables	2012	2013	2014	2015	2016	2017	2018
β_1 (saving in the previous year)	0.532***	0.524***	0.427***	0.729***	0.952***	0.105*	0.197***
Standard error of the regression coefficient	0.106	0.071	0.111	0.141	0.128	0.059	0.054
β_2 (ethnicity, 2010)	0.040***	0.035***	0.022	0.020	-0.040*	0.035**	0.0105*
Standard error of the regression coefficient	0.015	0.011	0.015	0.019	0.024	0.016	0.008
β_3 (higher)	-0.017	-0.069	-0.028	-0.118	0.201*	-0.254***	
Standard error of the regression coefficient	0.069	0.047	0.063	0.087	0.120	0.082	
β_0 constant	3.136	4.277**	2.545	7.150**	-0.285	13.103***	3.118***
Standard error of the regression coefficient	2.358	1.644	2.209	3.060	4.564	3.222	0.716
R^2 – determination coefficient	0.435	0.610	0.311	0.336	0.410	0.212	0.212
F (Fischer test)	20.263	41.230	11.913	13.656	18794	7.265	11.051
Number of observations	83	83	85	85	85	85	85

For example, the regression model 3 for 2017 looks as follows:

$$ECO_{i,2017} = 13{,}103 + 0{,}105 * ECO_{i,2016} + 0{,}035 * N_{i,2017} - 0{,}254 * HE_{i,2017} \qquad (7)$$

Figure 3 shows a dynamic pattern of coefficients for the model 3 values.

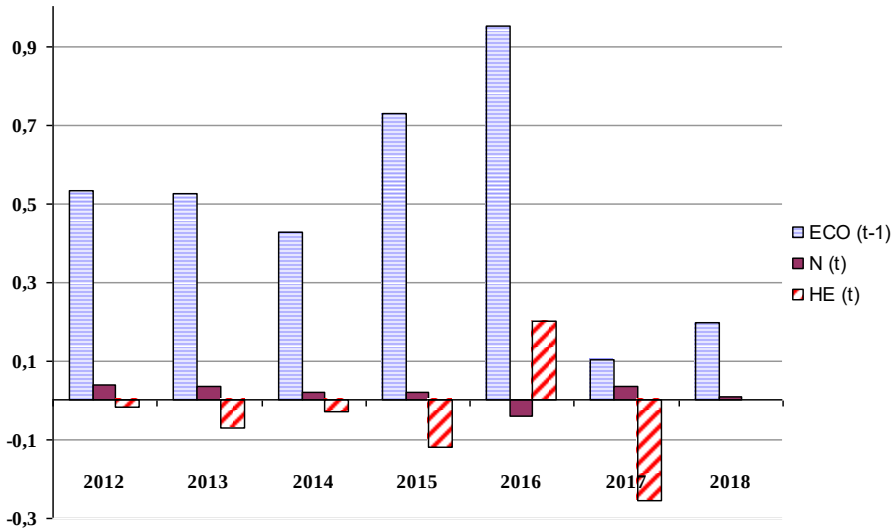

Figure 3: Pattern of coefficients for values in the regression model 3

From the Table data, one can see that the saving factor for the previous period is always significant at 1% error and positive. A significant factor in five periods out of seven is regional presence of representatives of the most prevalent ethnic group in Russia.

The higher education factor is negative and its statistical significance is decreasing compared to the previous models. According to the bar chart, not all indicators reflect sustainable trends. Therefore, the H1 hypothesis is fully verified; the H2 hypothesis – partly verified, except for the period of 2014–2016; and the H3 hypothesis is partly verified for 2016 and 2017.

4. CONCLUSIONS: CONDUCT RESTRICTIONS OF COMPETITIVE TECHNOLOGIES

1) Experimental calculations based on empirical analysis confirmed significance of the impact of conduct factors upon efficiency of funding public expenses in competitive public and municipal procurement.
2) Data regarding the mechanisms and performance of the public contractual system of the Russian Federation lead to a conclusion about systemic influence of cultural factors and prevalence of opportunistic behaviour, the knowledge level of market participants and metrics used in regulation upon efficiency of financial resources spending.
3) In economic policy, stimulation of competition on the quasi-market of public procurement cannot be considered absolutely expedient because, if we take into account behavioural transaction costs, we see that instead of financial results of procurement activity enabled by the procurement technologies and the current market environment, the outcome is systematically adjusted in view of the effect of informal institutions facilitating reproduction of the opportunistic behaviour model.

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DIGITAL TRANSFORMATION OF FINANCIAL SERVICES ON THE BASIS OF TRUST

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ABSTRACT

In the process of digital transformation of financial services, the authors give priority to the factor of trust , which is the a fundamental basis for all innovations and a sustainable development of the financial sector in the presence of the digital economy. Analysis of academic publications shows that the recent crises of the banking and global financial system are based on high risks of the traditional banking model, and these risks shall be passed on to depositors and taxpayers. Experiments in designing numerical business models within the FinTech industry, as well as the digital divisions of commercial banks are usually aimed at using artificial intelligence technologies to customize financial services, while the trust issues focus only on cyber security. However, there is little attention to other aspects of trust, such as digital personal identity, equitable distribution of wealth, confidentiality, authenticity, and accessibility. The purpose of the study is to develop a trust-based approach to digital transformation of financial services. The research methodology includes as follows: analysis of the role of trust in the process of digital transformation of financial services, developing a framework for digital business model of financial services, taking into account the trust factor, definition of ways to build a model of a reference architecture of a digital financial service, development of a design approach to a digital financial service based on a reference architecture. The approach proposed by the authors is based on building a reference model of financial services architecture, relying on open platforms for scalable building of digital financial products and the concept of data protection in distributed environments. Trust requirements shall be defined in the process of building a digital business model of a financial service. These requirements have to be taken into account and tested during the design of the digital financial product architecture. The approach proposed by the authors is receiving practical approval in a number of financial industry enterprises that are engaged in the digital transformation.

Keywords: *Digital business model, Digital transformation, Financial Service, FinTech, Trust*

1. INTRODUCTION

The general idea of digital transformation affects all the spheres of human activities, and the technologies and ways of communication systems brought to it shall transform the modern world beyond recognition. The Digital Transformation (DT), which refers to activities designed to apply digital methods of interaction of digital systems among themselves and between them and humans, shall lead to changes in traditional chains creating the added value, new business models and dramatic changes in familiar goods and services. In most cases, the use of digital technologies can increase the availability and quality of services provided; also it can create new rules that ensure a healthy competition between companies.

However, there is a need to adapt both the economy as a whole and its industries to the DT processes, and this condition predetermines the formation of the 'digital economy' by changing the system of social, economic, and cultural relations through the intensive introduction of new information technologies and the widespread use of digital resources. One of the DT leaders is the financial industry, which could be explained by the immaterial nature of financial services and the intermediary nature of the business model of financial market participants [10]. The DT capabilities of the financial domain are manifested in the process of intensive formation of a new FinTech industry, whose enterprises are widely implementing digital innovations in practice. The activity of FinTech enterprises allows to reveal one of the most important potentials of the digital economy, which is to develop the distribution economy through the formation of digital business eco-systems [12], participants of which (manufacturers, partners, intermediaries, consumers) can create more effective digital business models (DBM) through digital interactions. Creation of the DBMs that would reflect the value proposition for the consumers, and demonstrate how this offer shall be produced and delivered in the course of interaction between stakeholders through digital technologies, all this is a key idea of the DT [8]. A significant number of academic publications have been devoted to the construction of new DBMs of the financial services [1, 6, 10]. Most researchers agree that designing DBMs of the financial services is an important issue, but they differ in their approaches to solving it. According to a number of authors [2, 3,10], one of the most important aspects of the DBMs of the financial services is to ensure trust, which significantly affects their viability. However, the ways of building DBMs of the financial services based on trust have not been fully investigated and in practice they are solved through trial and error. In our opinion, the need to develop methods for designing the DBMs of the financial services based on trust is related to the following research issues:

- an insufficient knowledge of the role of trust in the context of DBM building, which limits the methodological approaches to implementing viable financial services;
- a limitedness of the framework approaches to building the DBMs of the financial services based on the trust factor, which causes the fragmentation of the proposed methods of their development;
- absence of any reference architecture for financial services that takes into account the trust factor, which leads to their low viability;
- a lack of development of methods for designing DT of the financial services based on a trust, which slows down the DT processes in the financial sector.

The purpose of this study is to develop a trust-based approach to the DT of financial services. The research methodology includes as follows: analysis of the role of trust in DT of the financial services, development of a framework of DBMs of the financial services, taking into account the trust factor, determining the ways to build the reference architecture for digital financial services (DFSs) development approach to design the DFSs based on the reference architecture.

2. THE ROLE OF ACTIVITIES IN THE PROCESS OF THE DIGITAL TRANSFORMATION OF FINANCIAL SERVICES

Financial services are mechanisms for obtaining services of a financial nature, namely, transactions with financial assets provided for by law, carried out in the interests of the consumers in order to obtain benefits or save their real value. These operations include lending, insurance, capital management and pension savings, securities trading, money transfers, etc. These operations are performed by banks and financial organizations operating in the financial markets. During the last decade, the financial industry has been significantly transformed, which was caused by two circumstances: the response to the 2008 global financial crisis, which had led to the global economic crisis, as well as digital innovations caused by the intensive

development of digital technologies. However, the need to transform the industry is based on a fundamental problem of trust. As a result of the financial crisis, which was had a structural nature, the shortcomings of the traditional banking business model were realized, due to its excessive 'ease' [10], which allows shifting the main risks to depositors and taxpayers. A decrease in public confidence in the principles of financial activity has led to a stricter legislative regulation of the banking sector and an active search for new approaches to the implementation of financial services. This was facilitated by the widespread use of digital technologies in the financial sector. The emergence of the FinTech industry, which in many countries operates in a regulatory sandbox mode, was associated with the need to maintain innovation and growth, as well as to prevent future crises [6]. At the same time, newly designed digital financial products, on the one hand, must not contradict existing legislation, and on the other hand, are partially or completely exempt from additional legislative regulation. The development of FinTech enterprises has led to the destruction of the foundations of the existing financial system and the emergence of a new type of risks, namely cyber risks, as well as a new problem, namely ensuring trust in the digital environment. Issues of trust are widely discussed in the scientific literature on the financial sector [2, 3, 6, 10] Two areas of discussion can be underlined as follows: the role of trust in the financial sector and ensuring trust in the process of DT of the financial services. In the 'Brockhaus and Efron Encyclopaedic Dictionary', the trust is understood as "a mental state by virtue of which we rely on an opinion that seems to us authoritative, and therefore we refuse to independently investigate a question that can be investigated by us." According to [4], the trust broadly speaking can be understood as "a confident connection with the unknown". At the same time, the trust is closely linked to the risk analysis and is based on an assessment of the probability of a positive result. In the financial sphere, the trust is of great importance. In fact, the trust is at the heart of the monetary system. Money, as a universal measure of value, plays an important role in the economy, allowing you to convert goods, perform savings, make payments, and carry out foreign trade operations. However, all this is based on the trust in the government, on whose orders the Central Bank has to emit banknotes. Therefore, there has always been a demand on the part of society for government structures to ensure the stability of the financial system, although the lessons of the financial crises of recent years show that this is not always met, which leads to a breakdown of the trust. In the words of Claudio Scardovi: "we can say that money and the global financial system are ultimately built on faith and based on trust" [10]. The obvious shortcomings of the traditional business model of the banks, which carries great risks to the stability of the economic system, can be eliminated as a result of the DT activities. At the same time, the implementation of DBM in distributed digital environments, which allow generating more value for customers, on the one hand, creates new problems related to the need of maintaining digital trust, on the other hand, it opens up new opportunities that radically address the issue of trust and ensure the stability of the financial system. Due to a rapid dematerialization of the financial sector through the digitalization of money, business processes, document management and customer interaction technologies, all financial institutions are forced to increase investment in IT risk and cyber-risk management in order to preserve their cyber capital and to maintain the digital trust. However, it is not just the cyber crime factor that affects the digital trust. Digital technologies such as cloud computing, Big Data, social networks, IoT, and mobile computers play a huge role in digital products. In this case, data, including personal data, shall be stored digitally, processed using algorithms based on artificial intelligence technology, and the work functions shall be performed by robots. All these aspects affect the level of the digital trust, raising questions related to the transparency and confidentiality of data, the validity and controllability of the use of algorithms, and the impact of robots on job opportunities and employment [7].

Analyzing trust issues, Rachel Botsman identifies three stages in the development of the trust approach:

- *The local trust* that is prevailing at small communities and based on personal connections;
- *The institutional trust*, prevailing at the industrial age and based on the activities of intermediaries and regulation authorities;
- *The distributed trust* based on connections among people supported by networks, systems, and platforms [4].

The distributed trust, which is formed in the process of becoming a peer-to-peer economy, is based on the trend when people begin to trust people more than they do concerning businesses and institutions [7]. In relation to the collaborative economy, Botsman has shifted the model of the "trust stack", the essence of which is a three-stage process of building trust: 1) a trust in an idea, 2) a trust in a platform, 3) a trust in another person (or in some cases, in a machine or a robot). In [9], when considering the platform as a social contract (PaaSC framework), it is concluded that the viability of the platform shall be based on trust, which relies upon a coordination of the interests of stakeholders, a support by stakeholders for the existence of the contract, economic and social justice, and a transparency of expectations. Technologically, ways to ensure trust in distributed digital environments can be provided by using Blockchain technology and smart contracts. Due to the fact that the implementation of DFSs is essentially based on a platform business [16], the 'trust stack' model, the PaaSC concept, and Blockchain technology can determine ways to build trust-based DFSs. To do this, it is necessary to consider the impact of the trust factor on the business model of financial services and their architecture.

3. A FRAMEWORK FOR A TRUST-BASED DIGITAL BUSINESS MODEL OF A FINANCIAL SERVICE

The business model is one of the key elements of the business architecture that allows you to demonstrate the business concept: competitive advantages and key success factors of a company, as well as how the value proposition is produced and delivered to the consumer. In the context of a DT economy, there is a transition to the DBMs that reflect the principles of doing business in the digital space. Approaches to building a DBMs are described in a number of scientific sources, for example, [5, 11, 15]. A special feature of DBMs is their fragility due to rapid changes in digital technologies, as well as due to turbulence of digital business ecosystems, manifested in the synchronous dynamics of stakeholders. Approaches to building the DBMs should take into account the specifics of doing business in digital distributed environments. Therefore, the structure of the business model is undergoing significant changes compared to traditional approaches, such as the Osterwalder's Business model canvas. According to [5], the main components of the DBMs are: value proposition, interface, service platform, organizational model, and revenue model. The attributes of these components are described in detail in the Unified Framework for Business Modelling VISOR. The framework describes a set of attributes for each component that reveal its content. This framework is unified in relation to building business models in the digital space, but it does not take into account the features of the DFSs, in particular, the key role of the trust. Recently, the flow of publications devoted to the design of the DBMs of the financial services has increased. In [2], it is proposed to switch to a client-centric business model of banks, while the trust is considered as one of the factors. In [10], a DFS business model is considered. The components of this business model include as follows: data and information management; applied analytics and artificial intelligence; interconnection and connection management; development and management of new business solutions; trust management. These publications confirm that the trust should be taken into account when designing the DBMs of the financial services. However, the business model components used in these publications do not take into account the specifics

of digital business in distributed environments. According to the authors, it is advisable to adapt the VISOR framework in order to build the DBM frame for financial services, adding the 'trust' component that is necessary for designing of the DFSs. This raises the question of defining the attributes of this component. Based on the 'trust stack' model described above, the following characteristics are proposed as trust attributes: openness, reliability, information security and reputation. The openness characterizes the completeness and availability of all information related to the financial service, as well as a user support, which ensures the trust in the 'idea'. The reliability reflects the performance of the platform and provides a confidence in the platform. Another characteristic that provides confidence in the platform is the information security, which allows you to protect data and contract terms from cyber threats. The reputation is aimed at maintaining a trust in a person at the top of the 'trust stack'. When developing a DBM framework for financial service, you should also determine the structure of the external environment that affects the business model. In connection with the financial services, the following elements of the external environment should be highlighted:

- business needs that affects the revenue model and determines the business decision;
- customer experiences that reflects customer needs and is used in marketing mechanisms;
- innovations, including digital ones, which put pressure on technological solutions;
- the requirements of the regulators defining the rules and regulations, as well as influencing organizational decisions.

Figure 1 shows a framework model for designing the DBMs for a financial service based on the trust.

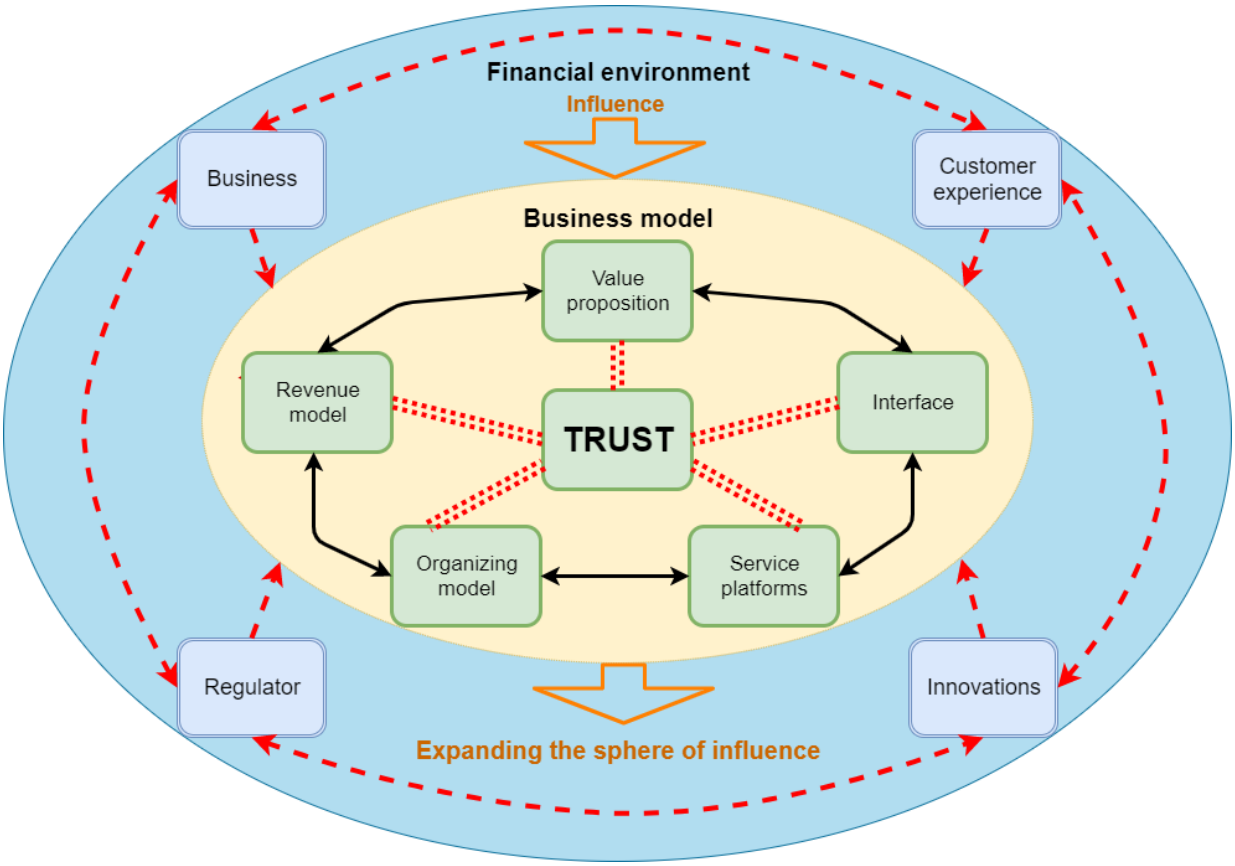

Figure 1: A framework for a trust-based digital business model of a financial service

This framework can be used to design DBMs of the financial services, as well as in the process of building the reference architecture of the DFSs needed to implement the DT.

4. DETERMINATION OF WAYS OF CONSTRUCTION OF THE REFERENCE ARCHITECTURE OF FINANCIAL SERVICE TAKING INTO ACCOUNT THE TRUST

The reference architecture is used in projects aiming an enterprise architecture development and in software development projects as a mechanism for reusing a pre-developed effective solution that meets specified regulatory properties. Using a reference architecture allows us to improve project communications and to reduce costs. Due to the fact that DFSs are developed on financial platforms, the reference architecture of the financial service should highlight the platform as an element of the architecture. A financial platform is understood as a combination of infrastructure product technology and financial instruments that provides the conditions for the functioning of the financial service being created. The solution proposed by The Open Group in the 'Open Platform 3.0' standard [14], the main idea of which is the implementation of services based on open platforms, can be used to develop the reference architecture of the DFSs. In this case, the platform acts as a service (Platform as a Service, PaaS), the implementation model of which is determined by a number of financial solution providers that provide the required hardware, software, or resource support to the financial service. It must be taken into account that third-party providers can be both internal services and various external integrations. The main idea of the PaaS is to minimize the overhead costs for implementing business requirements and infrastructure when developing solutions. However, the reference architecture of the open platform in its initial form does not meet the requirements for a DT of the financial service, as it does not explicitly take into account the trust factor, providing confidence that contracts would be observed at all stages of the financial service life cycle, that users and financial service providers would be safe and be able to take advantage of all available financial opportunities, that exist today and are expected in the future. Therefore, the reference architecture of the open platform has to be modified. In the 'Guide Trust Ecosystem' proposed by The Open Group [13], a number of criteria has been listed to ensure a confidence in the design of architecture systems in deperimeterized environments. Herewith, the architecture has to consider three components of the trust:

- The risk management, which involves assessing risks and creating a risk profile that is used to implement the solution within acceptable limits. This entails that the more accurate and multifaceted the assessment of potential risks is, the better the information for decision-making can be;
- A trust taxonomy that defines the main components involved in the interaction, such as the data that parties are willing to share when interacting in a digital ecosystem. This allows us to create rules of cooperation that will allow stakeholders to work effectively and safely under the conditions stipulated by the contract;
- The contract lifecycle management that provides all the stakeholders with an acceptable level of confidence that the financial service would be implemented at mutually agreed security levels and fully implemented.

Using these components to transform the reference architecture of the open platform, we can get a reference architecture of the DFSs that meets the trust criteria, as illustrated in Fig. 2.

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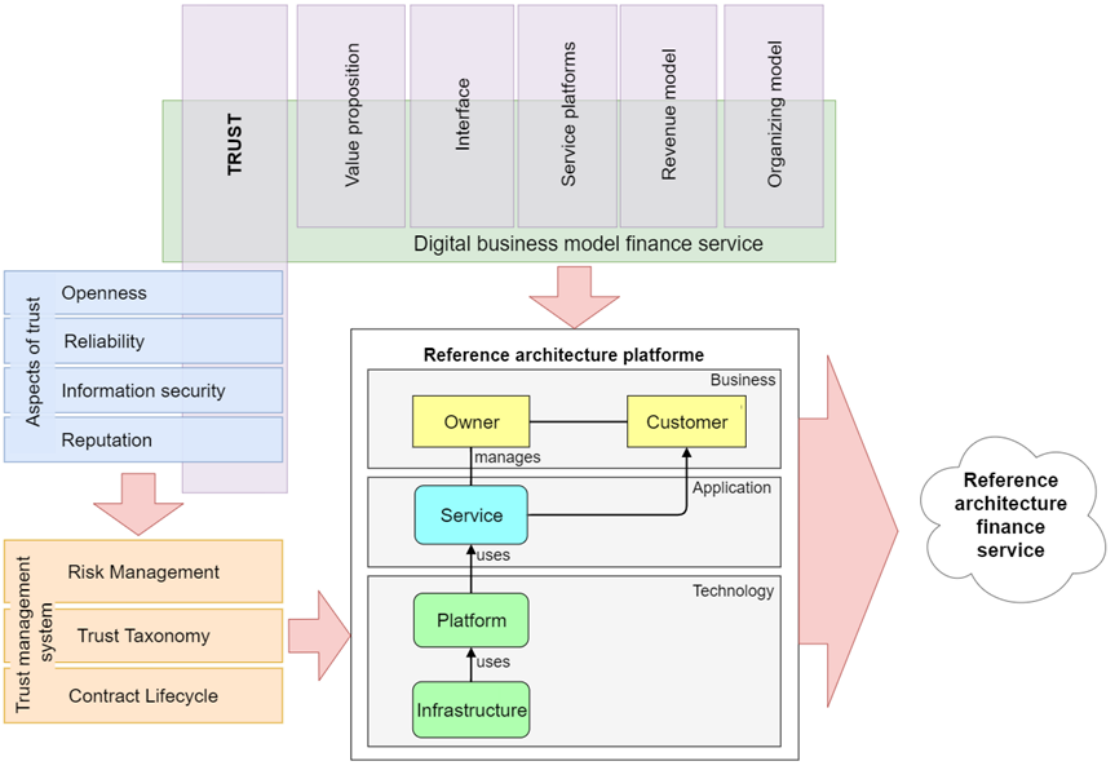

Figure 2: Taking into account the trust factor when building the reference architecture of digital financial services

When implementing the DFSs, the higher the trust that the financial platform provides, the more participants will be willing to use it to conduct transactions or exchange confidential information within the framework of the relationship established by the contract.
A trust-based reference architecture will allow you to design DFSs that will not only meet business needs, but also influence how trust is formed in the financial environment.

5. AN APPROACH TO DESIGN OF A DIGITAL FINANCIAL SERVICE BASED ON TRUST

An approach is a specific sequence of steps to achieve an intended result. The main task of the approach to the design of DFSs can be considered to be the transformation of existing financial services, and the creation of new ones. The DFSs should be flexible and ready for changes in the turbulent financial environment.
The authors define the expected sequence of stages, the execution of which will lead to a reliable result, as follows:

- Defining the framework of the developed solution that takes into account the influence of the external environment;
- Building a DBM for a financial service;
- Development of a DFS's architecture that takes into account aspects of a business model.

At the stage of defining the solution framework, business needs and opportunities for implementing all aspects of the financial service business model are identified, such as value distribution, access, complementarity, information security, etc. As a result, a scenario should be generated that sets the input parameters of the financial solution being developed (a product, a service, or a platform).

At the next stage, the DFS business model has to be built on the basis of the DBM framework, considering the identified frameworks of the financial decision. The process of building a business model can be subject to a transformation of an existing business model or a creation of a new innovative solution. At the stage of building a business model, the key task is to fully take into account the influence of external drivers and evaluate all aspects of the DBMs of the financial service based on criteria. The final stage is to build the DFS architecture based on the reference architecture. In this case, the architectural solution must necessarily consider three components of the trust:

- risk management;
- taxonomy of trust;
- managing the contract lifecycle.

This approach to DFSs' design is based on the trust and is conditioned by a set of specific features defined by the financial environment. An important role at all stages of the DFS's design should be given to implementing all aspects of the business model, as well as trying to find a balance in case of incompatibility. The proposed approach provides for the development of a methodology for managing the process of implementing a financial service, which can provide an opportunity to constantly improve a business solution, adapting it to the introduced value of the DFSs and the ability to operate with the trust among the participants in the interaction. The proposed approach will be useful both for the initial design of the DBMs of the financial service and for its continuous improvement.

6. CONCLUSION

In the course of the study, the authors have found: 1) The trust is a key factor in the functioning of the DFCs to ensure their viability; 2) The DBMs of the financial service shall include a trust component in order to maintain reliability, openness, information security and reputation of the financial business; 3) The existing reference architecture of the open platform does not take into account the trust factor, which reduces the possibility of its use in the financial sphere. Based on this, the authors: have proposed a framework based on the trust of the DBMs of the financial service; have described the process of forming a reference architecture that allows us to design DFSs that provide support for the trust. Using the DBMs' framework for the financial service and the reference architecture allows you to design viable DSFs. The approach proposed by the authors to the Central Bank of financial services is receiving a practical approval at an enterprise in the financial industry.

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ANALYSIS OF CULTURAL AND SCIENTIFIC EVENTS ON PAGES OF THE UNIVERSITY JOURNAL UNIVERSITAS

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ABSTRACT
The subject of this paper is the analysis of journal articles on cultural and scientific events. Data for this analysis was collected from the university journal Universitas, which was a journal of the University in Split at its beginning, and afterward became a journal of the University of Split and Zagreb. This journal covers subjects from the area of science and higher education, it is published monthly and it is also being published as a special enclosure in Jutarnji list and Slobodna Dalmacija. This paper deals with this analysis because we are trying to determine the mission of the University, i.e. how is it possible to inform on events organised by the University through the journal. Conducted analysis showed that the University promotes science, culture and sports and it is not only a place where we acquire new knowledges as we usually perceive it. The paper is divided in four chapters, i.e. on theoretical and analytical part. First chapter describes the journal, as well as two universities publishing it. A brief history and goals of the University of Zagreb and then of Split are shown. Second chapter is a theoretical part on the notion of the event and its division, which is crucial for understanding of this paper. Third chapter is about the methodology. For this paper, we used the journal content analysis. Events are being divided on cultural, sports and educational. Last chapter is the analytical part showing the final data obtained through this analysis of articles on cultural and scientific events on pages of Universitas from its first until 121st issue, i.e. from 2009 to 2019.
Keywords: *event, university, culture, science, Split, Zagreb*

1. INTRODUCTION

An event could be anything happening around us, but it is necessary to draw the limit between such events and those analysed in this paper. They are considering being some sorts of manifestations, i.e. planned activities that bring together a large number of people with the goal of entertainment, informing and education. This paper is focused on events at universities in the Republic of Croatia. This comprises conferences, manifestations, exhibitions, plays, lectures, anniversaries, promotions, symposiums, meetings and similar. Those events are represented on pages of the University journal Universitas, generally published monthly and which has 121 issues. Subjects of those events are diverse, but authors are interested only in cultural and scientific topics. Science is an important part of each higher education; therefore a lot of the significance should be attributed to it and to scientific events as well. Also, journal state to be scientific primarily and we will try to examine it. Culture is nowadays a poorly represented topic in journals, therefore we will try to find out how many articles on this subject

were published in this journal, and as a result we will come to the conclusion how relevant this subject is for this journal. Other topics in this journal might simply be divided on sport and education with several subdivisions, but that is not the aim of this paper. The aim of this paper is to find out topics of events covered in this journal, to which extent the culture and science are being represented, which genres of articles on cultural and scientific events are the most represented and the find out whether a journal structure changed from its first until its last issue.

2. ABOUT JOURNAL AND UNIVERSITIES

University journal Universitas is a common media project of Croatian universities in Zagreb and Split. This journal covers subjects from the fields of science and higher education. It is published monthly, and it is also published as a special enclosure in Jutarnji list and Slobodna Dalmacija newspapers. Established in 2009, this journal has 121 issues (University in Zagreb. Visited on 23/11/2019 from http://www.unizg.hr/novosti-i-press/universitas/).

2.1. University in Zagreb

University in Zagreb is the oldest and the largest university in Croatia, established in the second half of 17th century. It has an important role in the preservation of national, cultural and scientific heritage, as well as in the improvement of international recognition of Croatian higher education. History of the University starts in Medieval Ages when bishop Stjepan II Babonić and Augustin Kažotić tried to establish the study of theology and philosophy. Real origin of the University in Zagreb can be dated on September 23rd 1669, when its status and privileges of a university institution have been attributed to it by the diploma of Hungarian and Croatian king Leopold. Subsequently, the University took various forms. Organisational forms of this University changed several times, and finally in 1861 Croatian parliament brought the law on the establishment of the University in Zagreb. Some of the first established faculties were law, theology, philosophy and medicine. After the World War One, a bigger number of faculties have been established at the University, as in example the Faculty of Economics and Forestry and Veterinary faculty. The University of Zagreb comprises 29 faculties, 3 academies, one interdisciplinary study and one university centre, as well as the University IT centre and student centres in Zagreb, Sisak and Varaždin. In 1999, the University introduced the ECTS transfer system (Sveučilište u Zagrebu**.** Visited on 23/11/ 2019.from: http://www.unizg.hr/o-sveucilistu/sveuciliste-jucer-danas-sutra/povijest-sveucilista/). Constituent units of the University in Zagreb offer a possibility to acquire an academic degree, from bachelor's degree to master and PhD degree in biomedical and biotechnical sciences, in social sciences and humanities, natural, technical and art science fields. At the University in Zagreb, study programmes on undergraduate, graduate and postgraduate degree are run within the Bologna process. Some studies are integrated undergraduate and graduate study programmes, and the University offer some professional study programmes too. Most of their students are full-time students, while some study programmes are opened for part-time students. University offers different types of a lifelong learning (Sveučilište u Zagrebu. Visited on 23/11/2019, from: http://www.unizg.hr/studiji-i-studiranje/studiji/). University has several important goals. One of them is to develop in a comprehensive university with a wide range of study programmes. Second goal is to keep its place of a leading research university in South-Eastern Europe, but also on the international level through the excellence. It will always function as an initiator of technological, economic and social development of Croatia. Following aim is to develop study programmes necessary to society and economy and to provide different forms of lifelong learning to the citizens in its country. It will also supervise the respect of moral and ethical principles, as well as stimulate student mobility through different international exchange programmes.(Sveučilište u Zagrebu. Visited on 23/11/2019.from: http://www.unizg.hr/o-sveucilistu/sveuciliste-jucer-danas-sutra/misija-i-vizija-sveucilista/)

2.2. University in Split

University in Split was established in June 1974. Some of first and most significant faculties were Faculty of Electrical Engineering and Naval Architecture, Faculty of Chemistry and Faculty of Law. Several years later, faculties of Economics, Medicine and Engineering were established. There are more than 20.000 students at this University consisting of 11 faculties and one art academy. There is 150 study programmes in fields of art, social, natural sciences, in humanities and in technical and medicine science fields. University deals with the research in different scientific fields, such as natural sciences, social sciences, history, etc. University in Split encourages its students to be involved in student exchange programmes through different sorts of mobility, of which Erasmus is the best known programme. University is also involved in numerous international projects and organizations (Sveučilište u Splitu. Visited on 25/11/2019, from: https://www.unist.hr/sveuciliste/o-sveucilistu/sveuciliste-danas). This is a medium size institution according to the EU standards and it is considered to be a leading institution at the regional level with Mediterranean orientation. Its aim is to become recognisable within Europe by its cultural heritage and its material inheritance. This is the leading university in transfer of the knowledge necessary for a faster economic development and ecologically acceptable social development. It is also directed on a development of its students, but also on the improvement of quality within teachers and other employees who contribute to the creation of all the important processes at the University. University in Split promotes moral, ethical, social and economic principles with purpose of development of the Republic of Croatia and the EU. Mission of the University is to contribute to the society through the development of higher education and lifelong learning, scientific and research work, artistic activities created under high ethical standards. It considers the knowledge to be a public good, which it tries to improve through incessant researches and innovations. Leading activity of this institution is to motivate its students to seize the opportunity of various educations and motivate them for a research work, leadership in society and new findings. The most important idea of this institution is the one describing the man as a whole social being and that the University should enable to men a development on all levels and numerous international experiences, as well (Sveučilište u Splitu. Visited on 25/11/2019, from: https://www.unist.hr/sveuciliste/o-sveucilistu/misija-vizija-i-strateske-smjernice).

3. EVENT

There are many definitions of an event, and one of them says that it is a gathering of people with a specific reason in a specific time. Event is often being associated to relaxing, entertainment and as an interruption of the usual everyday life and it represents an unusual experience. This phenomenon in society is used by the people to satisfy different needs or it is used only as a relaxation act in some cases. Some of its generally accepted features are that events are expensive, they represent a unique experience, they do take much time, require a detailed planning, carry a high financial risk and they are often being held once. An event should satisfy all of its guests, which is not an easy task. Organisation of a successful event is very demanding, challenging, but also exciting (Van Der Wagen, Carlos, 2008, pp. 3-4). An event should have unforgettable result regardless its nature; a promotion, a sport event or a fund raising. Events can have a different duration. Some of them last couple of hours (concerts, weddings, plays and similar), several days (festivals or seminars) or couple of weeks (holiday themes in shops). Each event has its beginning, goal and its end. Participants of an event might know each other or not, but they create memories together. There are several divisions of events. Some divide them according to their form, size and content. Considering their form and size they can be local, big, mega events, etc., and according to their content they can be cultural, sport and business (for more details on events and their planning see Pavelin, Goran, 2017, pp.187-266).

Considering their size they can be divided on mega events, regional events, significant events and smaller events. First ones are the largest, and they seek to attract international attention. Those events are in example World Cup in football and Olympic Games. First of all, those events have a huge influence on tourism and economy of the state where they are held. This influence might be positive in a context of the destination popularity growth, but also negative and drag the country into debt. Regional events tend to wake up tourists' interest for a particular region. An example for this would be FAN Fair, the biggest festival of country music, held once a year in Nashville in the USA. Significant events attract many people and generate big revenue from tourism. Those might be trade shows, conventions and big gatherings. Bigger cities have congress centres used for such events. Smaller events are the most frequent and they group meetings, exhibitions, conferences, award ceremony, parties, celebrations and many events within local communities. Events can be divided considering their type, like in example sport, entertainment, cultural or marketing events, conferences, festivals, family gatherings and charity events. Sport events appear everywhere and they comprise all sorts of sport. Entertainment and culture might attract many visitors. Concerts are the most frequent and favourite type of those events. Marketing events require a lot of financial resources. Such an event would be a launching of new products that often appear to be expensive. Festivals are very popular, and especially wine or food festivals. Family gatherings are anniversaries, birthday, weddings and similar (Ibid, pp. 5-17).

4. METHODOLOGY

For purposes of this paper we used the content analysis described below. For the examination of a certain problem both quantitative and qualitative methods can be used. Qualitative methods do not use numbers to express the researched. Observation, interview, discussion or similar are some of them. Data obtained through those methods cannot be statistically shown or mutually completely comparable. Those analyses find their best application in interpretation of manifested happenings in comparison of some phenomena. Using those methods, a researcher can include its own opinion during the interpretation of the analysed phenomenon. Many empiricists do not acknowledge the objectivity to those methods and consider that they should be verified through a quantitative method. Sometimes they are considered inadequate and only quantitative methods are being acknowledged. It is considered that qualitative methods can only be applicable in the domain of philosophy and similar fields (Zelenika, 1999, p. 151).

4.1. Aims and research questions

Aims of the article analysis on university events are:

1. Content analysis will determine how much space in Universitas was dedicated to cultural and scientific events. This is our main goal because we want to find out how much importance is attributed to cultural events in this journal. Nowadays people show a bit of interest into cultural events and they are becoming rare in our society. Therefore the journal also dedicates less space to this topic. Attendance of a play or art exhibition used to be a frequent occurrence, but today it became a rarity. This aim will also be determined through analysed articles on these topics.
2. Content analysis will determine a ratio between cultural and scientific event genre. With this aim we are trying to determine the diversity of genres represented in this journal. University journal who determined to process serious topics of culture, science and education should deal with professional genres without today's „hybrids“. These aims will prove a presumed seriousness of the journal based on the articles' genre.

3. Content analysis will determine the most represented events in this journal. It is important to determine a character of events the journal covers, because that speaks about features of a journal. These aim also tries to find out whether there is or not a diversity in the journal and diversity at those universities as well.

Following research questions stem from the above mentioned aims:
1. How much space is dedicated to cultural and scientific events in Universitas journal?
2. Which is the ration between cultural and scientific events according to genres?
3. Which type of events is the most represented?

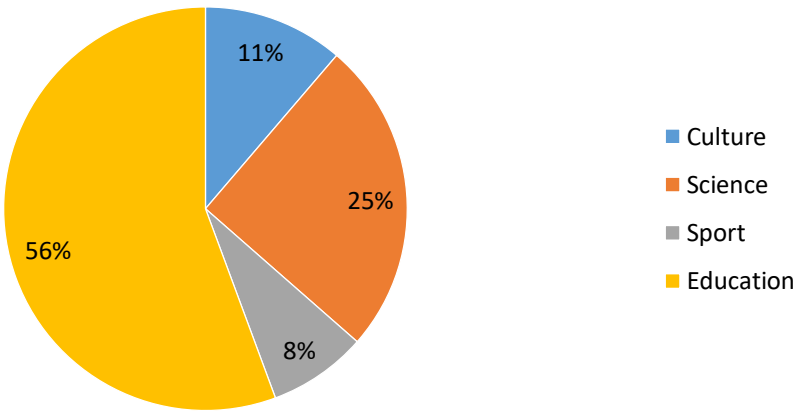
4.2. Method

The method we used for purpose of this research and while answering to those questions was the content analysis method. Zelenika states that the simplest definition of a method would be as follows: „Methodology is a science on methods of scientific research.“(Ibid, p. 310). According to the same author, a method is „... planned process of questioning and researching a phenomenon, i.e. a mode for the realisation of an aim in the field of philosophy, science, politics or in an practical area.“(Ibid, p. 313). Content analysis method is explained as a division of complex notions or conclusions in less complicated parts and elements, and as a research of each element separately and in comparison to others. According to Berelson, one of first detailed definitions of the media content analysis is: „Content analysis is a research technique for an objective, systematic and quantitative description of a manifested communication content (Berelson, 1952, p. 18). However, this definition encounters a number of objections. Therefore Krippendorff offered a better definition: „Content analysis can therefore be redefined as the use of replicable and valid methods in specific conclusion making from a text according to other states and features of its source.“(Krippendorff, 1969, p. 11).

5. RESULTS OF THE RESEARCH

In this chapter we will show results obtained through the analysis of articles on cultural and scientific events on pages of Universitas from its 1st until 121st issue. In all 121 issues, there have been 2111 articles on the subject of events, of which 238 on cultural events and 532 on scientific events. 167 articles out of a total number were sport articles, while remaining 1175 articles can be classified as educational.

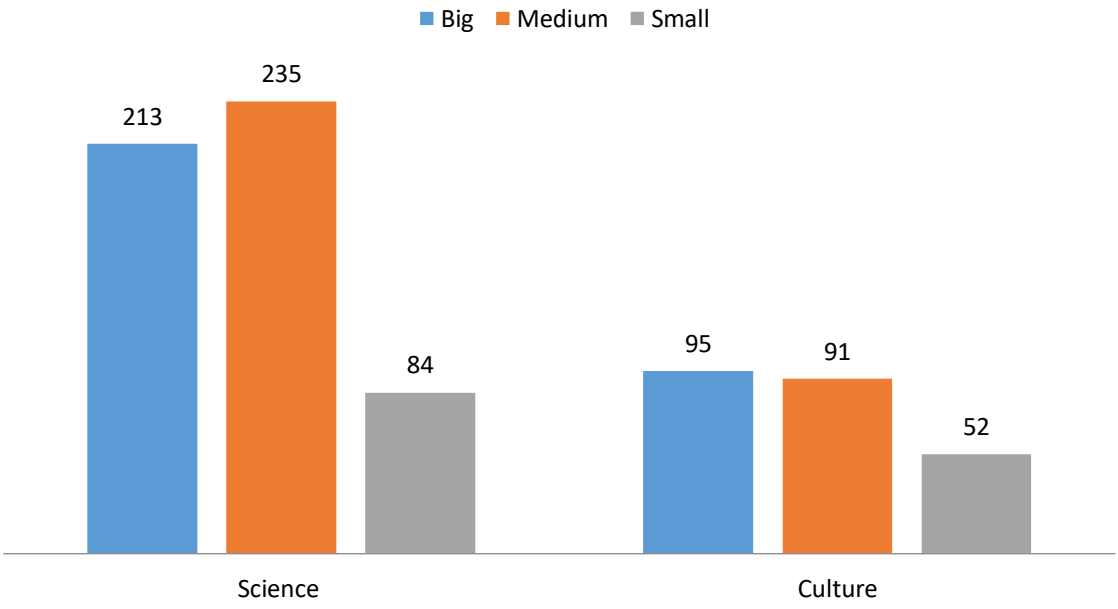
Chart 1: Article analysis considering the subject



Source: authors' interpretation

From the analysis of all articles we can make a conclusion that the biggest part of them was dedicated to education, i.e. 56% of them. Within this category articles might be divided into several subcategories. Some of them would be economics, religion, law and politics. Although these categories have not been analysed in detail, authors realised that the biggest part of articles was written on the subject of economy, law, and less was written about politics and religion. The category of culture includes articles on art, history of art, architecture, fashion, music, theatre and movie. Science includes events related to technology, medicine, biology, inventions, chemistry, physics and math. There have been 11% of articles, i.e. 238, while sport was represented with the smallest percentage, 8%. Science was represented by 532 articles, i.e. 25%. Therefore, 770 articles out of 2111 has been analysed in detail for the purpose of this paper. It is possible to make a conclusion that more articles were written in the area of science than in the area of culture, and considering all articles taken together we can state that no area was neglected. Science occupies ¼ of all events, which is quite fair given the diversity of other topics. Culture could be represented with bigger percentage, because we are dealing with universities here, but on the other side the journal declares itself as specialised in science and higher education, so we might say that culture occupies enough space in this journal. Following chart shows the size of analysed articles.

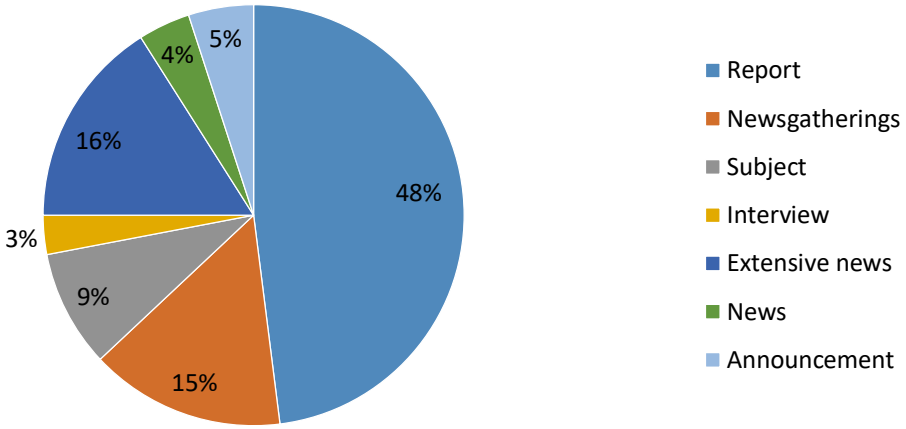
Chart 2: Analysis of articleson cultural and scientific events regarding their size



Source: authors' interpretation

Articles are divided in small, medium and big. Small articles are those that occupy 0 to ¼ of a page and big articles those who occupy more than ½ of a page. The biggest part of 770 analysed articles was medium size, i.e. 326 articles (42%). There was 308 big articles (40%) and 136 small ones (18%). In the area of science there has been the biggest number of medium size articles, 235 of them (44%) and 213 big articles (40%). There was the smallest number of small articles, i.e. 84 (16%). We can make a conclusion that articles on scientific events are very important because those were mostly big or small articles. Big articles are the most represented in the area of culture, 95 (40%) and 91 medium size articles (38%). This means that remaining 52 articles (22%) were small. We can make a conclusion on the basis of this data that articles on cultural events were extensive and important, because they were mostly big. Authors notices that since its 86th issue, big and medium size articles prevail. Following chart shows the division of articles according to their genre.

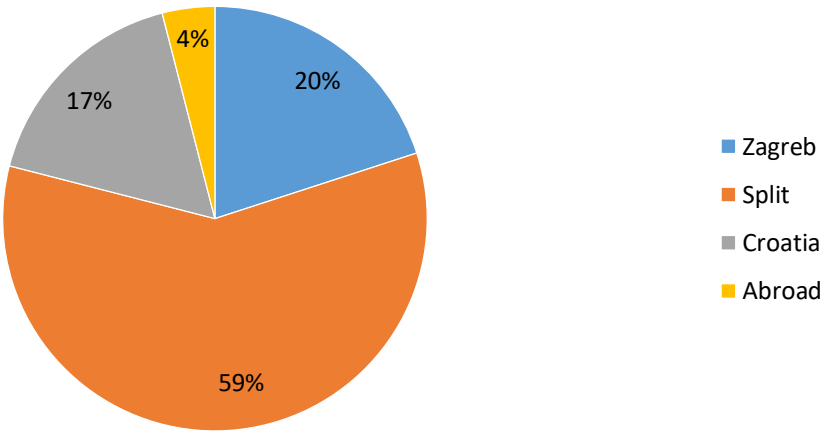
Chart 3: Analysis of articles on cultural and scientific events according to their genre



Source: authors' interpretation

Genres were divided according to simple forms represented in this journal, while nowadays articles are generally being written using hybrid genres (combination of two or more genres). Authors conducted the analysis according to what they learned at the course Media genres on graduate studies programme in Journalism and Public Relations at the University of Zadar. The report was the most common genre among 770 articles on culture and scientific events. This is the case with both types of events. There has been 368 (48%) reports, 127 (16%) extended news and 117 (15%) newsgatherings. The interview was represented in a smaller extent with only 23 articles (3%). Furthermore, there have been 72 topics (9%), 35 announcements (5%) and 29 news (4%). A report is very serious and professional journalistic genre and it is very popular. Therefore, this really is a professional journal. The news is very concise genre and it was not very represented, while an interview takes much more time, money and expertise so it is not a desirable method.

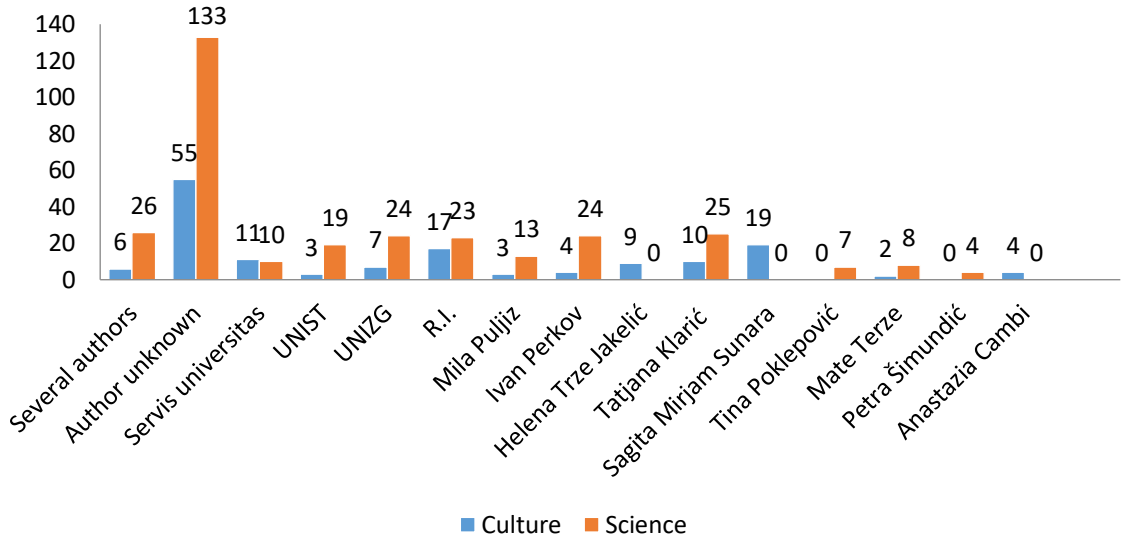
Chart 4: Analysis of articles on cultural and scientific events according to the geographical focus



Source: authors' interpretation

Geographical focus of articles in this paper was divided on: Zagreb, Split, Croatia and abroad. Zagreb and Split are related to cultural and scientific events in these towns. Croatia includes articles on events in other Croatian towns. Abroad stands for events in other countries where Croatian citizens participated. From the above shown data we can make a conclusion that the biggest part of articles was related to events in Split, 452 (59%) out of 770. There has been 152 covered events in Zagreb (20%), 130 (17%) in Croatia and only 36 (4%) abroad. Reason for this is the fact that until its 62nd issue this was only a journal of the University in Split. Since that issue this is a common journal of this University and the University in Zagreb and it reports in equal measure about events in both towns. Following chart shows the article analysis according to its author.

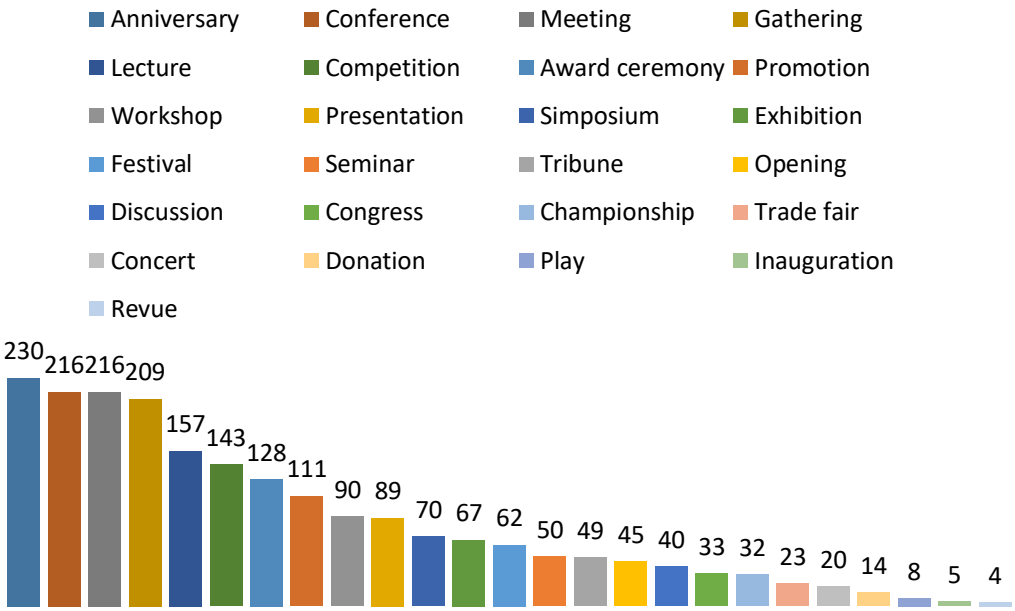
Chart 5: Analysis of articles on cultural and scientific events according to their author



Source: authors' interpretation

All of the scientific and cultural articles, 770 of them, were analysed according to their author. We showed above the most common authors and their fields. We can state, based on the analysis, that biggest part of authors is unknown, i.e. 55 articles on culture and 133 on science. Universities were also signed as authors, so UNIST was the author of 3 articles on cultural events and 19 articles on scientific events. UNIZG had 7 articles on cultural and 24 articles on scientific events. Servis universitas is related to news of the University in Split, and this signature was used until its 62nd issue, when it became Croatian university journal, and not exclusively the journal of the University in Split. Authors noticed that since its 84th issue, each article has its author, while earlier the author remained unknown very often. R.I and Tatjana Klarić were authors with the most articles. Klarić signed 10 articles on culture and 25 on science, while R.I. signed 17 cultural and 23 science articles. Ivan Perkov focused on science and wrote 24 articles on this topic and 4 articles on a cultural topic. Sagita Mirjam Sunara was committed to culture with 19 articles. Mila Puljiz wrote mostly on science (13) and 3 articles on the topic of culture. Tina Poklepović wrote exclusively on science and Anastazia Cambi on culture (4). Mate Terze mostly wrote on science (8) and has 2 articles on culture. Petra Šimundić wrote only on science (4) and Helena TrzeJakelić on culture (9). All remaining articles have authors whose names appear only once or twice. From the above mentioned we can make a conclusion that Universitas gives an opportunity to write to many individuals. Main authors of articles on the subject of science are TatjanaKlarić and Ivan Perkov, and main authors of articles on the subject of cultural events R.I. and Sagita Mirjam Sunara.

Chart 6: Analysis of articles according to the type of the event



Source: authors' interpretation

This paper analysed type of the event for each article. From the above shown data we can make a conclusion that the most common event type was an anniversary in all of the event subjects, and it appears in 230 articles out of 2111. Through the analysis of cultural and scientific events we stated that 27 cultural and 29 scientific events were anniversaries, therefore this was not a common type in these areas. Conference and meeting are following most common types of events, there have been 216 events covered in journal. Conference is second most common type of the event and is represented by 91 articles with scientific subject. Furthermore, there have been 209 articles on gatherings, and this was the most common type of the event regarding scientific subjects (97). There were 143 articles on competition, only 3 in the field of culture and 17 in the field of science. Competitions were the most frequent in the sport field, as well as championships, which were not present in focus themes. There were 128 award ceremonies, 5 cultural and 30 scientific. There were also 111 promotions, mostly in the field of education, 17 in culture and 22 in science. Workshops were represented in 90 articles, 16 cultural and 28 scientific. From the total number of 89 presentations, there was 8 of them in culture and 23 in science. Least represented types of events were revues (4), inaugurations (5), plays (8), donations (14) and concerts (20). Revues and plays were represented only within cultural events. We can make a conclusion that the most represented subjects in all 2111 articles were anniversaries, conferences, meeting and gatherings, and least represented revue, inauguration, play and donation. In the field of culture, the most common types of events are exhibitions (56) and anniversaries (27), and the least common are trade fair (1), congress (1), tribune (3) and discussion (1). Within scientific events the most common were gatherings (97) and conferences (91), and the least represented were exhibitions (5), concert (2) and trade fair (4).

6. CONCLUSION

University journal Universitas was exclusively a journal of the University in Split until its 62nd issue. Therefore, the biggest part of articles was written mostly on events in Split. After becoming Croatian university journal, events from other Croatian towns and especially from Zagreb were included. After that issue, approximately 20 issues had separated space for each university town and events in them, mostly using journalistic genre of the extended news.

Last page in the journal is mostly reserved for a sport event, but since its 60th issue it is reserved for the culture. In only two issues (1st and 72nd) no events were found. During summer months, there is a small number of events in journal, because there is no lectures and students are absent. August is the poorest month regarding events. Since its 86th issue, there have been many reports on meetings of senates and contracts signings and journal takes another form. It basically has no more small articles, but all of them are medium and big. Also, since that issue almost each article is signed by an author, whether a person or a university in Croatia. At the beginning, journal had 24 pages, sometimes only 16. However, about its 70th issue the number of pages increases on 32, and only sometimes it had 24. Journal is generally published twice in November each year. Biggest part of events mostly takes place in October, November or December where promotions, anniversaries and meetings are the most written about. This paper analysed in detail 770 articles, 238 on cultural events and 532 on scientific events. Authors also listed all 2111 articles on events and analysed their types. From the total number of articles, 167 were on sport, and remaining 1175 on education, which might further be divided on categories of economy, religion, law and politics. Science takes part in ¼ of events, and the culture could be more represented in this journal. Articles on cultural and scientific topics were analysed by their size; the biggest part of medium size articles were wrote in the field of science and the biggest number of big articles in the field of culture. We can therefore make a conclusion that articles on cultural events are extensive and important. The most common genre among 770 articles on cultural and scientific events was a report, while the interview was the least represented. It is in common for both types of events. The biggest part of articles covers events in Split and the least events abroad. The fact that it used to be exclusively a journal of the University in Split explains this situation. Universitas offers an opportunity to write an article to many. Main authors of scientific articles are Tatjana Klarić and Ivan Perkov, and main authors of articles on cultural events are R.I. and Sagita Mirjam Sunara. The most common subjects of all 2111 articles were anniversaries; conferences, meeting and gathering, and the least represented revues, inaugurations and donations. In the field of culture, the most common type of the event was exhibition and anniversary, and the least common was trade fair, congress, tribune and discussion. Within events on scientific subject the most common types of events were gatherings and conferences, and the least common were exhibitions, concerts and trade fairs.

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ASPECTS OF COOPERATION OF UNIVERSITY WITH BUSINESS SECTOR AND THEIR ASSESSMENT

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ABSTRACT

Universities fulfil three missions in terms of knowledge triangle. One of this missions is in the form of transferring new innovations and technologies to the market by university cooperation with the business sector. The entrepreneurial character of the university forms the basis for cooperation with other subjects of the regional innovation system. Examining the degree of cooperation, factors and barriers affecting the cooperation of academics at the technical university with business sector will help to determine whether and to what extent academics have accepted the university's business mission. Within the primary research and by applying the orientation analysis we did not obtain relevant information. The analysis of the current state implies the absence of a comprehensive identification of aspects of cooperation between academics working at the university and the business sector. In relation to this research problem we have identified research goals associated with identifying the degree of cooperation, barriers and drivers of cooperation, as well as factors that influence these facts to a decisive extent. In order to identify the decisive factors we used the factor analysis. The input data were derived from a survey conducted at the university. The factor analysis identified a reduced number of aspects that can be considered as the most important aspects of cooperation of university academics with the business sector. The findings from the results of factor analysis can serve the for further research in the field of examining ways of assessing the level of cooperation, measures to support the drivers of cooperation and measures to remove barriers of cooperation.

Keywords: *Business sector, Collaboration factors, Collaboration rate, Universities*

1. INTRODUCTION

Economic theory emphasizes the key role of accumulating human capital, innovative processes, results of R&D in order to achieve overall economic development, economic growth, increases of the competitiveness of economies and improvements of the quality of life (Griliches, 1994; Rodgers, 1995). Investing in education, science, research and innovation bring effects with some delay, but their benefits to society are undeniable (Hudec, 2007). The roots anchored in sustainable economic growth based on knowledge and innovation create new chapter in the development of society. A knowledge-based economy is emerging, the basic pillar of which is the innovation support system. The ability of a national or regional economy to generation innovation depends not only on the performance of individual institutions, but also on how these institutions are able to interact and act as a parts of the systems influencing innovation processes in a given region (Sabadka, 2009). The potential of innovation and economic development in the knowledge-based economy lies in the stronger role of the academic environment in relation to industry and the state (Smith and Leydesdorff, 2012). The model emphasizing the role of the academic environment as one of the important players in regional innovation systems is called Triple Helix. The innovative model Triple Helix is based on the interaction of three subjects and their roles within the model (Smith and Leydesdorff, 2012; Leydesdorff, 2012):

- Academic environments – whose role is to educate and conduct research,
- Industries (enterprises) – whose task is to produce the goods and services,
- Government – main task consists of regulating the markets.

Within the academic environment, knowledge is achieved through the study and practice, the observation and experimentation. Discovery (as an act of observing or detecting something unknown) and invention (in terms of the process of creating new technology), products of science, are transformed into entrepreneurial innovation, which takes the form of a process of effectively bringing discovery and invention to the market (Curley and Formica, 2012). That is why, on the basis of bilateral relations, the aim of cooperation between academic environment, industries and the government is to create a new institutional and social environment for the production, transfer and application of new innovations, technology and knowledge into practice (Etzkowitz, 2008). By increasing the interaction between subjects of the Triple Helix model, certain characteristics of one subject are acquired by the other subjects, why may ultimately lead to hybrid institutions (Etzkowitz, 2007). In terms of Triple Helix model, the University of Žilina (UNIZA) is one of the representatives of the academic environment in the region of Žilina. UNIZA fulfils all three missions in the innovation system of the Žilina region. It educates, carries out scientific and research activities and brings new innovations to the market in the form of spin-off companies and cooperation with the business sector (UNIZA, 2018). Monitoring the effectiveness of overall education in Slovakia can be achieved by comprehensive evaluation of universities (as representants of academic environment) position in carrying out three missions resulting from their role in regional innovation systems. One of the areas of evaluation is in the field of cooperation between the universities and the business sector. In the years 2016 and 2017, the EU member states have evaluated the university-business cooperation within the project "State of University-Business Cooperation in Europe". The project aims to evaluate 14 identified aspects of cooperation between the universities and business sector in the areas of education, research, valorisation (commercialization of the knowledge and technology generated at the university) and management activities (activities related to clarifying the strategic nature of university-business cooperation). The conclusions of the studies under the project are in the form of (European Commission, 2018):

- assessments of the level of aspects of cooperation between universities and the business sector (from the perspective of academics and businesses),

- assessment of factors influencing cooperation between universities and the business sector (from the perspective of academics and representatives of university management),
- assessing the drivers of cooperation between the universities and the business sector (from the perspective of academics and representatives of university management),
- assessing the mechanisms for promoting cooperation between the university and the business sector (from the perspective of representatives of university management).

The partners from the Slovakia that took part in the project were Transfer Centre of Slovak University of Agriculture in Nitra and the Centre For Further Education of Comenius University in Bratislava. The conclusions of the available evaluations can be applied for these two institutions. However, at what level is UNIZA in the perspective cooperation with the business sector? Because no such evaluations takes place there is an information gap, which takes the form of the absence of the up-to-date information regarding the evaluation of UNIZA's cooperation with the business sector. Therefore the goal of this paper is to identify how are the aspects of cooperation with the business sector assessed by the academics of UNIZA and which of these aspects are most important for them.

2. METHODOLOGY

Identified information gap is essentially the problem of our research. In solving this gap we carried out the primary research. We chose the method of questionnaire, which was electronically distributed to the academics of UNIZA. It was necessary to question a certain number of respondents. Calculation of the size of sample respondents, including mathematical formulas necessary for correct calculations and the structure of respondents that were necessary to address are as follows:

Table following on the next page

Table 1: Plan for the primary research

<table>
<tr><td>Formulas for sample calculation</td><td>Calculation was carried using the following formulas (Pacáková, 2003):
$$\sigma = \sqrt{p * (1 - p)}$$
$$n = \frac{N * t^2_{1-\frac{\alpha}{2}} * \sigma^2}{(N-1) * \Delta^2 + t^2_{1-\frac{\alpha}{2}} * \sigma^2}$$
p – variability of the basic set,
n – minimal sample size (minimal number of respondents needed to be addressed),
$t_{1-\alpha/2}$ – critical value, table value (from the source (Pacáková, 2003)),
σ^2 – variance calculated from standard deviation,
Δ – maximum permissible error margin.</td></tr>
<tr><td>Results of calculations</td><td>Total number of academics working at UNIZA (N) is 1000 (UNIZA, 2017). Confidence level is 95 % to which critical value from the tables ($t_{1-\alpha/2}$) has value 1,96. Error margin (Δ) is 6 %. After substituting the values into the formula:
• $\sigma = \sqrt{0{,}5 * (1 - 0{,}5)} = \sqrt{25} = 0{,}05$
• $n = \frac{N * t^2_{1-\frac{\alpha}{2}} * \sigma^2}{(N-1) * \Delta^2 + t^2_{1-\frac{\alpha}{2}} * \sigma^2} = 210{,}8$
we can conclude that it is, after rounding, necessary to address 211 respondents.</td></tr>
<tr><td>Structure of respondents that were necessary to address</td><td>
<table>
<tr><td>Structure of academics working at UNIZA (year 2017)</td><td></td><td>%</td><td>Sample of respondents</td></tr>
<tr><td>Professors</td><td>94</td><td>9 %</td><td>19</td></tr>
<tr><td>Associate professors</td><td>157</td><td>16 %</td><td>34</td></tr>
<tr><td>Assistant professors/lecturers</td><td>341</td><td>34 %</td><td>72</td></tr>
<tr><td>Researchers</td><td>154</td><td>16 %</td><td>34</td></tr>
<tr><td>PhD students</td><td>253</td><td>25 %</td><td>52</td></tr>
<tr><td>∑</td><td>1000</td><td>100 %</td><td>211</td></tr>
</table>
</td></tr>
<tr><td>Time period of research</td><td>From 18th March to 31st March of 2019</td></tr>
</table>

Source: Own processing

The questionnaire was filled in by 212 respondents. From these respondents we wanted only responses from those, who stated in the questionnaire that they cooperated in present or in the past with the business sector. Cooperation with the business sector was reported by 126 respondents. In order to achieve the goal of our research we needed to find out the answers of these respondents to five specific questions. Each question had a set of numerous sub-questions. Answers to these sub-questions were in the form of Likert scale. Based on the answers of respondents, we wanted to find out which of the aspects of UNIZA's cooperation with the business sector are the most essential from the perspective of the academics. Therefore we applied factor analysis in our research. The basic aim of the factor analysis is to evaluate the structure of relations among monitored variables and to determine if they can be divided into groups where their mutual correlations should be significant and vice versa. The mathematical model of the factor analysis works with correlation coefficients, but it is necessary to have n observations of each variable x_1, x_2, …., x_k. If there are linear dependencies between variables, the correlation coefficient will be high in absolute terms. It should be emphasized that the factor analysis constructs factors in independent and uncorrelated way and with the variance of the factors, while the median is 0. In the factor analysis, it is important to define a factor loading

that expresses the correlation between variables and factors that reach a value in the range -1 and 1 (Uberla, 1971; Vojtková and Stankovičová, 2007; Johnson and Wichern, 2007). In general taking into account all the theoretical rules, the factor analysis allowed us to identify the reduced number of aspects from which we could subsequently identify which of these aspects are most important. The factor analysis was carried out in the sequence of seven specific steps:

- Identification of variables – in the first step we identified the aspects of university-business cooperation of UNIZA from the perspective of university's academics. For the purpose of software processing, the aspects were called variables. The variables were derived from the answers to the sub-questions in the questionnaire (each sub-question = one variable).
- Application of factor analysis – in the second step we performed five factor analyses from the respondents answers to the sub-questions to the five questions of questionnaire. Individual factor analyses were referred to as Factor analysis 1 to 5. For the purpose of application of factor analysis, we used the open-source PSPP software. Before the factor analysis was initiated, it was necessary to change the default settings of the software. The covariance matrix was changed to correlation matrix for better interpretation of correlation coefficients. Screen plot was selected to graphically interpret the significance of the achieved factors and their own values. In addition to the scree plot and the correlation matrix, PSPP software was set to the condition y = 1 in order to display only those factors with value greater than one. We selected the rotation of varimax, because of saturation of the factor with each variable. Varimax can be interpreted as a method, which can minimize the number of variables with a high factor load (Hanák, 2016).
- Determination of number of factors – to determine valid number of factors, with value greater than 1 (condition from previous step y = 1), we used the graph of scree plot. Y axis of the graph represented individual values (variability) of each factor. These values were also called eigenvalues. X axis represented the factors by their size, from the highest to the smallest.
- Values and variability of identified factors – in this step we quantified the variability for each factor. For each factor analysis we took into account only those factors whose value met the mentioned condition y = 1.
- Factor matrix – the fifth step consisted of creating the factor matrix. A factor matrix is a type of matrix, which shows a factor load of all variables in relation to each factor. The factor load represents the correlation of one variable with one particular factor and presents the amount of variability of that variable in a particular factor. The values in the factor matrix and in range from -1 (negative correlation) to +1 (positive correlation). If a particular variable reaches 0, there is no correlation. The factor matrix represents the fundamental output of exploratory factor analysis (Hanák, 2016). In order to better interpret the achieved results we performed the varimax rotation to form the rotated factor matrix, which allowed us to identify the impact of the selected factor on the particular variable.
- Interpretation of factors – In the sixth step of the factor analysis we interpreted the findings by written description for each factor analysis we performed.
- Quantification of significance values and their interpretation – the final step of the analysis was dedicated to quantifying and assigning the significance values to the factors of each factor analysis. The level of significance is based on the answers to the sub-questions of five questions of questionnaire and the average values of these answers. Based on the values we concluded which of the factors of five factor analyses is most significant as an aspect of cooperation between university academics and business sector.

3. RESULTS

3.1. Scope of cooperation

The first factor analysis (FA1) was linked to the question of the questionnaire whose wording is: In what activities and to what extent have you cooperated with the business sector in the past or at present? This question focused on finding out the degree of cooperation between academics and the business sector. Identified variables of FA1 and their abbreviations listed in brackets that were used in the PSPP software are:

- industry support (Indus_sup), shared resources (Shar_res), leadership (Lead), student entrepreneurship (Stud_ent), academic business (Acad_bus), commercialization of R&D results (Com_R&D), employee mobility (Emp_mob), business consulting (Bus_con), R&D cooperation (R&D_coop), lifelong learning (Lif_lea), dual education (Dual_ed), student mobility (Stud_mob), organizing lectures (Org_lect), creation and approval of study plans (Crea_app_stud_pl).

The number of factors whose variability is greater than one is four. Values of each factor and their placement within the rotated factor matrix is stated in table 2. The highest variability of a given variable is highlighted.

Table 2: Rotated factor matrix of FA1

Variable	Factor			
	1	2	3	4
Crea_app_stud_pl	0,14	0,15	0,82	0,01
Org_lect	0,13	0,12	0,72	0,14
Stud_mob	0,74	0,07	0,32	-0,04
Dual_ed	0,64	0,12	0,25	-0,08
Lif_lea	0,25	0,01	0,58	0,03
R&D_coop	0,16	0,10	-0,08	0,81
Bus_con	-0,07	0,08	0,31	0,74
Emp_mob	0,64	0,15	0,09	0,15
Com_R&D	0,30	0,53	-0,07	0,45
Acad_bus	0,05	0,85	0,15	0,13
Stud_ent	0,21	0,85	0,10	0,05
Lead	0,58	0,48	0,31	0,09
Shar_res	0,46	0,32	0,11	0,46
Indus_sup	0,77	0,09	0,02	0,28

Source: Own processing

Based on the results of varimax rotation of 14 variables it is possible to create four factors showing relationship between them. We named these factors by the number, with interval of variability in brackets and listing variables obtained in the factor after brackets. They are as following:

- Factor 1 (0,58;0,77) – student mobility, dual education, employee mobility, leadership, industry support.
- Factor 2 (0,53;0,85) – commercialization of R&D results, academic business, student entrepreneurship.
- Factor 3 (0,58;0,82) – creation and approval of study plans, organizing lectures, lifelong learning.
- Factor 4 (0,46;0,81) – shared resources, business consulting, R&D cooperation.

3.2. Periodicity of cooperation

The second factor analysis (FA2) followed up the questionnaire's question: How often do the interested parties listed below initiate activities related to your cooperation with the business sector? The purpose of this question was to finding out the periodicity of cooperation's initiation. Identified variables of FA2 and their abbreviations listed in brackets that were used in the PSPP software are:

- state at national and regional level (State_nat_reg_lev), external intermediaries (Ex_I), internal intermediaries (Int_I), university management (Uni_man), enterprises excluding graduates (Ent_ex_grad), graduates (Grad), currents students (Cur_stud), academics (Acad).

The number of factors whose variability is greater than one is three. Values of each factor and their placement within the rotated factor matrix is stated in table 3. The highest variability of a given variable is highlighted.

Table 3: Rotated factor matrix of FA2

Variable	Factor		
	1	2	3
Acad	-0,01	0,79	-0,14
Cur_stud	0,33	0,63	0,29
Grad	0,41	0,33	0,22
Ent_ex_grad	0,12	-0,35	0,32
Uni_man	0,57	0,07	0,35
Int_I	0,25	0,06	0,74
Ex_I	0,82	-0,02	0,22
State_nat_reg_lev	0,29	-0,07	0,52

Source: Own processing

Based on the results of varimax rotation of 8 variables it is possible to create three factors showing relationship between them. Factors named by the number, with interval of variability in brackets and listing variables obtained in the factor after brackets are as following:

- Factor 1 (0,41;0,82) – graduates, university management, external intermediaries.
- Factor 2 (0,63;0,79) – academics, currents students.
- Factor 3 (0,32;0,74) – enterprises excluding graduates, internal intermediaries, state at national and regional level.

3.3. Facilitation of cooperation

The third factor analysis (FA3) is linked to the question: How do the following factors facilitate your cooperation with the business sector? Thus the third factor analysis was dedicated to finding out how perceived factors are facilitating cooperation from the perspective of academics. Identified variables (factors facilitating cooperation) of FA3 and their abbreviations listed in brackets that were used in the PSPP software are:

- state support in creating and financing partnerships (Stat_sup_CaFP), small geographical distance of university from partner (Small_geo_dist), business orientation of university (Bus_orient_uni), scientific orientation of business sector (Sc_orient_BS), existence of mutual links – personal, property links, etc. (Exis_mut_links), access to R&D facilities of the business sector (Acc_ R&D_fac), existence of a previous relationship with a business partner (Exist_prev_rel_BP), business interest in access to scientific knowledge (Bus_int_acc_SK), existence of mutual trust (Exist_MT), common objectives of interested parties (Com_object_giv_var).

The number of factors whose variability is greater than one is two. Values of each factor and their placement within the rotated factor matrix is stated in table 4. The highest variability of a given variable is highlighted.

Table 4: Rotated factor matrix of FA3

Variable	Factor	
	1	2
Com_object_giv_var	0,69	-0,01
Exist_MT	0,84	0,01
Bus_int_acc_SK	0,66	0,41
Exist_prev_rel_BP	0,70	0,18
Acc_ R&D_fac	0,57	0,40
Exis_mut_links	0,59	0,02
Sc_orient_BS	0,50	0,46
Bus_orient_uni	0,04	0,85
Small_geo_dist	0,21	0,65
Stat_sup_CaFP	-0,02	0,87

Source: Own processing

Based on the results of varimax rotation of 10 variables it is possible to create two factors showing relationship between them. We named these factors by the number. Interval of variability in stated in brackets. The variables obtained in the factor are listed after brackets. Factors are as following:

- Factor 1 (0,50;0,84) – common objectives of interested parties, existence of mutual trust, business interest in access to scientific knowledge, existence of a previous relationship with a business partner, access to R&D facilities of the business sector, existence of mutual links, scientific orientation of business sector.
- Factor 2 (0,65;0,87) – business orientation of university, small geographical distance of university from partner, state support in creating and financing partnerships.

3.4. Driving forces and motivation for cooperation

The fourth factor analysis (FA4) follows question from the questionnaire: How do they motivate you to cooperate with the business sector? Question was dedicated to finding out the driving forces and motivations for cooperation. Identified variables (driving forces of cooperation) of FA4 and their abbreviations listed in brackets that were used in the PSPP software are:

- increase of chances of career advancement (Inc_chan_CA), opportunity to improve reputation within the university – internal recognition (Opp_imp_rep), possibility to access funds for work with business sector (Pos_acc_fun_BS), cooperation as an effective tool for solving societal challenges and problems (Coo_eff_tool), interest of the business sector to employ graduates/employees on the university (Int_bus_sec_emp), opportunity to improve teaching through the experience of working with business (Opp_imp_teach_exp_bus), possibility to contribute to the fulfilment of the university mission (Pos_con_ful_UM), opportunity to use own research in practice (Opp_use_reas_pract), opportunity to gain new knowledge in the field of research (Opp_gain_NK_field_res).

Table following on the next page

Table 5: Rotated factor matrix of F4

Variable	Factor	
	1	2
Opp_gain_NK_field_res	0,15	0,76
Opp_use_reas_pract	0,06	0,84
Pos_con_ful_UM	0,51	0,53
Opp_imp_teach_exp_bus	0,57	0,35
Int_bus_sec_emp	0,60	0,40
Coo_eff_tool	0,11	0,72
Pos_acc_fun_BS	0,31	0,37
Opp_imp_rep	0,89	0,09
Inc_chan_CA	0,84	-0,05

Source: Own processing

Based on the results of varimax rotation of 9 variables it is possible to create two factors showing relationship between them. Factors are named by number, with interval of variability stated in brackets. The variables obtained in the factor are listed after brackets. Factors are:

- Factor 1 (0,57;0,89) – opportunity to improve teaching through the experience of working with business, interest of the business sector to employ graduates/employees on the university, opportunity to improve reputation within the university – internal recognition, increase of chances of career advancement.
- Factor 2 (0,37;0,84) – opportunity to gain new knowledge in the field of research, opportunity to use own research in practice, possibility to contribute to the fulfilment of the university mission, cooperation as an effective tool for solving societal challenges and problems, possibility to access funds for work with business sector.

The number of factors whose variability is greater than one is two. Values of each factor and their placement within the rotated factor matrix is stated in table 5. The highest variability of a given variable is highlighted.

3.5. Barriers of cooperation

The last, the fifth factor analysis (FA5) we realized, was linked to the question from questionnaire: How do you perceive the importance of barriers affecting your cooperation with the business sector? Purpose of this question was in finding out the presence of barriers of the cooperation between academics and business sector. Identified variables (selected types of cooperation barriers) of FA5 and their abbreviations listed in brackets that were used in the PSPP software are:

- absence of state support (Abs_ST), frequent staff turnover within the university or business sector (Freq_st_turn), usage of different language for communication between university and business sector (Us_dif_lan_comm), challenging the credibility of business research results (Chal_cred_bus_res), limited ability of companies to absorb research results (Lim_ab_com_abs_res), different perception of time in cooperation between university and business sector (Dif_perc_coop), absence of suitable contact person within the university or business sector at the beginning of cooperation (Abs_suit_cont_pers), failure to achieve practical results of cooperation (Fail_pract_coop insufficient awareness of companies about research activities of university (Ins_awar_res_act), difficulty in finding a suitable partner for cooperation (Dif_find_suit_partner), insufficient amount of time allocated by university for implementation of cooperation (Ins_amount_time), insufficient knowledge of academics about cooperation (Ins_knowl_acad), different motivation and different perception of the value of cooperation (Dif_mot_dif_perce), limited absorption capacity of SMEs to undertake internships and projects (Lim_abs_cap), lack of financial resources of

the university (Lack_fin_res_uni), lack of financial resources of enterprises (Lack_fin_res_ent), lack of resources from the state (Lack_res_state), bureaucracy related to cooperation with companies (Bur_rel_coop).

The number of factors whose variability is greater than one is five. Values of each factor and their placement within the rotated factor matrix is stated in table 5. The highest variability of a given variable is highlighted.

Table 1: Rotated factor matrix of F5

Variable	Factor				
	1	2	3	4	5
Bur_rel_coop	0,17	-0,01	0,08	0,74	0,08
Lack_res_state	0,08	0,13	0,13	0,81	0,12
Lack_fin_res_ent	0,09	0,05	0,06	0,27	0,78
Lack_fin_res_uni	0,43	0,06	0,02	0,55	0,28
Lim_abs_cap	0,59	0,27	0,21	0,21	0,25
Dif_mot_dif_perce	0,35	0,21	0,48	0,12	0,58
Ins_knowl_acad	0,67	0,15	0,41	0,19	0,03
Ins_amount_time	0,89	0,06	0,00	0,15	0,09
Dif_find_suit_partner	0,64	0,17	-0,11	0,44	0,16
Ins_awar_res_act	0,50	0,18	0,18	0,16	0,49
Fail_pract_coop	0,25	0,50	-0,12	0,14	0,49
Abs_suit_cont_pers	0,44	0,65	-0,01	0,07	0,17
Dif_perc_coop	0,58	0,37	0,17	-0,02	0,22
Lim_ab_com_abs_res	0,35	0,55	0,20	-0,11	0,44
Chal_cred_bus_res	0,06	0,76	-0,06	-0,04	0,35
Us_dif_lan_comm	0,11	0,81	0,13	0,12	-0,02
Freq_st_turn	0,09	0,78	0,36	0,17	-0,09
Abs_ST	0,12	0,13	0,87	0,12	0,12

Source: Own processing

Based on the results of varimax rotation of 18 variables it is possible to create five factors showing relationship between them. Factors are again named by the number, with interval of variability listed in brackets and variables obtained within the factor stated after brackets. Factors are as following:

- Factor 1 (0,50;0,89) – limited ability of companies to absorb research results, Insufficient knowledge of academics about cooperation, insufficient amount of time allocated by university for implementation of cooperation, difficulty in finding a suitable partner for cooperation, insufficient awareness of companies about research activities of university, different perception of time in cooperation between university and business sector.
- Factor 2 (0,50;0,81) – failure to achieve practical results of cooperation, absence of suitable contact person within the university or business sector at the beginning of cooperation, limited ability of companies to absorb research results, challenging the credibility of business research results, usage of different language for communication between university and business sector, frequent staff turnover within the university or business sector.
- Factor 3 (0,87) – absence of state support.
- Factor 4 (0,55;0,81) – bureaucracy related to cooperation with companies, lack of resources from the state, lack of financial resources of the university.
- Factor 5 (0,58;0,78) – lack of financial resources of enterprises, different motivation and different perception of the value of cooperation.

4. CONCLUSION

The average values of responses of each sub-question (variable) were further averaged for each factors, outputs of factor analyses FA1, … , FA5. Calculated averages representing the significance level were arranged from the largest to the smallest according to their value:

Table 7: Significance levels of factor analyses

FA 1	FA 2	FA 3	FA 4	FA 5
Factor 4 = 2.78 Factor 3 = 2.49 Factor 2 = 1.71 Factor 1 = 1.93	Factor 2 = 2.81 Factor 1 = 2.37 Factor 3 = 2.13	Factor 1 = 3.49 Factor 2 = 2.69	Factor 2 = 3.63 Factor 1 = 3.33	Factor 4 = 2.86 Factor 1 = 2.74 Factor 5 = 2.72 Factor 3 = 2.62 Factor 2 = 2.39

Source: Own processing

The conclusions drawn from the table 7 and on the basis of the quantified significance value (SV) are:

- From FA1, the factor 4 has the highest SV. The scope of cooperation between academics and business sector is most significant in the areas of sharing resources, consultation activities for businesses and R&D cooperation.
- From FA2, the factor 2 has the highest SV. The periodicity of university-business cooperation initiation is significantly affected by other academics and students.
- From FA3, the factor 1 reached the highest SV. From the point of view of academics factors such as common objectives of interested parties, existence of mutual trust, business interest in access to scientific knowledge, existence of a previous relationship with a business partner, access to R&D facilities of the business sector, existence of mutual links and scientific orientation of business sector are most significant factors facilitating cooperation between the university and business sector.
- From FA4, the factor 2 has the highest SV. Driving forces behind the motivation of academics in cooperation with the business sector are opportunities to gain new knowledge in the field of research, opportunity to use own research in practice, possibilities to contribute to the fulfilment of the university mission, cooperation as an effective tool for solving societal challenges and problems and possibility to access funds for work with business sector.
- From FA5, the factor 4 has the highest SV. Most significant barriers of university-business cooperation according to the academics are: bureaucracy related to the cooperation with companies, lack of financial resources from the state and the university.

Summarizing the stated findings from the results of factor analyses, it is possible to suggest for UNIZA ways of assessing the degree of cooperation, measures to support the drivers of cooperation and to remove barriers of cooperation. Suggestions represent another topics and direction for further research devoted to the evaluation of the position of UNIZA within its regional innovation system in the context of university cooperation with the business sector.

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FORECASTING THE STAFFING NEEDS OF THE REGION

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ABSTRACT

The article is devoted to the formation of a scientific and information base for the development of a system for managing the labor and educational potential of the region. The methodology is the extrapolation of retrospective data of federal and regional statistics according to three development scenarios: basic, investment and basic with optimization without restrictions. Relationships and factors identified by retrospective data and affecting the forecast size of the staffing needs of the region are adjusted according to the results of surveys of employers, youth and experts. Based on the forecasted balance of labor resources of the Chelyabinsk region developed by the authors until 2036 new long-term and medium-term trends in the formation of the staffing needs of the region's economy by types of economic activity are revealed. The results of forecasting the staffing needs of the region's economy make it possible to establish the correspondence of the volume and composition of staff to solving the problems of the socio-economic development of the region and ensuring its competitiveness. Forecasting the region's needs for personnel is aimed at ensuring a balanced labor market, educational services market and the construction of activities related to vocational guidance.

Keywords: *Balance of labor resources, Labor market, Forecast, Region, Staffing need*

1. INTRODUCTION

The formation of a scientific understanding of the staffing needs of the region is the most important direction in solving the problem of ensuring regional competitiveness. A prerequisite for the formation of such a view is the work of representatives of Russian economic science. So, in a research study by R.R. Akhunov (2016) the problems of forming the reproductive potential of the region are revealed and the need for linking this problem with the problem of the region's competitiveness is provided. Moreover, R.R. Akhunov offers his own concept of systemic interaction of the reproductive potential and competitiveness of the region. In the studies by E.A. Nezhivenko E.A. and S.A. Golovikhin (2011, 2019) the state and problems of ensuring the competitiveness of the region are considered and attention is paid to the importance of creating competitive advantages associated with the development of the personnel and educational potential of the region. The basis for the formation of a scientific understanding of the staffing needs of a region is forecasting. Forecasting the staffing needs of the region is a complex economic problem that has many aspects. A solution to this problem is proposed in their studies by authors such as V.A. Gurtov (2017), Ye.A. Pitukhin, S.V. Shabayeva and D.M. Moroz (2017) who presented a critical review of the approaches and practices of forecasting the needs of the economy in qualified personnel and also proposed an author's analysis technique staffing of the regional economy in the context of various professions. The contribution to the study of the theory and practice of forecasting the staffing needs of the region

was made by A.G. Mokronosov, A.A. Vershinin and D.M. Prudnikov (2013, 2014). These scientists devoted their research to such important aspects as the organization of a forecasting system for the staffing of the regional economy and the coordination of labor supply and demand in the regional labor market. In a research study by T.O. Subanakova and Yu.G. Byurayeva (2018) forecasting staffing needs is considered as a method of achieving a balanced labor market and education system. The point of view on the great importance of forecasting staffing needs to establish an effective relationship between the labor market and education is reflected and developed in the studies of L.V. Nekrasova and S.S. Shakhova (2019) who consider the forecasting of staffing needs of the region as an element of the management of the regional vocational education system. Practical experience in predicting the needs of the region in professional staffing is presented in a research study by E.M. Zaiko (2018). In this article we will present the results of short-term, medium-term and long-term forecasting of the region's personnel requirements. Medium-term and short-term forecasts (3–6 years) of the region's personnel requirements are necessary to determine the structural proportions (imbalances) of the population's employment; formulate control figures for admission to vocational education institutions on a budgetary basis; regulate the volumes and profiles of training in the vocational education system; identify priority professions (specialties) for vocational training and further vocational education of unemployed citizens; determine the volume of quotas for the attraction and use of foreign labor. Long-term forecasts (7–20 years) of the region's personnel requirements are important for determining priorities of a changing labor market; forming a list of popular professions and specialties for the long term; adjustments to the structure of training in educational organizations; justification for the discovery of new areas and specialties of training; development of proposals for the modernization of the professional education system in accordance with the tasks of socio-economic development of the region and the country as a whole.

2. INSTRUMENTS AND INFORMATION BASIS FOR FORECASTING PERSONNEL NEEDS OF THE REGION

The instrument for building forecasts of the region's needs for personnel was the software product «Information System for Forecasting and Planning Personnel in the Chelyabinsk Region» (the current version of the system is 2.14.0). The composition of the data used to build the forecast is conventionally divided into three groups:

1. Mandatory information (input). Mandatory information includes official statistics.
2. Clarifying information (entered parameters of models). This group includes the results of surveys of employers, experts, youth, used to adjust model parameters in accordance with the specifics of the region.
3. Perspective information (scenario conditions). This group includes information on plans for the development of the region as well as macro-forecasts for the development of the country formed by the Ministry of Economic Development of Russia.

From the point of view of analyzing the economy's demand for labor the indicators of the groups «Economy», «Labor Market», «Demography», «Education», «Balance of Labor Resources» introduced into the economic-mathematical model for forecasting personnel requirements in order to build a model are mandatory indicators of labor market. A retrospective of federal and regional statistics uploaded to the forecasting tool is up to 16 years for different categories of indicators. The interconnections and factors identified on the basis of retrospective data that affect the forecast value of the personnel needs of the region are adjusted in accordance with the results of surveys of employers, youth and experts. This provides detail and refinement of the forecast, adaptation of forecasting results to the real labor market. The forecast of the dynamics of economic development, demographic situation, changes in the labor market and

in the field of education is made for three scenarios for the development of the region: basic, investment and basic with optimization without restrictions. These scenarios vary depending on the rate of use of factors accelerating socio-economic processes such as investment, technological innovation, structural and institutional transformations. The basic scenario assumes the preservation of prevailing trends and external conditions. Its implementation does not imply fundamental changes in the long-term socio-economic development of the region. The basis of this scenario is the inertial development of the economy and its traditional industries, infrastructure while maintaining the existing energy balance structure. The investment scenario is characterized by the strengthening of the investment component of the development of the region and involves the transformation of innovative factors into a leading source of economic growth. The scenario is based on the creation of a modern infrastructure and a competitive sector of high-tech industries of the economy, the effective use of human capital, the implementation of new approaches to managing the region in the context of strengthening the investment focus of economic growth. The distinctive features of this scenario are a significant inflow of capital, overcoming the negative trends associated with a slowdown in economic growth, an increase in the flow of attracted investments and an increase in production volumes. Successful implementation of the investment scenario will not be possible without a significant improvement in the parameters of labor resources, which will make the region attractive to highly qualified personnel. The basic scenario with unlimited optimization is moderately optimistic and involves the accelerated development of the regional economy due to the implementation of the largest and most significant investment projects in key activities of the region, a slight increase in the migration flow of the population from other regions of Russia and from abroad. Improving the parameters of human capital will occur due to positive changes in the social and demographic spheres. The basic scenario with optimization without limits is an intermediate between the base and investment scenarios and reflects the possibility of implementing the most promising areas of regional development.

3. STATE OF PERSONNEL NEED FOR THE ECONOMY OF THE REGION (ON THE EXAMPLE OF THE CHELYABINSK REGION)

An analysis of the prevailing distribution of labor resources in the Chelyabinsk region by type of economic activity showed that the largest number of employees are employed in manufacturing (23.16%), trade (16.28%), construction (8.89%), education (8.0%), transport (7.24%), agriculture (6.6%) and healthcare (6.2%). Other types of economic activity are represented by a small number of employees. The personnel needs of the economy of the Chelyabinsk region as of 2018 were formed in the amount of 1,759,405 people. The overall satisfaction level of the region's needs for personnel is 97%. An imbalance is observed in the amount of 52,811 people which the region lacks to cover labor requirements. The total staffing demand in the region was formed mainly due to demand formed by manufacturing industries (23.06% of the total regional staffing requirements), trade and catering (16.76%), construction (8.87%), education (7.76%), transportation and storage (7.35%), agriculture (6.75%), healthcare (6.03%). The remaining 11 types of economic activity account for 23.42% of the staffing needs of the region. The most significant imbalance in staffing needs is noted in trade and public catering (personnel shortages amounted to 16,990 people); in manufacturing where an unmet demand for personnel in the amount of 10,570 people has formed; in agriculture (–6,066 people); on transport (–5,760 people); in the activities of hotels (–2,536 people); in the field of information and communication (–1,642 people). On average in economic activity the additional personnel requirement is 6,269 people, or 4.76% of the total regional additional staffing requirement. The maximum annual additional labor demand for replacing free jobs exceeding such an average demand in the region was in manufacturing (30,157 people which is 4.8 times the average for the region and makes up 22.91% of the total additional personnel

needs of the economy of the Chelyabinsk region); trade (28,348 people which is 4.5 times more than the average value in the region, 21.53% of the total regional additional need); construction (13,274 people which is 2.1 times more than the average value in the region, 10.08% total regional additional need); agriculture (12,848 people which is 2 times the average for the region, 9.76% of the total regional additional need); transport (12, 15 people which is 1.9 times more than the average value in the region, 9.13% of the total regional additional needs). The five types of economic activities listed above account for 73.41% of the regional additional staffing requirements.

4. QUALITY OF LABOR FORCE IN CHELYABINSK REGION

The quality of the labor force is determined by the structural and dynamic parameters of the level of education, age, migration.

4.1. The structure of the employed population and the structure of the unemployed by level of education

In the structure of the employed population of the Chelyabinsk region the share of people with higher education currently prevails (34.98%). The share of such individuals has been steadily growing since 2002 and increased by 14.18% by 2018. This trend indicates an increase in the quality level of the employed population. The second largest share in the structure of the employed population is presented by people with specialties of secondary professional education (30.09% in 2018) which also indicates a high level of quality of the employed population. A significant share in the structure of the employed population belongs to the category of people with working professions (20.37% in 2018). The share of this category of employed as a whole increased over the analyzed period by 4.87%. In 2018 14.56% of the employed population did not have a professional education. At the same time, since 2002 the share of such individuals has decreased by 12.34% which indicates positive qualitative changes in the structure of the employed population in the region. In general, the Chelyabinsk region is characterized by a high level of quality of the labor force. However, it should be noted that the distribution of the shares of the unemployed by educational level is directly dependent on the distribution of the shares of the employed population of the corresponding category (the average value of the linear Pearson correlation coefficient is +0.61). As a result, in the structure of the unemployed population by the level of education a high and constantly increasing share is made up of people with higher education (20.85% in 2018 which is 14.25% more than in 2002), as well as people with working professions (23,74% in 2018 which is 9.24% more than in 2002). The structure of supply and demand for different categories of labor does not match. This creates an imbalance of supply and demand in the labor market causing excess supply over demand mainly for those categories of workers who have a high level of education.

4.2. Age structure of labor force as a characteristic of its quality

In general, the age structure of the employed population of the Chelyabinsk region has positive characteristics: it is dominated by the share of the enlarged group of people from 20 to 49 years (73.7%), which is the real basis of the labor potential of the region, which has the knowledge, necessary skills for the implementation of labor, professional activity and at the same time a sufficiently high susceptibility to innovations and the development of professional innovations. However, the dynamic characteristics of changes in the age structure of the employed population indicate the presence of negative trends. Due to unfavorable demographic trends the proportion of youth from 20 to 29 years old in the structure of the employed population is reduced (for the age group up to 20 years from 1.8% in 2002 to 0.4% in 2018, for the age group from 20 to 29 years old, respectively, from 21.9% to 19.9%). The most representative group in the structure of the employed population of the Chelyabinsk region is the age group from 30 to

49 years (the share of such persons in the structure of the employed population in 2018 amounted to 53.8% including the share of people from 30 to 39 years old of 29.0%, and from 40 to 49 years old - 24.8%). This is a group of people who have the highest labor activity, the proper level of qualification and practical work experience allowing to perform labor operations at a high professional level. However, the share of such persons in the structure of the employed population has also decreased by 2.3% over the past 17 years. The proportion of people from 50 to 59 years old (19.2%) is almost equal to the share of people from 20 to 29 years old (19.9%) but the proportion of people of pre-retirement age in the employed population is growing (from 16.3% in 2002 to 19,2% in 2018). The proportion of people aged 60 and above compared to other age categories of the population employed in the Chelyabinsk region is low (6.7%) but it almost doubled from 2002 to 2018.

4.3. The impact of migration on the quality of the labor force in the region

Over the past 19 years there has been a positive difference between the values of the flows of people entering and leaving which has been growing in recent years. In terms of age-related parameters of the quality of the labor force the «inbound» migratory flow fully compensated for the losses from the «outbound» flow. Since 2011 interregional migration began to exceed international.

5. FORECAST DATA ON THE GENERAL AND ADDITIONAL PERSONNEL NEEDS OF THE CHELYABINSK REGION

The study of forecast data on the region's personnel needs must be preceded by a forecast balance of labor resources which will give an idea of changes in the quantitative characteristics of labor resources in the medium and long term in the context of basic, investment and basic with optimization without restrictions forecasts.

5.1. Forecast balance of labor resources

The number of labor resources of the Chelyabinsk region in the medium term tends to decrease. In all three variants of the forecast the share of the labor force in the last year of the medium-term period (2024) will be 98.2% of the level of 2018. However, in the long term in the Chelyabinsk region there will be an increase in the number of labor resources. In the last year of the long-term period (2036) the increase in the number of labor resources will amount to 2.1% compared to 2018 in all forecast variants: basic, investment and basic with optimization without restrictions. The working-able population of working age will decrease in the medium term by 3.4% by 2024 compared to 2018 (96.6% in 2024 compared to 2018) and by the end of the long-term period it will increase to 99.2% in 2036 compared to 2018 in all forecast variants. The share of the working age population of working age in the labor force of the Chelyabinsk region in 2018 amounted to 90.33%; in the medium term it will decrease to 87.8% and by the end of the long term in 2036 it will increase to 88.9% in all forecast variants. In the medium and long-term forecast an increase in the number of labor migrants in the Chelyabinsk region is expected by 2.7% by 2024 compared to 2018 and another 6.1% by 2036. Such quantitative characteristics of growth showed all forecast options. In 2018 the share of foreign migrants in the structure of the workforce in the region amounted to 1.24%. By 2024 it will increase to 1.3% and remain so until the end of the long-term forecast period. Working citizens who are outside of the working age including working pensioners and adolescents make up 8.43% of the total labor force of the Chelyabinsk region. Their share will increase both in the medium-term (9.8% in 2024 in relation to 2018) and in the long-term (10.9% in 2036 by 2018). The same growth of this share was shown by all forecast variants. In the medium-term forecast the number of working pensioners will increase by 14.6% by 2024 and in the long-term forecast by 31.6% compared to 2018.

The number of working adolescents who have not reached working age will also increase by 18.7% in 2024 and 42.8% in 2036 compared to 2018. Such an increase was shown by all forecast options. The number of people employed in the economy in 2018 amounted to 82.35% of the labor force in the Chelyabinsk region. By the end of the medium-term period this share will increase slightly (up to 82.7%) and remain at that level until the end of the long-term period. At the same time, the number of people employed in the economy will decrease by the end of the medium term (98.6% in 2024 compared to 2018) but then increase (102.5% in 2036 compared with 2018). Such results showed all forecast options. The population not employed in the economy in 2018 amounted to 17.65% of the labor force of the Chelyabinsk region. By the end of the medium term this share will slightly decrease (to 17.3%) and will remain at that level until the end of the long-term forecast period. At the same time, the number of people not employed in the economy will decrease by the end of the medium-term period (96.1% in 2024 compared to 2018) but then increase (100.2% in 2036 compared to 2018). The spread of the results for the forecast options is insignificant and amounts to tenths of a percent. In the composition of the population not employed in the economy the number of unemployed registered with the employment service, according to forecast data, will decrease by 17.9% by 2024 and by 43.7% by 2036 relative to 2018. The share of the unemployed in the number of people not employed in the economy amounted to 7.6% in 2018 will decrease to 6.5% by 2024 and to 4.3% by 2036. Such results with insignificant differences of 0.1% show all forecast options. The number of other unemployed in 2018 amounted to 53.02% of the total unemployed population of the Chelyabinsk region. Obviously, the overwhelming majority of this category of unemployed are people who carry out entrepreneurial and (or) labor activity without registering it. In the current and forecast period, as a result of negative processes taking place in the economy the demand for the work and services of such people may be significantly reduced which will necessitate the search for jobs available in the «official» economy or registration with the employment service as unemployed. The reduction in the number of «other unoccupied» may also be influenced in the future by a new tax policy to remove self-employed from the shadows (tax experiment in 2019). In accordance with these trends, the medium-term forecast showed a decrease in the number of «other unoccupied» by 85.6% in the medium term by 2024 and by 25.5% in the long term by 2036.

5.2. Forecast of total personnel needs

The forecast of the general personnel requirements of the Chelyabinsk region showed that while maintaining the existing trends in the development of the economy of the region and its industries a slight increase in staffing demand will be observed in the medium and long term. By the end of the long-term period (2036), in relation to 2018, the demand is projected to increase by 3.09% and by the end of the long-term period (2036) the staffing requirement will increase by another 2.49%. The projected total increase in staffing requirements for this period will be 43,935 people. The low growth in staffing requirements in a developing economy is explained by the growth of labor productivity as a result of automation, digitalization of production processes in the branch of material production and services. The greatest personnel demand of the Chelyabinsk region is forecasted in the manufacturing industries which form the basis of the economy of the industrial region. This need tends to increase. By the end of the medium-term period it will amount to 411,096 people (an increase of 1.3% compared to 2018) and by the end of the long-term period it will be 439,753 people (an increase of 8.4% compared to 2018) in all forecast variants. An increase in the imbalance in the staffing needs of manufacturing is forecasted. The shortage of personnel in this industry will increase by 879 people in the medium term and by 4,777 people in the long term compared to 2018 in the basic forecast variants. The investment forecast predicts a greater growth in staffing requirements in the manufacturing industry compared to these options: 1,848 people in the medium term and

7,008 people in the long term. This difference is explained by the inclusion in the investment forecast of projects to expand a number of industries and increase the scale of their activities which necessitates the attraction of additional labor resources (however, such a need can be leveled by automation, digitalization of production provided for by the same or other investment projects which leads to a reduction in personnel needs). Satisfaction of the personnel needs of manufacturing in all forecast variants is within 97% (with slight fluctuations in the medium and long term) and does not differ from the level of the current period. The total personnel demand for trade is reduced in the medium and long term, respectively, by 15.5% by 2024 and by 32.4% by 2036 in the basic forecast which does not have significant differences from other forecast variants. However, the personnel imbalance in this type of activity in accordance with the medium and long-term forecasts will remain, although it will decrease compared to its level in 2018. Satisfaction of the personnel needs of trade in all forecast variants is within 94% (with slight fluctuations in the medium and long term) and practically does not differ from the level of the current period. The level of the general personnel demand for construction remains virtually unchanged in the medium and long term and fluctuates around 153–156 thousand people in different forecast variants. All forecast options show a decrease in the level of imbalance in the medium term but by the end of the long-term forecast period it is expected to grow within 1,000 people. Satisfaction with the building personnel requirements in all forecast variants is in the current period at 97.2%. For this type of economic activity, such as education, all forecast options showed an increase in the total personnel demand by 4.9% by 2024 and by 15.5% by 2036. At the same time, both in the medium and long term there is no imbalance in personnel requirements, that is, personnel needs are fully balanced with the supply of relevant personnel in the labor market, meaning 100% satisfaction of personnel needs in the medium and long term. Transportation and storage is the fifth largest economic activity in the Chelyabinsk region in terms of personnel requirements. The forecast showed a decrease in the total personnel requirements of this type of economic activity by 10.3% by 2036 (forecasting results are almost the same in different forecast versions). At the same time, the forecast showed a reduction in the imbalance of the total personnel needs by about 1,500 people by the end of the long-term forecast period and a satisfaction level of the overall personnel needs of 96.4% (forecast options give extremely close indicators). Agriculture, forestry, hunting, fish farming is one of the fastest growing types of economic activity in the Chelyabinsk region whose share in the growth of gross regional product over the past decade has been constantly increasing. Basic forecast options show a 12.2% reduction in personnel requirements for this type of activity by the end of the long-term period (in 2036). However, the investment forecast taking into account mainly the extensive growth of agricultural production gave slightly different results. In accordance with the investment forecast the personnel needs of agriculture will not decrease but will also grow by 4.7% in the medium term (by 2024) and by 9.4% by the end of the long term (in 2036). The imbalance as well as the dissatisfaction with personnel needs will continue (at a rate of 6% in the basic forecast options and 8.5% in the investment forecast by 2036). All variants of forecasting the personnel needs of healthcare and social services predicted its reduction by about 2,000 people in the medium term and by 4,000 people in the long term. However, at the same time, the imbalance in personnel needs in this industry will increase. The lack of personnel will increase by 125 people by 2024 compared to 2018 and by 3,365 by 2036. Accordingly, the level of satisfaction indicator of personnel needs will decrease from 99.7% in 2018 to 96.3% in 2036. The forecast (basic options) showed that the most significant increase in personnel needs will be characteristic of such economic activities as mining, administrative activities and related services, government administration and military security, social security, water supply, sanitation, collection and waste management, activities to eliminate pollution, providing electricity, gas and steam. For the four types of economic activity, according to the forecast, the level of personnel needs will decrease by 2036.

These are agriculture, forestry, hunting and fishing (by 13.2%), trade (by 32.4%), transportation and storage (by 10.3%) and healthcare (by 5%).

5.3. Forecast for additional personnel needs

Basic forecasts did not show fundamental changes in the size of the additional personnel needs of the economy of the Chelyabinsk region in the medium and long term. An increase in demand is projected at 12,812 people by 2036 relative to 2018. The investment forecast based on the hypothesis of creating additional jobs as a result of expanding a number of industries, developing new production capacities with favorable market conditions and making appropriate investments in the development of the regional economy shows an increase in additional personnel requirements exceeding the base forecast by 7,924 people in 2036. The forecast shows largest additional personnel requirements for five types of economic activity. For manufacturing industries, the basic options for the medium-term forecast predict an increase of this need by 15.7% by 2024 (by 4,744 people), the investment medium-term forecast showed an increase in the additional staffing demand of the manufacturing industries by 17.8% by 2036 compared to 2018 (by 10,136 people). In the long-term forecast, the increase in additional personnel will be 33.6% by 2024 and 40.3% by 2036. The share of manufacturing in the overall economy of the Chelyabinsk region by the end of the medium-term will increase compared to 2018 and will be in 2024 27.7% in the basic forecast options and 28.2% in the investment version. By the end of the long-term forecast period (in 2036) such a share in the basic forecasting options will be 27.9% and in the investment version - 29.3%. For the wholesale and retail trade, repair of motor vehicles and motorcycles, the basic options for the medium-term forecast predict a 19.6% decrease in this need by 2024 (by 5,559 people), the medium-term investment forecast showed a decrease in the additional personnel demand for trade by 13,4% by 2024 compared to 2018. By the end of the long-term forecast period there will be an additional decrease in the level of personnel requirements for trade. As a result, the additional staffing requirement of trade in 2036 will be 70.7% of the level of 2018. At the same time, the share of trade in the overall additional personnel requirement in the economy of the Chelyabinsk region by the end of the medium-term period will decrease by 3.4% compared to 2018 and will be 18.1% in the basic forecast versions and 19.5% in the investment version. By the end of the long-term forecast period (in 2036) such a share in the basic forecasting options will be 13.9% which practically coincides with the investment option - 13.4%. For construction, the basic and investment options for the medium-term forecast predict almost one result: the demand by 2024 will slightly decrease and will be 95.3% and 95.8% of the level of 2018, respectively, and by 2036 it will increase by about 4%. In the long term, additional personnel requirements for construction will return to the level of 2018. By the end of the medium-term period the share of construction in the region's total additional personnel requirements will not change compared to 2018 and will amount to 10% in all variants of the forecast in 2024. By the end of the long-term forecast period (in 2036) this share will decrease by 0.7%. For agriculture, forestry, hunting and fish farming the basic forecast options for changes in additional personnel requirements show the following: by 2024 this need will be 84.13% (basic scenario), 82.48% (basic with optimization) from the level of 2018 and by 2036 will remain at the same level. The investment forecast shows a significant increase in additional personnel requirements: by the end of the medium-term forecasting period by 3,939 people, or 30.7%, compared to 2018 and by the end of the long-term by 4,850 people, or 37.7%. This difference in forecasts is explained by the inclusion in the investment forecast, in contrast to the basic, of a number of large investment projects the implementation of which may require an increase in the staff of workers in these industries. The share of agriculture, forestry, hunting and fishing in the total additional personnel requirement for the economy of the Chelyabinsk region will decrease by the end of the medium-term compared to 2018 and will make an average of 8.5% in the basic forecast

options in 2024 and in the investment, on the contrary, will increase to 13.3%. By the end of the long-term period (in 2036) this share in accordance with the long-term forecast will decrease and amount to 12.3%. For transportation and storage all forecast options showed the same result - a tendency to reduce additional personnel requirements. By 2024 this need will decrease by about 15.2% and by 12.6% by 2036 compared with the level of 2018. The share of transportation and storage in the total additional personnel requirements across the region is declining. All types of forecasts showed the same result. The share of transportation and storage in the medium-term will decrease by 1% and then another 1.2% by the end of the long-term. The remaining types of economic activity in the current, medium and long-term period have an additional personnel requirement an order of magnitude smaller compared to the sectors described above. The share of each of these types of economic activities in the total additional personnel requirements in the region for all types of forecasts does not exceed 3.7%.Supplement the data described above with forecasts of the personnel needs of the region by specialty groups, training areas, and working professions.

6. CONCLUSION

Presented forecasts of the needs of the regional economy for personnel currently serve as the basis for the development of a system for managing the labor and educational potential of the region. Forecasting the personnel needs of the region's economy serves as a justification for determining the volume and structure of training corresponding to the needs of the regional economy as well as solving strategic tasks of the region's socio-economic development. On this basis it becomes possible to improve regional management aimed at ensuring a balanced labor market, educational services market, and improving activities related to professional guidance.

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FINANCIAL POLICY OF THE STATE IN THE GLOBALIZATION CONDITIONS

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ABSTRACT
In recent years, new phenomena in the international economic relations sphere, called globalization, have significantly intensified. The globalization processes create new the budget and tax related challenges in the countries. In these conditions, the state aims to improve the financial competitiveness policy through tax cuts, attracting foreign investment, revision of the composition and structure of public spending in the favor of improving the socio-economic performance and improving the quality of market institutions. Development of globalization processes directs financial policy to create favorable conditions for doing business. Globalization has a direct impact on the financial policies of states: on the one hand, international tax competition forces states to take the path of reducing taxes and canceling social programs, on the other hand, human capital is the main factor of international competitiveness, which requires the state to make significant investments in science, education, and health care. The priority for the states is the direction of funds to the development of infrastructure for the formation of long-term factors of economic growth and social progress. In these conditions, in parallel with the reduction of the tax liabilities, the issue of budget expenditures efficiency based on the support of the competitive advantages of the national economy becomes particularly important. The financial policy of states in the context of globalization provides for the formation of a favorable investment climate. The global financial crisis made it necessary to form national financial systems. In this context, the state should play an important part of focus to stabilizing the economy, to its dynamic growth and strengthening its financial system.
Keywords: *budget expenditures, competitiveness, financial policy, globalization, taxes*

1. INTRODUCTION

Significant quantitative and qualitative shifts in the global economy associated with the growth of globalization have occurred over the last decades. Tendencies toward the rapprochement of states and the creation of a more harmonious and homogeneous socio-economic and knowledge program of a single planetary society arose after the end of the Cold War and the fall of the bipolar system. Globalization processes and the formation of new world order are triggering another reaction in all aspects of the world community. Professor at Columbia University D. Bhagwati, a well-known expert in international economic affairs, writes in his research "In Defense of Globalization" that globalization implies the incorporation of national economies into the global system by foreign trade, foreign direct investment (by transnational corporations), short-term capital flows, labor movement and the population in general [1]. Globalization is dictated by the growing interdependence and interrelationship of states and peoples. According to Professor A.I. Utkin, globalization is a convergence of national economies into a single global system based on the rapid movement of capital, new information accessibility to the world, technological revolution and the willingness of industrialized industrial countries to liberalize the movement of goods and capital [2]. Nobel laureate in economics J. Stiglitz writes in his book Globalization: Disturbing Trends: "Globalization in itself is neither good nor bad. It has immense power to do good and, following the roll-back during the 1997 crisis, this brought great benefits for East Asian countries that have adopted

globalization under their conditions. But it didn't bring much profit to most of the world but it turned into a disaster for many" [3]. Therefore, in the evaluation of globalization a range of opinions emerged-positive judgments prevail mostly in the scientific and social circles of developed countries, a negative attitude towards globalization is more apparent in developing countries [4]. There are no insurmountable physical barriers to the rapid economic growth of various countries during the twenty-first century. Nevertheless, this will entail not only developing countries' successful industrialization but also the harmonization of the economy's state regulation structure.

2. THE ROLE OF THE STATE IN THE CONTEXT OF GLOBALIZATION

The fundamental changes associated with the cycle of globalization have grave consequences for both politics and the economy. The processes taking place in the management domain would inevitably be influenced by globalization and their effect will itself be felt not only on the foreign but also on the environments within countries. Some authors argue that globalization inevitably leads to a diminution of the state's role and withdrawal from its previous positions. Business companies penetrate the "traditional zones" of the state demonstrating their "natural control" in dealing with issues such as the spatial distribution of industrial enterprises and investment objects, areas of technological innovation, labor relations management and the tax removal of surplus value [5]. Nevertheless, not everyone agrees with the theory of "state withdrawal." More and more attention is paid to the "capitalism of alliances," scientists are pointing out the increasing importance of partnerships, such relations emerge from the distribution of resources between the state and various organizations [6]. Therefore, in the sense of globalization, the value of functions sent by state authorities is more likely to increase. On the case J. Stiglitz argues that "today the system of capitalism is at a crossroad just as it was during the Great Depression." Keynes saved capitalism in the 1930s; he established a strategy that creates jobs and saves the poor from the collapse of the global economy. Considering the State-Market partnership, J. Stiglitz comes up with the idea of a "Secondary State Innovation"-it's a more effective and sensitive state, its special measures are the best way to tackle market issues, they can pre-empt and correct problems. With professional approach to the study of the information economy, public sector economy and growth issues, J. Stiglitz gives the state the properties and features available under the new conditions. In its most important forms-for example, the convergence of the world financial market, the subsequent push towards trade liberalization and the growth of transnational production networks - globalization tend to limit the state's ability to control the national economy. Such new trends, however, do not necessarily reduce the state's position as opposed to the private sector. One must think that given the different national aspirations and capacities of different states globalization is capable of giving the state new strength and setting new tasks in state-to-business relations, this is being done for the sake of more fruitful integration into the global economy. Ways of adapting to processes of globalization can vary from country to country and will depend largely on the specifics of each. The 2008 global crisis again updated the issue of the State's position and its responsibility for the economic and financial growth outcomes. Economic thinking was again concerned with minimizing at least the consequences of crises, remembering the successful experience of the twentieth-century 30s in resolving the Great Depression. The state's financial policy becomes more relevant for sustainable economic growth in the sense of globalization when the state of the national economy is dictated by both the direction of its development and external factors.

3. THE MAIN DIRECTIONS OF THE FINANCIAL POLICY OF THE STATE IN THE CONTEXT OF GLOBALIZATION

It is important to emphasize that not only the development of international exchange but also the internationalization of financial ties is a characteristic aspect of globalization. National

economies are more vulnerable to financial crises in the process of financial globalization, the reasons for the development of which come from outside. Intensifying financial crises in the sense of globalization, this is due to the increasing impact of the country's capital outflows and the emergence of the "infection effect." The globalization of the financial markets and the obsession with the mobility of output factors simultaneously promote and complicate the process of economic development, creating new problems and challenges in countries' fiscal sphere. Globalization processes have led to the fact that states are reforming their financial policies to improve productivity by tax cuts, attracting foreign investment, updating the composition and structure of public spending to enhance socio-economic performance and improving the quality of market institutions. The implementation of processes of globalization primarily guides the state's financial policy to create favorable conditions for doing business. International competition has now moved from the price domain to the sphere in which the conditions of national output compete. Globalization leads to increased competition between different countries ' tax systems, with the goal of attracting additional production factors to this country's economy. The globalization of the economy has a conflicting impact on the state's financial policy: on the one hand, the imperatives of international tax competition compel states to take the path of tax cuts and social programs reductions, on the other, human potential is the main factor in international competitiveness, requiring significant state investment in science, education, health care, additional means for environmental protection. In the light of globalization, the question of the efficiency of discretionary expenditure as well as the implementation of a program of strategic goals in the allocation of public funds, in conjunction with the reduction of the tax burden, is of particular importance. This system is based on promoting the national economy's competitive advantages. In states ' financial policies in the light of globalization, there is a general trend associated with a gradual reduction in budget expenditures in the material production sector and guidance of released capital in infrastructure development for the formulation of long-term economic growth and social progress factors. Reorientation of the state's financial policy for socio-economic development purposes is an important prerequisite for realizing the potential that countries have to offer. A major component of budgetary issues is the need for a substantial increase in healthcare and education funding as a necessary condition for improving the quality of services in these fields. The financial policy's main objective should be to increase budget spending on criteria that correspond to a high level of social spending. The economic situation in various countries is marked by substantial uncertainty in the sense of globalization and is more dependent on external factors. Given the country's high reliance on the global economy and budget, issues of increasing the efficiency of budget spending are becoming even more apparent. Along with a significant income deficit, the budget problem is the need to address several important tasks: providing conditions for economic growth and employment, improving defense capabilities in the country, maintaining social support, etc. [7]. As some experts note [8], the budget for the system is called upon to be one of the main tools to solve the problem of increasing public expenditure and measuring its effectiveness. The main idea of focused program budgeting (also called result-oriented budgeting) is to interconnect costs and results at all stages of the budgeting process. Also, the main objectives that are driven by budgeting within this model are to improve the social and economic productivity of expenditure [9] and to achieve better results at lower costs [10]. The propagation of a risk-based budget process approach and the implementation of risk management techniques is a modern trend in modernizing the system of administration of public finance. Budgetary risk management is recognized as a necessary element in the management of the public sector, subordinated to specific objectives: ensuring a balanced budgetary structure, preserving fiscal stability, making efficient use of budgetary funds and successful application of state powers [11]. It is understood that the role of state regulation in the current globalization process falls short of the role of transnational

corporations, information and communication technology, as well as world trade and financial centers. Nation experience shows that rising the State's size of direct economic operation does not imply its weakening. Under such circumstances, as state control over the major socio-economic processes takes more efficient forms, the distribution of budgetary funds should be concentrated on areas where the state is initially responsible for its growth. In light of inadequate budgetary resources, an investment that contributes to the development and enhancement of the competitive advantages of countries in the global economy must be maintained as a priority. First of all, it is about investments in "human capital," scientific development and infrastructure construction, setting the long-term basis for economic growth. Strengthening globalization mechanisms would lead to improvements in national tax structures, reflected in shifting the key tax burden from production to consumption; a large rise in environmental taxes; changes in public spending structure thus rising their relative scales. This will allow more reserves to be found to accelerate the growth of investment activity not at the expense of exogenous foreign "injections," but at the expense of strengthening inter-industry links, reducing transnational costs in the process of "direct" (without intermediaries) producer relations [12]. High economic growth rates in different countries are primarily due to financial policies implemented that ensured an increased influx of foreign direct investment. Thanks to the administration, foreign direct investment is realized. The state's financial policy will contribute to strengthening the national economy's competitiveness, which in turn provides a favorable investment climate for growth. As history indicates, the use of a special system establishes requirements to reduce investment risks for foreign investors. Countries' interest in attracting foreign direct investment forces creating a tax benefit program and State guarantees as a temporary measure. Nonetheless, financial policies aimed at attracting foreign direct investment as the investment climate improves will ensure the mechanism of providing tax benefits to foreign investors is slowly abandoned. The long-term goal of such a policy should be to establish common economic conditions that satisfy global peace requirements and standards. That is why the focus on developing a fiscal security system should not be so much on attracting foreign investment by lowering tax rates, but on creating an enticing "investment climate" for foreign investors.

4. ENSURING THE STABILITY OF THE BUDGET SYSTEM AS A PRIORITY OBJECTIVE OF THE STATE FINANCIAL POLICY IN THE CONTEXT OF GLOBALIZATION

In the sense of globalization, one of the main problems of fiscal policy is to keep the budget deficit and public debt at a relatively safe level to ensure long-term fiscal sustainability. The risks of discretionary fiscal policy started to manifest systematically in modern circumstances at the end of the twentieth century: efforts by developed countries to counter the downturn in economic growth by fiscal stimulus measures did not help accelerate it but contributed to a widespread persistent budget deficit. The substantial increase in public debt was one of the results of this. In the context of a discretionary fiscal program, it is generally acknowledged not only the existence of a persistent excess of expenditures over revenue but also the nature of a significant structural foundation for such a condition. It should be emphasized that an unjustified increase in discretionary spending means an increase in existing welfare at the expense of future generations, and the burden of repaying public debt is shifted to them. After a relatively short time, the introduction of a structural budget deficit leads to an increase in interest rates and a decline in investment attractiveness (since the need to pay off accrued debts in the future would eventually entail an increase in the tax burden). Budgetary imbalances also incentivize inflation. Limited public debt accumulation may not have adverse effects on current economic growth. Economic growth slows with its further rise, and when a certain limit has reached the risks of the debt crisis increase [13].

Therefore, an efficient fiscal policy in the sense of globalization includes the management of the budget deficit and public debt. The formula that Keynes developed for using the state budget shows that policy instruments also have the financial purposes of stabilizing the economy. It is based on the concept of "functional finance," according to which the financial and economic dimensions of things are part of the development and execution of budgetary policies. A balanced economy is a principal problem. A long-term solution to the problem of a budget deficit is unlikely without a radical solution to the question of economic stability, according to the idea of "efficient finance." That is the theoretical approach to the state's fiscal policy. A good budgetary balance and a rise in the budget deficit will follow the achievement of macroeconomic stability [14]. Financial system stability is an essential prerequisite for the survival of the national economy's reputation. A stable financial system has the ability to limit and remove imbalances by means of self-adjustment mechanisms, i.e. we speak about the ability to function without altering the framework, preserving balance [15]. Coordination of the ties and relationships between financial systems, banks and financial markets as a single organizational economic system is critical in the macro-management aspect [16]. The challenge of maintaining the stability of the budgetary structure emerges from the task of achieving economic stability, and its "structural performance" characterizes budget stability. The effective structure of the budget is better understood only as a budget which forms the basic performance conditions. Such factors are evaluated in terms of the impact of medium and long term maintaining the positive dynamics of economic development indicators and the quality of human potential [17]. Countries' participation in globalization's processes is a possible source of additional financial and creative tools to accelerate economic growth. To order not to stay outside of the scope of the cycle of globalization and guarantee international competitiveness, the government requires a financial policy that takes into account the factors of globalization.

5. CONCLUSION

The state of the national economy is characterized by the course of its development and external factors in the context of globalization and the state's financial policy is of particular importance for sustainable economic development. Globalization mechanisms create new problems and obstacles for different countries' fiscal environments orienting states' financial policies to create favorable conditions for doing business attracting foreign investment. Under such conditions, the problem of the effectiveness of budgetary expenditure in the sense of its socio-economic rationality in parallel with the reduction of the tax burden becomes a special one. One of the main problems of fiscal policy in the context of globalization is the control of the budget deficit and public debt. Accelerated economic development in the global world requires a balance of state regulation of the economy and international requirements.

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SPANISH SOCIETIES' TAX LAW AND THE FISCAL ADJUSTMENTS TO THE ACCOUNTING EXPENSE

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ABSTRACT

This paper aims to understand why accounting expenses are not directly accepted as fiscal cost and how operates the fiscal adjustments, in the determination of the taxable base in the Corporate Income Tax (CIT) law. For this purpose, it analyses the legal acts and doctrine, in particular, it researches data sources of Spain: the Ley del Impuesto sobre Sociedades (LIS), it means, the Spanish Corporate Income Tax Law and, in particular, the Spanish doctrinal understandings. The results show that the tax law assumes the net profit measured under the General Accounting Principles, as a starting point for the tax base determination. This fact avoids the duplicate record of economic transaction in the companies, in both domains, fiscal and accounting. Nevertheless, the two dimensions have different objects, so net income may not be integrally considered for tax purposes; legislator makes the taxpayer make the fiscal adjustment to take the taxable income. It is supposed to have extraordinary tax corrections, but Spanish legislator presents a tax code with many exceptions, imposing an increasingly complex Spanish tax system.

Keywords: *Corporate Income Tax Law, Deductibility, Spain, Tax expenses*

1. INTRODUCTION

The expense is the tax base's negative component; in corporate income taxation, it defined as the cost to obtain the business' incomes (García-Quintana, 1949). The tax regulator has not changed the expenses' definition over time, except the corrections that the corporate income tax law imposes, and it can change in each temporal moment. It is difficult to demonstrate the tax expense concept if it does not establish a relationship with the accounting cost's definition, due to the particular importance of the accounting standards in the determination of the taxable basis of the business income tax law (Albá, 2004). The Spanish Commerce Code's Article 36 presents the concept of the tax cost as the decrements in the net equity during the period. It can be under the form of exits or decreases in the assets' value or recognition or increase in liabilities; since they not distributed to partners or owners. The income's concept opposes to the expense's one, is not expense all that is paid out. The cost decreases the equity's economic dimension, so there is an expense when it contributes negatively to the equity's formation. Taking into consideration two premises: first, the accounting profit is the starting point to the taxable base's determination in the direct estimation regime. Second, the accounting net income obtained under the accounting standards is subject to the CIT corrections; so, in principle, the accounting expenses are tax costs in the taxable income's calculation, except in particular situations designed in the CIT law. Spain's CIT Law does not define the concept of accounting expense nor tax expense. Nevertheless, the law presents some essential requirements to predict the expense's deductibility (Albá, 2004). They are taxable costs: goods or materials' purchase, external services, personnel expenses, management expenses, financial costs, depreciation and amortisation, impairment losses, amongst others. The law 61/1978 foreseen the concept of "necessary expense," in the sense of, required for incomes' obtaining. The approval of the corporation tax law (LIS) places this concept aside, to be tax cost is required the correlation with the incomes, and since it is not a liberality. With LIS, the concept of necessary cost became broader, not only the required cost but also correlated with the company's income (Ministerio Economia Hacienda, 2009).

2. THE CIT'S CORRECTIONS

The taxable basis is the accounting profit since correctly determined, corrected according to the LIS requirements, and taking into consideration the tax and the accounting law. Both domains have different functions. The first, to determine the strict enforcement of tax obligations and to observe the receipt of tax revenues; it has as underlying the tax justice's principles, such as the principle of the generality, ability to pay, equality, progressivity, and non-confiscation (Nabais, 2018, Queralt et al., 2019). The second, the accounting law, has the primary objective to reflect the company's financial position, it means to determine the net profit; is based on economic principles such as the going concern, the uniformity, the relative importance, the incomes and expenses' correlation, the accruals basis, amongst others (Flood, 2019, Melville, 2015). The difference between both domains, objectives and inspiring principles evidence the difficulties practices to equalisation between the accounting result with the tax base (Sarmento et al., 2019). Two steps divide the move between the accounting profit and taxable base, first the accuracy in determining the accounting result under accounting law; and second, to make the necessary accounting results' corrections, according to the corporate income tax law (García, 2001). The tax base's determination uses the net profit stated according to the accounting rules and principles, but data are not accepted unconditionally by the LIS. So it imposes a set of adjustments to adapt the accounting data to the tax law's principles and goals. Tax legislator's remissions of the result for determination of the tax base in the CIT are numerous.

Table 1: Tax legislator's remissions of the result for the determination of the tax base in the CIT

Article	Matter
Article 10.3	Tax base's calculation general rules
Article 11.3	Revaluations
Article 17.1	Incomes and expenses' imputation
Article 120.1	Taxpayers'accounting obligations
Article 121.1 e 4	Income's presumption due to the outcrop of goods or rights not declared
Article 122.1	Voluntary accounting revaluations
Article 131	Administration faculties to determine the tax base
"Disposición transitoria primera"	Temporal application of regularization of LIS' extra-accounting adjustments

Source: Author

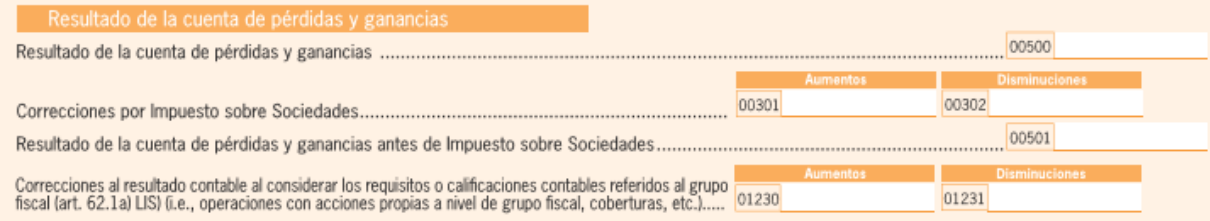
Castro (2000) interprets, minutely, the article 10.3 of the LIS and conclude that there is a need for observation two conditions from the accounting profit to reach the tax base. First, to respect all the requirements established by the accounting rules, and second, to make the tax corrections imposed by the CIT Law, when they distance themselves from accounting. According to Rodríguez (1999), In the moment of taxable base's determination, it is essential on the one hand, have very clear the magnitude of the accounting result, elementary condition for its calculation; on the other hand, to know the implications that derive from every correction to the accounting result. According to article 10.3 of the LIS, although the accounting standards remission act as a general rule to taxable base determination, the correction norms must be considered of exceptional character (Moreno, 2005). The extraordinary practice of the results' adjustments allows the rectification imposed by the tax law, positive and negative extra-accounting adjustments concretizes this correction. Thus, it is the corporate income tax statement that supports adjustments, and not the accounting. Thus, they are the mechanisms to convert the accounting result in a taxable profit, without change the accounting records. The article 131 of the 27/2014 Law establish that for the taxable base's determining, the tax administration shall apply the rules referred to in article 10.3 of the LIS. About the LIS's article n.º 131, Chico de la Cámara (2006) recognizes that this legal disposition give Tax Authority the faculty to qualify

and to interpret the accounting standards because it does not exercise a declarative function of the private rights of a mercantile nature, but merely the economic fact's tax classification for taxable base's determination. There is no doubt, the Tax Authority can act over the taxable income through the pertinent adjusts, but not over the accounting net profit (Ordanza and Ruiz, 2003). The last, is subject to corrections to achieve the result according to the tax law rules, provided that it expressly determines qualification, valuation or imputation's criteria different from those considered in the accounting; thus, when the LIS does not contemplate specific rules for the basis' determining, it should be understood the tax law accepts accounting criteria (Ordanza and Ruiz, 2003). Accounting standards are governed by the generally accepted principles (GAP) in the commerce's code and Spanish accounting law, which may lead to the understanding that the accounting result does not represent the taxpayer's real ability to pay taxes (Chico de la Cámara, 2006). The tax result' calculation from accounting result assumes two premises; first, there is no specific regulation of taxable income and deductible expenses since these will be recognized by the accounting rules, with the corrections the law determines for each case. Second, it will not be possible to find tax valuation rules, so we will also have to resort to the accounting law's valuation rules, and from there, introduce the CIT law's corrections (Ordanza and Ruiz, 2003).

3. THE CIT'S STATEMENT

All the following images represent some parts of the Spanish Corporate Income Tax's statement, model 200. This tax declaration determines the tax to pay by the taxpayer (resident companies and non-resident's stable establishments).

Image 1: The Spanish Corporate Income Tax's statement (Model 200)

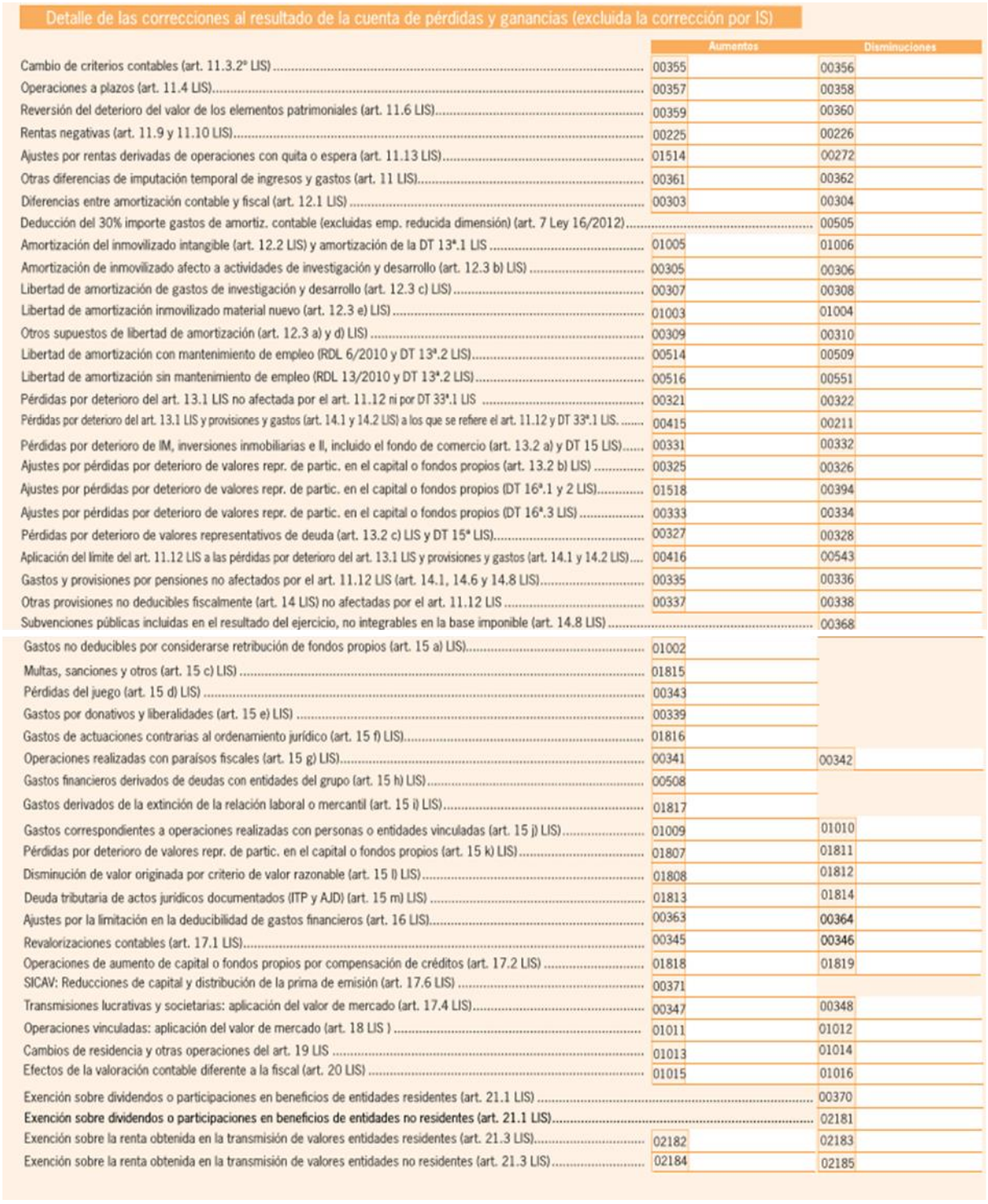


Source: Spanish Tax Authority

This picture is representative of the framework presented at point two of this paper. The first line asks for the gains and losses' result, it means the accounting net profit, and then it evidences the corporate income tax's corrections. It demonstrates that, effectively, the starting point for companies' income tax calculation is the accounting net income. The following pictures represent, as the first one, the LIS's statement. The presentation of it has the main goal to evidence two situations: first, the accounting does not support the tax adjustments, the CIT statement serves to do it; then, to give an idea tax emendations' quantity that the Spanish Law imposes to taxpayers. The adjustments can impose a movement of increase or decrease to the net profit. It means that when the accounting recognizes a cost as a net income's negative element and the taxation does not accept it as a deductible expense, the taxpayer must do an increase correction, in order to eliminate the negative influence in the result.

Image following on the next page

Image 2: The Spanish Corporate Income Tax's statement (Model 200)



Detalle de las correcciones al resultado de la cuenta de pérdidas y ganancias (excluida la corrección por IS)

	Aumentos		Disminuciones	
Cambio de criterios contables (art. 11.3.2ª LIS)	00355		00356	
Operaciones a plazos (art. 11.4 LIS)	00357		00358	
Reversión del deterioro del valor de los elementos patrimoniales (art. 11.6 LIS)	00359		00360	
Rentas negativas (art. 11.9 y 11.10 LIS)	00225		00226	
Ajustes por rentas derivadas de operaciones con quita o espera (art. 11.13 LIS)	01514		00272	
Otras diferencias de imputación temporal de ingresos y gastos (art. 11 LIS)	00361		00362	
Diferencias entre amortización contable y fiscal (art. 12.1 LIS)	00303		00304	
Deducción del 30% importe gastos de amortiz. contable (excluidas emp. reducida dimensión) (art. 7 Ley 16/2012)			00505	
Amortización del inmovilizado intangible (art. 12.2 LIS) y amortización de la DT 13ª.1 LIS	01005		01006	
Amortización de inmovilizado afecto a actividades de investigación y desarrollo (art. 12.3 b) LIS)	00305		00306	
Libertad de amortización de gastos de investigación y desarrollo (art. 12.3 c) LIS)	00307		00308	
Libertad de amortización inmovilizado material nuevo (art. 12.3 e) LIS)	01003		01004	
Otros supuestos de libertad de amortización (art. 12.3 a) y d) LIS)	00309		00310	
Libertad de amortización con mantenimiento de empleo (RDL 6/2010 y DT 13ª.2 LIS)	00514		00509	
Libertad de amortización sin mantenimiento de empleo (RDL 13/2010 y DT 13ª.2 LIS)	00516		00551	
Pérdidas por deterioro del art. 13.1 LIS no afectada por el art. 11.12 ni por DT 33ª.1 LIS	00321		00322	
Pérdidas por deterioro del art. 13.1 LIS y provisiones y gastos (art. 14.1 y 14.2 LIS) a los que se refiere el art. 11.12 y DT 33ª.1 LIS.	00415		00211	
Pérdidas por deterioro de IM, inversiones inmobiliarias e II, incluido el fondo de comercio (art. 13.2 a) y DT 15 LIS)	00331		00332	
Ajustes por pérdidas por deterioro de valores repr. de partic. en el capital o fondos propios (art. 13.2 b) LIS)	00325		00326	
Ajustes por pérdidas por deterioro de valores repr. de partic. en el capital o fondos propios (DT 16ª.1 y 2 LIS)	01518		00394	
Ajustes por pérdidas por deterioro de valores repr. de partic. en el capital o fondos propios (DT 16ª.3 LIS)	00333		00334	
Pérdidas por deterioro de valores representativos de deuda (art. 13.2 c) LIS y DT 15ª LIS)	00327		00328	
Aplicación del límite del art. 11.12 LIS a las pérdidas por deterioro del art. 13.1 LIS y provisiones y gastos (art. 14.1 y 14.2 LIS)	00416		00543	
Gastos y provisiones por pensiones no afectados por el art. 11.12 LIS (art. 14.1, 14.6 y 14.8 LIS)	00335		00336	
Otras provisiones no deducibles fiscalmente (art. 14 LIS) no afectadas por el art. 11.12 LIS	00337		00338	
Subvenciones públicas incluidas en el resultado del ejercicio, no integrables en la base imponible (art. 14.8 LIS)			00368	
Gastos no deducibles por considerarse retribución de fondos propios (art. 15 a) LIS)	01002			
Multas, sanciones y otros (art. 15 c) LIS)	01815			
Pérdidas del juego (art. 15 d) LIS)	00343			
Gastos por donativos y liberalidades (art. 15 e) LIS)	00339			
Gastos de actuaciones contrarias al ordenamiento jurídico (art. 15 f) LIS)	01816			
Operaciones realizadas con paraísos fiscales (art. 15 g) LIS)	00341		00342	
Gastos financieros derivados de deudas con entidades del grupo (art. 15 h) LIS)	00508			
Gastos derivados de la extinción de la relación laboral o mercantil (art. 15 i) LIS)	01817			
Gastos correspondientes a operaciones realizadas con personas o entidades vinculadas (art. 15 j) LIS)	01009		01010	
Pérdidas por deterioro de valores repr. de partic. en el capital o fondos propios (art. 15 k) LIS)	01807		01811	
Disminución de valor originada por criterio de valor razonable (art. 15 l) LIS)	01808		01812	
Deuda tributaria de actos jurídicos documentados (ITP y AJD) (art. 15 m) LIS)	01813		01814	
Ajustes por la limitación en la deducibilidad de gastos financieros (art. 16 LIS)	00363		00364	
Revalorizaciones contables (art. 17.1 LIS)	00345		00346	
Operaciones de aumento de capital o fondos propios por compensación de créditos (art. 17.2 LIS)	01818		01819	
SICAV: Reducciones de capital y distribución de la prima de emisión (art. 17.6 LIS)	00371			
Transmisiones lucrativas y societarias: aplicación del valor de mercado (art. 17.4 LIS)	00347		00348	
Operaciones vinculadas: aplicación del valor de mercado (art. 18 LIS)	01011		01012	
Cambios de residencia y otras operaciones del art. 19 LIS	01013		01014	
Efectos de la valoración contable diferente a la fiscal (art. 20 LIS)	01015		01016	
Exención sobre dividendos o participaciones en beneficios de entidades residentes (art. 21.1 LIS)			00370	
Exención sobre dividendos o participaciones en beneficios de entidades no residentes (art. 21.1 LIS)			02181	
Exención sobre la renta obtenida en la transmisión de valores entidades residentes (art. 21.3 LIS)	02182		02183	
Exención sobre la renta obtenida en la transmisión de valores entidades no residentes (art. 21.3 LIS)	02184		02185	

Source: Spanish Tax Authority

There are numerous the amount of possible accounting profit's corrections. As it is possible to see in image 2 and 3, the CIT predicts many corrections. The taxpayer need to stay attentive to issues such as the depreciation, donations, fines and penalties, operations carried out with tax havens, temporal imputation's differences, financial expenses, game losses, expenses with extinction of the employment relationship, forward transactions, tax benefits, the special conditions to smaller companies, amongst others.

Image 3: The Spanish Corporate Income Tax's statement (Model 200)

Detalle de las correcciones al resultado de la cuenta de pérdidas y ganancias (excluida la corrección por IS) (cont.)

	Aumentos (cont.)	Disminuciones (cont.)
Exención sobre la renta obtenida en los supuestos del art. 21.3 LIS distintos a transmisiones de valores entidades residentes	02186	02187
Exención sobre la renta obtenida en los supuestos del art. 21.3 LIS distintos a transmisiones de valores entidades no residentes	02188	02189
Exención de rentas en el extranjero (art. 22 LIS)	00256	00278
Reducción de rentas procedentes de determinados activos intangibles (art. 23 y DT 20ª LIS)	01822	00372
Obra benéfico-social de las cajas de ahorro y fundaciones bancarias (art. 24 LIS)	00373	00374
Impuesto extranjero soportado por el contribuyente, no deducible por afectar a rentas con deducción por doble imposición (art. 31.2 LIS)	00340	01589
Impuesto extranjero sobre los beneficios con cargo a los cuales se pagan los dividendos objeto de deducción por doble imposición internacional (art. 32.1 LIS)	00351	
Agrupación de interés económico (Cap. II del Tít. VII LIS)	00375	00376
Unión temporal de empresas, ajustes del art. 45.1 LIS	01320	01321
Unión temporal de empresas, ajustes por rentas exentas de UTE que opera en el extranjero (art. 45.2 LIS)	00184	00544
Unión temporal de empresas, ajustes por rentas exentas por participar en el extranjero en fórmulas de colaboración análogas a las UTE (art. 45.2 LIS)	01022	01023
Unión temporal de empresas, ajustes por criterios de imputación temporal (art. 46.2 LIS)	01018	01019
Bases imp. negativas generadas dentro del grupo fiscal por la ent. transmitida y que hayan sido compensadas (art. 62.2 LIS)	01275	01276
Sociedades y fondos de capital-riesgo y sociedades de desarrollo industrial regional (capítulo IV del título VII LIS)	00377	00378
Valoración de bienes y derechos. Régimen especial operaciones reestructuración (capítulo VII del título VII LIS)	00379	00380
Minería e hidrocarburos: factor agotamiento (arts. 91 y 95 LIS)	00381	00382
Hidrocarburos: Amortización de inversiones intangibles y gastos de investigación (art. 99 LIS)	00383	00384
Transparencia fiscal internacional (art. 100 LIS)	00387	00388
Empresas de reducida dimensión: libertad de amortización (art. 102 LIS)	00311	00312
Empresas de reducida dimensión: amortización acelerada (art. 103 LIS y DT 28ª LIS)	00313	00314
Empresas de reducida dimensión: pérdidas por deterioro créditos insolvencias (art. 104 LIS)	00323	00324
Arrendamiento financiero: régimen especial (art. 106 LIS)	00317	00318
Régimen fiscal entidades de tenencia de valores extranjeros (capítulo XIII del título VII LIS)	00385	00386
Régimen de entidades parcialmente exentas (capítulo XIV del título VII LIS)	00389	00390
Montes vecinales en mano común (capítulo XV del título VII LIS)		00396
Régimen de entidades navieras en función del tonelaje (capítulo XVI del título VII LIS)	00397	00398
Aportaciones y colaboración a favor de entidades sin fines lucrativos	00250	00251
Régimen fiscal entidades sin fines lucrativos (Ley 49/2002)	00391	00392
Cooperativas: Fondo de reserva obligatorio (Ley 20/1990)		00400
Reserva para inversiones en Canarias (Ley 19/1994)	00403	00404
Exención transmisión bienes inmuebles (DA 6ª LIS)	00518	00519
Rentas procedentes de transmisión de inmovilizado obtenidas por las Autoridades Portuarias (DA 68ª Ley 6/2018)		01824
Operaciones a plazos (DT 1ª LIS)	00510	00512
Adquisición de participaciones en entidades no residentes (DT 14ª LIS) (**)	00329	00330
Reinversión de beneficios extraordinarios (DT 24ª LIS)	00365	01026
Ajustes por la primera aplicación de la Circular 4/2017 del Banco de España, a entidades de crédito (DT 39 LIS)	02129	02130
Entidades en rég. de atribución de rentas const. en el extranj. con presencia en territ. español (art. 38 TRLIRNR)	00409	00410
Correcciones específicas de entidades sometidas a la normativa foral	00411	00412
Eliminaciones pendientes de incorporar de sociedades que dejen de pertenecer a un grupo	01027	01028
Otras correcciones al resultado de la cuenta de pérdidas y ganancias	00413	00414
Total correcciones al resultado de la cuenta de pérdidas y ganancias (excluida la corrección por IS) (desglose en página 19)	**00417**	**00418**

(**) Para participaciones adquiridas hasta el 21/12/07.

Source: Spanish Tax Authority

4. CONCLUSION

The treatment difference between accounting expense e fiscal cost comes of the goals and principles' difference in the accounting and tax law. The tax domain has the main goal to the revenues' collection under the tax justice principles, the accounting dimension searches to the production of reliable financial position to help users make the right economic decisions. This idea justifies the fact that tax law does not accept some accounting expenses as fiscal spending, and subjects the taxpayer to tax corrections under the corporate income tax law dispositions. The doctrine considers those adjustments must have exceptional character, but a closer look over the tax law and the model 200, it is possible to understand that those corrections are not non-usual practice. The amount of situations that can be subject to adjustments are a lot and may import a considerable complexity in tax Spanish tax system.

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NETWORK COMMUNICATION OF EMPLOYEES AS FACTOR OF PRODUCTION EFFICIENCY

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ABSTRACT
Technical retooling is one of factors of growing enterprise's efficiency. However due to specific historical characteristics of formation and transformation market economy in Russia, process of technical retooling becomes long, what leads to large increasing of new equipment established terms and its rise to optimal point. This paper describes different aspects of the networking process. Authors analyze networking process using empirical data and specific literature of Russian and international researchers. This paper describes macro and micro level of networking. The research's results of employees networking as a method of rising personal efficiency and efficiency of entire enterprise show the importance of networking for modern enterprises.
Keywords: *management, networking of employees, productions efficiency*

1. INTRODUCTION

Technical retooling is one of factors of growing enterprise's efficiency. However due to specific historical characteristics of formation and transformation market economy in Russia, process of technical retooling becomes long, what leads to large increasing of new equipment established terms and its rise to optimal point. A.I. Kukarenko and her co-authors describe in detail the situation when modern mining high-priced equipment in coal strip mine was leaded to optimal point in 5-6 years. But this equipment has only 12-15 years period of full amortization [1]. According to research, which was provided by N.V. Galkina at mining company, the main reason of so long period of new equipment establish is bad connection and coordination (low rating of production communication development) of staff. She recommends developing new creative measures from staff for increasing speed of new equipment assimilation. It means that employees must have necessary skills for autonomous solving of problems connected with new equipment assimilation. [2, p. 143-158]. Authors of article solving the task of connection and coordination of actions of staff by networking of employees' relations based on N.V. Galieva's work and results which describe in previous work of one co-author. (look [3, 4, 5]). Networking means uniting of delinked workers by horizontal links into production net. Horizontal links are effective only if they have stable character, what leads to formation of production net which provides connection and coordination of employees' actions. That process massively increases the speed of new equipment assimilation. In practice, process of creation of connections between employees is performed as a complex of technical, technological, financial, economical and social relations. It designs a difficult of creation of network connections analysis. The result of it is the absence of accessible common methodology of creation of connection network in production process and also the absence of common concept, which allow getting convincing answers to following key questions:

- What is a complex of problems, which will be solved by networking process?
- What purposes of organization will be achieved by networking?
- What benefits will receive the staff as a result of networking?

2. RESEARCH

Specialized literature has metrological developments, which allow us to understand and evaluate the role of networking for increasing production efficiency. Authors as O.U. Uldasheva [6], O.A. Tretyak, [7], S.P. Kush [8] think, that transformation of company employees relations form traditional forms to networking is large extent social task, which is relevant to economical task of increasing production efficiency. The reason of it is hidden in the need to develop specific creative and entrepreneurial qualities, which is the most effective in conditions of close interactions of individual employees due to realization of principle 'One mind is good, but two are better!'. It leads to creation of a different scheme of efficiency growth of enterprise. This scheme is based on relations marketing. The methodological basis of actual concept of networks creation, which is using during analysis of relations marketing, is advised by one of co-authors of this article:

Formation of network of employees connections (staff networking) is networking, what means connecting at certain stages of values production chain based on unity of formal and informal (creative and entrepreneurial) relations of such employees (performers and managers), who provide market promotion of unique and marketing complexes by using their competencies. This process firms up competitiveness of their enterprise [9].

Employees' networking (increasing of coherence and coordination of activities) is taking place through the connecting of individual employees to production processes (integration of production process). In the result, employees begin more effectively use their skills for achieving of goals. Those tendencies' developing is result of modern technologies and equipment spread. This was made by the situation when every employee can't make a competitive advantage by himself. The following situation becoming real, when due to high difficult of using equipment and technologies for guarantee of necessary efficiency production level is raising due to rising of specific staff personal relations role. During staff networking process starting the mobilization of extra resources, which were placed in opportunities of new techniques and technologies. Marked factors demand the creation of new specific methodological approaches for more effective and meaningful using of staff networking. Relationship marketing works as a specific methodological approach, which helps to realize task-oriented creation and supporting of long-term connections between all interested employees in company for supporting the high production level. 'Final result of relationship marketing is a creation of unique nonmaterial assets inside companies and organizations – marketing business networks, which are capable of supply unique goods to market' (O.A. Tretyak [7]). Therefore relationship marketing is a transformation of the entirety of formal and informal connections between employees into his nonmaterial asset. The title 'relationship marketing' shows the main methodological conclusion that connections between individual elements are the main factor, which creates networks. S.U. Barsukov [10] sure that these connections were developed between individual participants of network due to different reasons. It makes relationships stronger and helps them to acticting according to interests of each other. At the same time S.U. Barsukova thinks, the main reasons of developing of different connections is the lack of any resources from individual participants. This conclusion applies to all types of sourses: material-and-technical, energetic, information, social and etc. In this situation the quantity and quality of connection are defined by the level of deficit. It means that connection becoming strong (effective, wide-spread and etc.) when the lack of concrete resource becoming bigger. At the same time S.U. Barsukova underlines, that certain level of lack of connection resources, which designing networks, starts playing certain role. In the result are creating stable networks between independent employees, which live according to

internetworks rules, which are attractive for all network members. This factor creates a nature of employees networking concept of enterprise and other groups of people. When we start to talk about production network, it means that unique equipment, unique technologies, unique materials, unique specialists, unique skills and others are becoming deficient resources. The lack of different resources is the variable factor, which depends on a group of reasons, it means that networks are also liable to different transformations. S.P. Kush', D. Rafinedjad and A.A. Afanasiev highlight connection between network members, which are contingent on the following production processes:

- Economical (conditional of delivery, payment and etc.);
- Judicial (obligations, conditions of cooperation);
- Technical and technological (equipment and technologies of productions, specific features of goods, technologies and business processes and etc.);
- Informational (information about market, partners, technologies, innovations and etc.);
- Social (communication experience, mutual trust, personal emplacement);
- Coordination (plans, strategies, logistic). [8]

Question of stable designing connections is becoming problematic in sphere of networking. Networking connections are transforming and destroying according to different reasons, that follow to independent employee and their groups departure from the network; or destroying of all connections and networks pass out of existence. At the same time the reverse process is also possible. During this process are designing another more effective connections for the current combination of employees at the concrete moment of time. At that moment are creating not only new participants of current networks, but also are creating new networks as independent objects and as different additions and expansions. H. Hakansson and J. Johanson [11] made an assumption that all connections are divided into two categories: strong and stable, weak and unstable. This separation was made in connection with circumstance and depending on the set of executing functions. They argue that strong and stable connections between participants of the network arise during transferring access to own resources to their entire network. These connections must be strong and stable, otherwise the subject does not become a member of the network and does not gain access to network resources. As general, strong connections make material, technical and energetic resources accessible Authors offered to define these connections as network-forming. As general, weak or unstable connections arise during the formation of a network-wide access to information, social and emotional resources. The weakness of these connections manifests itself in absence of the need for immediate use of such resources during technological process in production. The content of transferring resources is changing or losing. However, if weak connection were used in production process, it follows to victory of all members. H. Hakanson and J. Johanson called these connections as network-developing. Network-forming connections usually are not using much. As general, they arise in relation with incoming delivery of materials, storages, with using of any unique equipment with the participation of qualified specialists and production distribution. Network-forming connection create inner circle of every network member. The example of creation network-forming connections in group of workers which consist of installers, welders, drivers and crane operators was analyzed in work of one co-author [9]. This analyze shows that breakdown of any connection follows to motion cessation of the entire work group towards common goal – the construction of structure in the certain place and time. Every network-forming connection not only defines position of certain network member, but also helps achieve common goals. Network-developing connections creates extended circle of network members. As general, there are many such connections which have information, social and emotional nature. It means that connections are connected with education and re-education of employees, distribution of new professional and mass information, exchange of opinions, rating of network member

actions. M. Granovetter in his work 'Interpersonal ties' [12] marked, that weak and unstable network's connections, which are sources of different production uncertainties, lead to creation of creative solutions. Therefore, management should be very attentive to them for effective production development. During solving metrological difficult problem of arising and developing of production networks L. Matson suggests considering for each network member an individual microposition relative to specific partners from network and macroposition relative to the entire network. L. Matson describes microposition according to the following factors:

- Role of concrete network member in relation to other network members, which is defined by his workplace and profession;
- Value of concrete network member for others, which is defined by level of his classification and personal experience;
- Durability, stability of connections of concrete network member with other members, which is defined by his personal characteristics and relation to employment duties to opportunity for his changing to another employee.

L. Matson describes macroposition according to the following factors:

- Functions performed by the concrete network member (volume and types of production operations);
- Relative value of concrete network member as a whole (importance, significance in the short and long term, etc.);
- Durability, stability of connections of concrete member with the entire network (history and motivation of communication with the network);
- Importance of concrete member's relationships with the subject outside the network (insider information, private consultation, material sources) [13].

According to S.U. Barsukova [10] position of each network member is defined by the responsibilities which he performs to others. Usually it is the following responsibilities:

- Relationships responsibility leading to spending of personal resources to supporting necessary current relationships;
- Behavioral responsibility leading to spending of personal resources to formation of their behavior, contributing to the continuation of relationships in short term;
- Responsibilities of the prospect, leading to the spending of personal resources to formation relationships in long term.

As a certain assessment of the degree of fulfillment of responsibilities S.U. Barsukova made a concept of networking trust, which is always exists in tight-knit teams. Then the position of each concrete member defines the level of networking trust to him, it is a consequence of the fact, that not one member of the network participants has the whole information, which is necessary to realization of technological process, therefore, everyone to some extent depends on each other. Dependence of each other and trust imply that all network members realize mutual control. Mutual control implies the threat of the complete disconnection of concrete member from the network in case of losing of trust, this also stimulates the development of self-control. For better understanding of metrological role of connections in an established network, they should be interpreted as a variety of channels through which a variety of resources are transferring in formal and informal way. It leads to one important metrological conclusion: existence of informal component in relationship structure in network is one of the factors for increasing of efficiency in one network and also in the entire enterprise. Moreover, the network is the guarantee that all even informal responsibilities will be fulfilled (S.U. Barsukova [10]).

3. CONCLUSION

Summarizing of all mentioned analyzes of influence of factors, we can formulate two central problems of the methodology of forming networks of the individual employees:

- Creation of effective network connections;
- Search and fixing effective positions within the network of each specific member.
- Since the creation of production employees' networks rise the production efficiency, enterprise managers are becoming interested in networking process. Interest implies the developing of areas of stimulating networking processes. According to mentioned information, stimulating of networks' creation by the enterprise management is advisable in three areas:
- If the technological process in production, conditions for networking are creating for networking of the existing teams; this is especially easily realized in situations, when a teamwork is already exists in production;
- Creation of specific structures at the enterprise (such as business incubator), where employees are trained to operate in a networking environment and the ability to get the certain advantages from this; it is especially effective in the development of innovative products and the establishment of its release;
- Using for networking of well-known social platforms: related, national, «school» and etc., on which are performing as extra factors for bringing together individual employees (look S.U. Barsukova [10]).

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PRIORITY TASKS FOR IMPLEMENTATION OF ECOLOGICAL POLICY OF SOCAR

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ABSTRACT

Oil and Gas Industry with its development plays an important role in solving of many problems in Azerbaijan. Consideration of different factors while forecasting oil and gas complex development offers facilities to analyze all aspects of the problems. Consideration of social factors in the social-economic development of oil and gas sector in the region, in the financial and budget system and in solving other problems plays a considferable role. The article points out the quantitative value of these problems and their directions. It also shows that qualitative analysis in realizing oil projects is very important. The paper reviews influences of economic and social development in the regions on oil projects and possibility of the influences of these projects on the intense level of life mode in the regions. The paper also researches continuality of the project, territorial problems, role and place of local executing bodies in project realization, priorities of social politics, employment, taxes and other aspects of the projects. The article briefly characterizes SOCAR`s activity on fulfilling the laws of preservation of environment and its safety for increasing the ecologically industrial level. SOCAR is a huge complex joining different enterprises and organizations in which harmful, toxic, explosive, and other things are mined, used, refined, kept and transported. SOCAR`s ecologic policy is the main document reflecting priorities which provide preservation of environment and its safety and efficient usage of natural resources. This document defines aspects, stages, priorities, scientific and organizational duties of all future steps to be taken in ecology field.

Keywords: *ecological policy, environment protection, SOCAR*

1. INTRODUCTION

Many aspects exist to evaluating the impact of oil and gas projects on the dynamics of socio-economic development of the territories. At present, it is difficult to establish a common comprehensive intersectoral artificial model of socio-economic system of the territories. Block structure analysis can be used to predict regional development. If oil and gas sector plays a crucial role in the socio-economic development of the region and formation of the financial and budget system (its share is more than 50%) and other fields of the regional economy mainly focus on meeting oil and gas industry needs, predicting oil and gas sector can be a key part of the assessment method by highlighting interrelated indicators in functional blocks (technological, demographic, financial, dynamics of economic development, income and expenditure of the population, employment and living standards - in a concentrated form).

2. QUANTITATIVE ASSESSMENTS

Generally, a quantitative assessment requires an analysis of:

- determining a system of indicators that characterize the status and level of achievement of strategic development goals (strategic and current);
- separation of basic functional blocks in the socio-economic systems of a particular area;
- identifying of critical areas of the interaction of allocated blocks and list of indicators that characterize it;

- determining of proportional dependence between indicators;
- establishing a method for predicting the development of the socio-economic system;
- development of long-term development scenarios of social and economic system and their predicting options;

From the practical point of view, an assessment of the impact of a large-scale oil field project on the socio-economic system of the region can lead to a comparative analysis of the results of calculations for predicting different development variants (during project implementation and in case of refusal). In this case, a comprehensive account of the numerous factors affecting the development of the region and a list of indicators that allows following the state of the economy and economic activity, production dynamics, distribution and use of goods and services, and financial flows are required.

3. QUALITATIVE ANALYSIS

Certainly, a qualitative analysis must be fulfilled for each specific region before building such a method in the implementation of a large-scale oil field project. The main parameters that characterize the impact of the project on the socio-economic situation, nature, direction, intensity and duration of the project, should be identified at the level of quality of assessment, and above all, within the territorial boundaries of the project. Talking about the nature of the project's impact on the socio-economic nature of the area, positive impact cannot be foreseen in advance - it is quite possible that impact on any aspect will be unpleasant. Possible impact directions can be classified as follows:

- finance is related to the change of financial (mainly tax) base of budget formation of the territory;
- stimulating the impact as a rule in the result of activating of economic and investment activities, growing demand for locally produced goods and services, increasing of employment and incomes of the population;
- reflecting purposeful solution of social, specific social problems and vice versa, emergence of new problems and aggravation of previous problems;
- mixed, this time, the process of project implementation will affect almost every aspect of the socio-economic development of the area.

Typically, three levels of intensity of project impacts on living in the area can be identified:

- Possibility of a radical change of the powerful, general socio-economic situation;
- It brings some new medium trends (making some important tendency change), but does not lead to radical changes in the situation as a whole;
- Weakly, it is only possible to partially change the existing development trends in the area or to form new, weakly expressed trends.

According to the duration, the impact of the project on the socio-economic state (beyond its immediate implementation in a time frame) can be assessed as follows:

- Short-term (1-2 years);
- Medium-term (3-5 years);
- Long-term (5-15 years);
- Continuously long-term (over 15 years).

The purpose of the quality assessment is to determine the nature and duration of the project's impact on the dynamics of the socio-economic development of the territories, and its potential

solutions to specific problems. Among the most serious regional problems that can be possible to settle:

- overcoming negative general trends in the dynamics of economic processes (transition from decline and depression to economic development);
- expansion of the sources for local budget funding as a basis for increasing social expenditures (for maintenance and development of non-production facilities, payment of pensions and allowance, assistance to socially vulnerable populations, etc.);
- increasing employment and income of the population, reducing unemployment (taking into account its hidden forms);
- decrease in differentiation / stratification of income of different population groups (interregional, intersectoral, etc.);
- reducing inconsistency in the volume and quality of social services provided to the population living in different territories and settlements;
- creating conditions for maintenance of the economic and cultural life of the population, while improving the quality of life and bringing it closer to common standards.

As for the social aspects of this impact, the situation is quite different. The development of new fields can be done directly in the vicinity of protected areas (or even within the area), in the lands where the local population has historically lived. The process of mastering the farming will affect the way of life of the majority of the population living in the area (it should also be taken into account that social impacts and environmental outcomes are closely linked). And it is unpredictable that this effect will be positive. Unfortunately, the experience of Azerbaijan in these issues does not give us hope that economic development of the territory will not lead to the deterioration of the ecological situation and disruption (or, more precisely, the destruction) of the traditional way of life of the local population. However, no matter what the impact (positive or negative), it will go far beyond the project's time frame. In other words, as a result of the project implementation, the natural conditions of their livelihood will either be protected or degraded for many future generations of the local population. State support is required at the initial stage of the project. So, its direct participants do not have sufficient financial resources to make large investments in infrastructure, and their full repayment can be expected only in a few years, when a high level of oil production is achieved. At the same time, it is difficult to expect capital inflows from capital markets without investing in these funds. Experience shows that the project has a sustainable multiplicative effect on the implementation of the project. Increasing investment activity in the manufacturing sector of the economy and resumption of activity of stagnant industries are contributing to the overall growth of incomes of the working population. As a result, the demand for consumer goods and services grows, which stimulates local producers. The demand for investment complex services in the residential and non-production construction sectors is increasing to a certain extent. Accordingly, the range of working people with increasing incomes is expanding. Then, according to the laws of the market economy, there is a new phase of demand for consumer goods, as well as production and technical products used in the consumer sector (including agrarian). The transition from depression to economic growth will increase budget revenues and, consequently, increase funding for the non-manufacturing sector, improving the financial status of the employees involved and replacing one series with the other. The impact of the project on the socio-economic situation is likely to be long-term and is related to the multiplicative effect. One of its key features is that with each new series, the scale of the project is expanding and moving away from its starting point (from oil production) - where the active or emerging economic elements of the area are increasingly operating regardless of the element that is more independent and initiative of economic development. As part of assessing the overall impact of the oil and gas sector on the socio-economic situation in the region, it is interesting to consider

the possibilities of local executive bodies to establish a system of social protection for the population in the areas where the oil projects are implemented. Thus, the main purpose of the Absheron peninsula's public policy is little different from the social goals of other regions of Azerbaijan at the present stage, and for a long time consists of:

- protection of the maximum favorable environment for human living;
- creation of opportunities for maintenance of health and labor activity of residents;
- providing residents with sufficient resources for living
- provision of necessary social security of residents.

At the same time, specific directions of public policy and especially its priorities, measures and mechanisms of realization depend to a certain extent on the socio-economic status of the population and its specificity. Based on the analysis of the socio-economic situation in the Absheron peninsula, its public policy priorities can be summarized as follows:

- provision of overall improvement of living standards of the population;
- reduction of the significant difference in income, provision of social infrastructure facilities, healthcare and education services;
- orientation of social measures held from a preventive point of view;
- organizing of the social monitoring operation, public policy forecasting and correction system, which are necessary in the rapidly changing conditions of the situation.

The priority of the issue of continual improvement process of living conditions for all segments of the population has been especially relevant in the current period, primarily because of its main purpose. Thus, due to the global financial crisis and the decline in oil prices, incomes of the population have tended to decline over the past few years. The goal of reducing the differences in living conditions, incomes, and social protection among workers in different sectors of the economy is more relevant - in most cases, very serious problems are hidden behind the average, mostly successful figures. In particular, when it comes to the role of preventive aspect in social policy it should be noted that this should be aimed at preventing emerging problems and conflicts, rather than solving them. The priority of social prevention is that the intensive changes (in the years of reform, dynamic changes in the socio-economic situation) in all spheres of life and activity of people are extremely relevant. Development of the concept of development of the system of social protection of the population of the region should be carried out not only in terms of filling the regional financial and budget system, but also within the assessment of the general impact of the oil and gas sector on the socio-economic situation. The social aspects of the use of underground resources should be emphasized in the development of the concept of social protection system of the population of oil and gas fields. The licensing system is of great importance as the mechanism for granting the right to use underground resources. It has significant resources and opportunities to improve the socio-economic status of oil and gas fields. This can only be justified when it comes to small projects, but this is unacceptable when it comes to systematic large-scale projects. For this reason, it is not possible to fully review the terms and conditions of license agreements for fields and areas covered by such projects in the process of developing the concept, but at least it is necessary to "inventorize" and partially review the agreements. This will bring the socio-economic conditions of different (disruptive) license agreements to a common denominator and will create a whole set of measures with social nature. Another aspect is also important in the socially oriented policy of the use of underground resources. Regional executive authorities (municipalities) must take an active role on the issues related to formation of economic mechanisms that regulate the interaction between regional representative offices and central government.

However, it should be borne in mind that oil and gas companies and organizations are responsible for limited social functions in a market economy:

- provision of employment only to the extent required by the staff to perform basic production and commercial functions of enterprises and organizations;
- involvement and use of local labor resources provided that they are competitive only with those from outside;
- payment of taxes and performance of other financial obligations to all levels of budgets;
- creating favorable conditions to form a positive attitude towards their activities by the population.

The solution of the major social problems is the task of the population, municipalities and local executive bodies and they should have all the necessary rights to do so. The analysis of the impact of the project, as well as the scheme of management and financing of social protection in the region, shows that there are few measures to change the situation in the area of social protection. The changes should be more systematic and include issues such as taxation, pricing, inter-budgetary relations and fiscal policy, and the use of underground resources.

4. SOCAR'S ENVIRONMENTAL POLICY

The environmental policy is to reveal hazardous production facilities, identify phased solutions to inherited environmental problems and avoid their consequences, achieve environmental regulations and standards in all production areas, ensure environmental protection and ecological safety while implementing new projects in SOCAR, joint ventures and multilateral contracts. The relevance of the requirements of this document for SOCAR is determined by its operational nature, production, conservation and extraction of natural resources, a direct effect of the main production processes on the state of environment facilities. For this reason, prevention of hazardous situations and environmental measures are often interrelated. These measures can be characterized as double impact measures. On the one hand, implementation of measures for prevention of hazardous situations allows preventing possible environmental damage to the environment as a result of hazardous situations, which has a positive effect on the quality of the environment in general. On the other hand, measures for environmental protection considering application of cleaning facilities such as purifying of soil contaminated with petroleum in the oil fields, the dehydration of lakes and ponds caused by the discharge of surface water, removal of industrial wastes spread widely in the oil fields, prevention of leaks from oil wells and pipes in oil fields, completely stopping entry of contaminated water to the sea from oil refineries, recycling and transferring to sewage systems by purifying water, will reduce the environmental impact of company facilities and at the same time, reduce the risk of accidents at hazardous production facilities. For this reason, the measures listed here and those that are not mentioned can be regarded as measures aimed at enhancing environmental security in the country.

5. ELEMENTS OF ENVIRONMENTAL IMPACT

All over the world, oil and gas industry and oil refinery, petrochemical and other industries related to the industry are at the forefront of the scale of environmental impacts. These effects cover all elements of the environment.

- disturbance of the structure of geological rocks in the deep layers of the earth and contamination of groundwater;
- surface disturbances, destruction of fertile soil and pollution by petroleum waste, etc.
- degradation of flora and fauna habitats;
- pollution of water basins;
- pollution of atmosphere by various toxic gases

- respectively, negative impacts on residential areas and human health.

6. ENVIRONMENTAL IMPACTS IN THE MANAGEMENT STRUCTURE OF SOCAR

SOCAR's management structure includes oil producing, drilling, extraction, oil and gas construction, petrochemical departments, oil and gas refineries, deep foundry plants and subsidiary organizations. At the same time, joint ventures established with foreign companies include drilling, oil and gas extraction, oil refining, transportation and others have an impact on the environment. The environmental impacts of SOCAR enterprises and its joint ventures come from the following facilities and processes. Let us briefly explain them.

6.1. Oil production

There are some adverse environmental impacts in the process of oil production:

- Atmospheric emissions (associated gas-methane, volatile organic compounds, gas flaring, etc.);
- Water use at well equipments and compressor stations, discharge of water and pollutants into surface and underground water, including the Caspian Sea;
- Extraction of surface water of high-mineralization with the addition of oil to the surface;
- Soil pollution by oil and oil products;
- Drilling cuttings and their burial;
- Oil spills as a result of accidents;
- Useless technical equipments, remnants of floating vehicles and solid waste generated as a result of repair and construction work.

6.2. Oil refinery

This industry is a major water consumer. The main atmospheric pollutants are hydrocarbons, volatile organic compounds, sulphur dioxide, carbon monoxide, and nitrogen oxides. The most problematic wastes of the oil refining industry are large amounts of acid goudron, oily synthetic acid and sulphur-alkaline wastewater. The waste caused by the gas extraction and transportation pollute the environment. These are solid particles, sulphur dioxide, nitrogen oxides, methane and other hydrocarbons. Oil-contaminated surface water in the vessels, household fecal water, consumed technical wells, dry debris, oil rags are wastes in other parts of the oil industry, oil terminals, compressor stations, oil transportation. Negative impacts on natural landscapes because of pipeline construction are the reversal of soil lay, disturbance of soil structure, destruction of vegetation. Atmospheric emissions. Large quantities of emissions are pumped into the atmosphere from oil wells. Most of these gases are methane and carbon dioxide that give rise to direct heat effects. SOCAR has begun to implement measures for the capture and use of associated gas (methane), which has increased the transportation of associated gas from the fields to the shore. Measures on new projects are implementing related to these issues.

6.3. Wastewater

Most surface water in the sea and in a land are pumped back into the underground layers to maintain pressure in the oil wells after leaving oil. Some water if used for technical purposes. In the old fields, water is drained by open-channel canals that have absorbed the land. The dirty wastewater ponds and lakes are still existing in the old oil reservoirs and wells in the Absheron peninsula. At the same time, many of the natural lakes of the Absheron peninsula have been contaminated with sewage water for many years as well as surface water with oil. In addition to doing practical work to address the environmental problems inherited from the past, SOCAR plans to build its present and future activities to minimize environmental impacts.

7. CONCLUSION AND SUGGESTION

SOCAR has provided a set of standard measures for the maintenance of equipments, construction elements, mechanisms, which ensure continuity and regular operation of the production process. An analysis of these plans has shown that these measures include recurrent plan-control and maintenance activities. Despite their standard and repetition, these measures are necessary to implement the reconstruction, restoration of wells, water pipelines, oil pipelines, and various types of equipments to prevent environmental contamination and reduce accident rates. The second set of measures is aimed at improving the technical level of the enterprise, which, along with the solutions of technical and technological issues, envisages the introduction of low-waste, resource-saving technologies that can significantly reduce the risk of accidents and protect the environment from the negative impacts of production activities. Such measures include the development and installation of capture system of light oil fractions, the technology of removal of hydrogen sulphide from associated gas, development of technology for utilization of oil cuttings, connection of new wells to oil and gas hermetizing collection systems, application of hermetizing system of wastewater treatment, utilization of residues of chemical reagents, use of anti-corrosion coated tubes and elastic metal-plastic pipes and others. The implementation of any activity requires certain financial costs, which allows classifying the actions to be included in the plan for the Environmental Protection (EP) based on the criteria for its funding.

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THE PRACTICE OF PRESERVING PUBLIC HEALTH IN THE CONTEXT OF SOCIOLOGY

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ABSTRACT

The article is devoted to the results of an empirical study of the practice of preserving the health of residents of the metropolis. The author shows on the basis of literature analysis that the problem of health preservation in foreign and domestic sociology is studied at the macro-and microsocial levels. Despite society's need for healthy individuals, there is no coherent system of health-saving practices for Russians. The reason for this problem is that the practice of preserving health, as a collective in nature, is contained on three levels: institutional, interpersonal and individual. The features of each level are revealed. The institutional level is represented by a variety of collective practices, including medical, social, political, economic, legal, scientific, cultural. The interpersonal level includes interaction at the «doctor» - «patient» level. The practice of preserving health at the individual level is based on the culture of health preservation, which is formed by the ideas and actions of the individual about preserving and strengthening their health, by constructing a culture of self-preservation. The author conducted a study of megalopolis residents to find out how health preservation practices unfold in real life at the institutional, interpersonal and individual levels. The study of the institutional level revealed the problems of inefficient management of health care institutions. At the interpersonal level, the author found problems of unprofessionalism, distrust of the doctor, insufficient culture of interaction with patients. At the individual level, the author identified behavioral strategies that reflect passivity in health-saving practices. Based on the correlation analysis, it was found that often the cause of these strategies is ineffective activity at the institutional and interpersonal levels. The article concludes that it's necessary to develop a level's model of health-saving practices.

Keywords: *health, practice of health preservation, culture of health-saving, doctor, patient*

1. INTRODUCTION

The relevance of the study is due to a significant deterioration in public health, expressed in quantitative terms. Scientific research on ways to preserve the health of Russians is inextricably linked to the problem of their measurement and evaluation. Health-saving practices cannot be measured only by aggregating statistical data, as opposed to indicators that characterize, for example, the level of health development. In this regard, the purpose of this article is to substantiate the idea that the study of health conservation practices should be based on a systematic approach that takes into account the possibility of evaluating practices at different levels, subsystems of health risk zones. It's important to briefly review the theoretical approaches developed in foreign and domestic sociology in order to understand how the research of health saving practices is currently taking place. We point out that in this case, the task of detailed analysis of factors is not pursued, the main goal is to study in General what theoretical approaches are being developed. In General context of this problems, foreign theories can be divided into two groups. The first examines the issues of health preservation at the macro level, the second-at the micro level. The first group includes the teachings of E. Durkheim (Durkheim 1995), M. Weber (Weber 1990), T. Parsons (Parsons 2002). Thus, E. Durkheim (Durkheim 1995) focused on the differences between normal and pathological in society, social diseases and their overcoming. T. Parsons (2002) developed the idea that social balance could be maintained through a social control mechanism that involved both health

organizations and doctors in their workplaces. P. p. Bourdieu (Bourdieu 1998), B. S. Turner (Turner 2001) considered the problem of redundancy of social control in the activities of medical institutions, thus laying the Foundation for the theory of medicalization of society. The first group of theories also includes the work of D. Armstrong (Armstrong 1995, 2002) and M. Fitzpatrick (Fitzpatrick 2008), who described a new phenomenon - the "health market". The same group includes the works of B. Link, J. Phelan, M. G. Marmot, J Makino et al and other scientists. The main idea of B. Link, J. Phelan is to consider social conditions as the fundamental causes of disease (Link, Phelan 1995). M. G. Marmot (Marmot 1986), Makino et al (Pacino 2003) consider social inequality and the impact of the social environment on health. The second group of studies focuses on the microsocial level, which creates opportunities to take a fresh look at health practices. The merit of W. Cockerham is that he focuses on the personal responsibility of the person for the preservation of their health. This responsibility is conditioned by the social and cultural norms of social groups. There is a collective model of health behavior that is limited by gender, age, nationality, social status, etc. (Cockerham 1997). So, in the context of the problem of health preservation in foreign sociology, the factors, determinants, and features of health saving at the macro level are investigated, and various aspects of health deterioration at the micro level are identified and analyzed. In the focus of research interest of Russian scientists, the study of health, culture of self-preservation has appeared relatively recently. But at the same time, the works of Russian scientists can also be divided into the above two groups, covering the macro and micro levels. The first group includes works by L. V. Panova, N. L. Rusinova (Panova, Rusinova 2005), V. A. Medik, A. M. Osipov (Medik, Osipov 2012), A. V. Reshetnikova, O. A. Shapovalova (Reshetnikov, Shapovalova 2008), E. N. Novoselova (Novoselova 2017) and others. Thus, the medical-sociological analysis of public health and health care was conducted by V. A. Medik and A. M. Osipov (Medik, Osipov 2012). L. V. Panova, N. L. Rusinova (Panova, Rusinova 2005) discussed issues of social inequality and access to medical care for different groups of the population. A.V. Reshetnikov, O. A. Shapovalova (Reshetnikov, Shapovalova 2008), E. N. Novoselova (Novoselova 2017) revealed new social contexts of health, disease, care, prevention. In the second group, researchers focus on microsocial factors. Thus, L. S. Shilova (Shilova 2019) N. M. Rimashevskaya (Rimashevskaya 2010) addressed the problem of "self-preservation behavior". The same group includes works devoted to understanding the forms of social activity of patients (brown, N. Rusinova 1999), evaluation of the doctor from the point of view of professional deformation of the doctor's personality (Osipova, Semina 2017). Thus, researchers in Russian sociology analyze problems from a variety of positions, but in General from the position of micro-and macro-levels. The analysis of research in domestic and foreign sociology allows us to conclude that despite the breadth of the problem there is no systematic approach to the justification of existing health saving practices. The author's approach to the study of health-saving practices is based on a systematic approach that allows us to distinguish three levels in the system of health – saving practices-institutional, interpersonal, and individual. Accordingly, health risks can be both at one of the levels and in the entire system of levels. This model doesn't claim to be complete, because, as mentioned above, the main task is to present the idea of the need for a systematic approach to the assessment of practices at different levels, subsystems of health risk zones. Thus, the theoretical reflection allows us to consider the levels of health saving, thereby emphasizing that the preservation of health is a collective social practice, significantly dependent on the factors of institutional, interpersonal and individual levels that reside in certain social conditions and contain certain health risks. Despite the fact that sociology has developed an interest in social processes and cultural trends that characterize health practices, the problem continues to be urgent and requires analysis. There is insufficient research on how health practices unfold in real life at the institutional, interpersonal and individual levels. To some extent, the article is intended to fill this gap.

2. METHODOLOGY

2.1. Research methodology

To study what is embodied in real practices of health preservation at the three levels, we conducted a study of the opinion of residents of Novosibirsk. The study was conducted under the guidance of the author in June 2019 (N=771, of which 399 women and 372 men). A questionnaire was used, the questionnaire contained three blocks of questions, each of which allowed to analyze the levels of health practices. The sample is formed by a three-stage selection of territories.

2.2. Measuring instrument

It's important to study the institutional level not only by objective indicators, but also by means of subjective assessments of residents. Without claiming to be complete, we asked a number of questions that examined some aspects of the institutional level. These included, for example, the following: "In Your opinion, how has the state of health care in the region of your residence changed recently", "Evaluate the degree of satisfaction with the work of health organizations according to the following criteria (presented criteria) , etc. The interpersonal level was assessed on the following questions: "What are the most important qualities a good medical professional should have?"etc. The assessment of the individual level was carried out by means of the following questions: "Please Assess the level of your health", "Do You strengthen your own health?", "Do you play sports?" and others are also given some correlations using Spearman's correlation coefficient.

3. RESEARCH RESULT

3.1. Assessment of the institutional level

Question "In Your opinion, how has the state of health care in Your region of residence changed recently?" it was designed to identify trends in real social practices of health saving. It turned out that for 46.9% of women and 46.2% of men, everything remains unchanged. The problems faced by the respondents can be interpreted as problems that are at the intersection of institutional and interpersonal levels of health practices (see Table.1). On the one hand, this is, for example, the availability of an appointment with a doctor or waiting for a queue for an appointment or procedure, and, on the other hand, the culture of service, courtesy of the staff.

Table 1: Distribution of answers to the question "Degree of satisfaction with the work of health organizations" (%)

Answer choice	Satisfied to an average degree		Seems satisfied	
	F	M	F	M
The attention of healthcare providers to the requests and wishes	**35,3**	**30,4**	30,7	22,0
Service culture, courtesy	**39,4**	**34,0**	22,6	23,9
The interest of medical staff in the results of treatment of the patient	**32,9**	**30,6**	23,6	20,1
Availability of an appointment with a doctor	**29,5**	**23,6**	23,2	22,2

The results of the study show that indicators of the institutional level often cause insufficient satisfaction of respondents. At the same time, indicators of interpersonal level (attention of health workers to requests and wishes, interest of medical staff in the results of treatment of the patient, etc.) reflect the average degree of satisfaction. The responses of the respondents allow us to identify the underlying problems. These include inefficient management of public health organizations.

3.2. Interpersonal level

In this article, we will limit ourselves to some questions that reflect aspects of the interaction between the doctor and the patient. The respondents were asked the question "What are the most important qualities a good medical professional should have?". According to women, a doctor should have a high level of education (65.8%), competence (42.5%), care (34.1%). Men report having a high level of education (64.2%), competence (37.2%), as well as having a long work experience (37.5%). The problem of maintaining health at the interpersonal level, as we see, is often based on the professionalism and competence of the doctor. However, for the successful implementation of health-saving practices at the interpersonal level, from our point of view, there is a need to form a social responsibility for both the doctor and the patient. It is important that doctors have the motivation to improve their professional training also in the aspect of interaction with the patient, in the aspect of reorientation of the patient from risky behavior for his health to health-saving behavior. Speaking about risky behavior for health, we point out that W. Beck in the book "Risk Society. On the way to another modern "(Beck 2000) provides data that today" healthy " are born about a tenth of the world's population. And 61% are between diseases and health in the so-called "third state", so have chronic diseases, without losing their ability to work or capacity. Therefore, today it is necessary that both the doctor and the patient increase literacy and awareness about health problems.

3.3. Individual level

The health system is not able to provide a high level of public health without the direct active participation of individuals. At the same time, it is important for individuals to have a self-perception of their health status. According to the survey, 52.3% of women and 49.2% of men rate their overall health as good. But at the same time, a fifth of women and a fourth of men often have health problems, including 4.6% of women and 4% of men-insoluble. Only one in five respondents indicate that they are extremely ill. In this regard, the respondents were asked what they are doing to preserve health (Table.2).

Table 2: Distribution of answers to the question "Are You engaged in strengthening your own health?» (%)

Answer choice	Male	Female
Yes, I constantly do gymnastics and other physical exercises	22,1	21,1
Yes, from time to time (for example, I go to the pool)	39,9	52,4
No, I don't think I need to do this yet	19,4	13,0
No, I'm not doing anything	18,6	13,5
Subtotal	100,0	100,0

Based on the results of the study, it can be seen that men are less likely than women to engage in health promotion. At the same time, about 27% of women and 40% of men do nothing at all. In General, this may indicate passive behavioral practices in relation to their health. It's worth noting that society creates "samples" of a healthy lifestyle that determine what is necessary for a person to be healthy. One of these examples is sports. To the question "Do you play sports?" we have received the following distribution. 19% of women and 26.3% of men are constantly engaged in sports. From time to time, 46.9% of women and 38.2% of men resort to these activities. Thus, about two-thirds of the respondents in one way or another improve their health through sports practices. The study of the individual level suggests that it is necessary to form a more active position in relation to personal health practices.

4. CONCLUSION

For the real implementation of health preservation practices, it's necessary to develop a level model, which will take into account the diversity of life experience of those parameters that reflect the level aspects of health preservation, evaluated in the future. This task is far from trivial and requires additional theoretical and empirical research. An important set of measures that can change the current picture of health preservation. It's important to develop not only medical, but also psychological studies of health preservation, as well as the development of health-saving technologies, taking into account the best world examples in this field. It's important to develop a mass culture of health conservation. In General, a system of public health management should be deployed. This system must address the institutional, interpersonal and individual levels. Effective state programs aimed at preventive and health measures should be implemented. In this regard, it is important for the media to promote new cultural values and norms related to health. Regular sociological monitoring is also required to identify healthy and risky behavioral health strategies. At the individual level, it's important not only to strive to meet the fashion trends of consumer society, but also to form sustainable values and health standards.

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MOTIVATIONAL ENVIRONMENT FOR PERSONNEL INNOVATIVE ACTIVITY AT COAL-MINING ENTERPRISE: STRUCTURE AND FACTORS

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ABSTRACT

Actualization of employees needs for development and implementation of their intellectual potential in innovative activity is impossible without the development of appropriate motivational environment. A review of publications about the motivational environment of organizations in various fields of activity showed a variety of approaches to determining the content and structure of the motivational environment of innovative activity. Also the review allowed to systematize the factors taken into account in the formation of the motivational environment. Most researchers consider the motivational environment as a set of conditions that determine the direction and amount of the efforts made by employees to achieve the goals of the organization. The author's conceptual approach to the formation of motivational environment for innovative activity is based on the employees' awareness of the organization's opportunities to improve the life quality and threats to reduce it. This approach is aimed at increasing personnel involvement to the generation, development and implementation of innovations. The paper includes the results of scientific research about the employees' perception of the existing motivational environment based on experience of one of the largest Russian coal mining company. It was revealed that employees' awareness of opportunities to improve the life quality and threats to reduce it affects the implementation of their motivational potential and the amount of effort spent on innovative activities.

Keywords: *Motivational Environment, Personnel, Innovative Activity, Coal-mining Enterprise, Opportunities and Threats for Life Quality*

1. INTRODUCTION

A significant part of Russian coal mining enterprises carried out technical and technological re-equipment and they became comparable with competitive foreign coal mining enterprises in terms of equipment level. However, the implementation of transformations only in the field of engineering and technology does not allow the coal mining enterprise to function and develop efficiently in the conditions of constant changes in the external environment. Innovative development becomes a condition and a way to improve the performance of a coal mining enterprise. The essence of innovative development is integrated and consistent development, mastering, dissemination and commercialization of technical, technological and social innovations to achieve the strategic goal of the enterprise - long-term competitiveness - based on the balance of interests of the interacting entities of the enterprise (owner of the enterprise, management and employees). Technical and technological innovations create new opportunities for increasing productivity, efficiency and safety of production, and social ones create the conditions necessary for the full use of these opportunities. An innovative economy imposes certain requirements on the quality of personnel: the priority is to ensure the growth of new knowledge, skills and their application in production, which requires creative abilities (Korkina, 2009).

Creative employees determine the ability of a company not only to adapt to the existing business environment, but to shape it based on its own goals. The increasing role of innovation in the competition leads to the situation when the company needs creative employees more than they need it. In response to this trend, in many corporations the degree of employee freedom of action is significantly increased. In such companies, motives for creative activity and satisfaction from the implementation of creative ideas are higher than material incentives (Slipenchuk, 2009). Every person has creative abilities, but their level and application for the development and implementation of innovations in an enterprise is determined by a number of factors. Based on the concept of A. Maslow (1954), it can be argued that in the first place are the motives and qualifications of employees. In this article, we discussed in detail the motivational component. In psychology, a motive is understood as a material or ideal object, the achievement of which is the meaning of activity. The motive is manifested in the form of specific experiences, characterized either by positive emotions from the expectation of achieving this subject, or negative, associated with the incompleteness of the present situation. To understand the motive, i.e. to incorporate these experiences into a culturally determined categorical system, special work is required (Psychological Encyclopedia, 2020). We adhere to the position of a number of researchers (Volossky, 2007; Gerchikov, 2011) who consider the motive as internal, and the stimulus as the external motivation of a person to any activity. Based on the analysis of the definitions existing in the literature, we consider motives as personal values (social and economic) and unmet needs (tangible and intangible) that encourage the employee to achieve certain goals. Personal values as a system of a person's aspirations, his ideals, life guidelines, moral principles and ideas about his purpose in the world are the dominant factor in life activity and accordingly a source of labor motivation. According to the objective characteristics of phenomena, spiritual (or social) and material (or economic) values are distinguished. Social values may include values of communication, deeds, self-affirmation, moral values, etc. Economic values include those that determine a person's desire for material wealth. Personal values as regulators of human activity are stable, their change is associated with a significant expenditure of time, mental, volitional abilities, etc. Personal values may include, for example, human health. Unmet needs reflect the everyday material and moral needs of a person, which are necessary for him for normal life. In contrast to values, needs can actively change depending on external conditions. In close interconnection, personal values and unmet needs of the employee form the motive of his behavior. So, if obtaining the desired material good implies the commission of a reprehensible act, then a person may refuse this good. The behavior of workers in relation to innovative activity depends on the structure of motives and the level of their intensity. To solve the problem of actualizing the needs of employees in the development and implementation of their intellectual potential in innovation, the development of an appropriate motivational environment is required. The purpose of the work is to clarify the content of the motivational environment and to develop an author's approach to its formation, which is aimed at increasing the involvement of personnel in the development, mastering and implementation of innovations at a coal mining enterprise.

2. THEORETICAL BACKGROUND FOR DEVELOPMENT OF MOTIVATIONAL ENVIRONMENT CONCEPT

The concept of «environment» is widely used in socio-humanitarian research: this is how the market environment is considered in marketing, and the educational and socio-cultural environment is studied in pedagogy and developmental psychology (). These categories are united by the diversity of the components of the environment, their heterogeneity and multidirectionality. From this point of view, the environment should be considered as a social management system (Luhmann, 2002). There are studies on the role of the whole set of environmental factors in the organization of motivation of employees (Abukhait, Pillai, 2017;

Ilyukhin, Ilyukhina, 2019; Shuck et al., 2018). However, it can be stated that the formation of a theoretical concept and the disclosure of the content of the category «motivational environment» is at an early stage of development. A review of a number of research papers on economics, management, and human resource management showed that the motivational environment is considered in the following meanings (see table 1).

Table 1: Overview of approaches to the interpretation of the motivational environment content

Author	The content of the motivational environment
Kaz M.S., Nikitin A.A. (2009)	actions, activities and procedures that reflect the relations of the top management, directors and owners of the organization to motivation and involvement of employees in the organization
Mednik E.A. (2015)	a set of conditions that determine the direction and amount of the efforts made to achieve the goals of the activity
GlazV.N., Glaz Yu.A. (2009)	a set of conditions affecting the efforts exerted by employees in the course of work to achieve the organization's goals, as well as the effectiveness of the work itself
Prostyakov V.V. Skvortsova E.V. (2014)	socio-psychological atmosphere in the organization, which stimulates employees to be active in solving professional problems
Mordvinova E.L. (2016)	a competitive environment in which the conditions for the development of personnel are created with established criteria for evaluating activities based on clearly defined rules for social interaction, with the help of which staff is transformed into employees and associates to create a successful company.
Ryabov S.V. (2010)	an environment that has a set of stimulating factors (material, organizational, psychological, pedagogical, technological) that determine high motivation (a system of internal incentives for action) of both adolescents and the teaching staff of institutions of additional education.
Bocharova T.N. (2011)	a set of motivational factors aimed at maximizing the effectiveness of the results

Source: own processing

Egorova O. (2012) suggests distinguishing two groups of factors of the motivational environment: socio-psychological and socio-economic conditions. The first includes such factors of influence on the individual as social expectations, norms, values, behavior patterns, the communication system of those social groups into which the individual is included through his social roles, social significance and prestige of work, the socio-psychological climate in the workplace team and other factors that reflected in the psychology and interest of a particular employee one way or another. The second group is the conditions for generating income, working conditions (quality and level of technical equipment of production, living and working conditions in the workplace), the level of organization of labor and production. Mordvinova E. (2016) notes that the motivational environment as a system is usually formed due to the interaction of these factors:

1. administrative and regulatory documents (regulations, orders);
2. economic factors (bonuses, perks, benefits, etc.);
3. factors contributing to the development of personnel (training, assessment, career growth, etc.);
4. factors forming the personnel reserve;
5. factors forming the organizational culture (traditions, norms, attitudes, etc.).

Sayapin A. (2016) considers the motivational environment in the aspect of innovation. In his opinion, the motivational environment is a system of interconnected and interdependent components:

- the atmosphere of motives and incentives for innovations is formed thanks to the encouragement of those who offer non-standard ideas; systems of tangible and intangible incentives for personnel to participate in the innovation process of the enterprise have been introduced (Floysand, Jakobsen, 2011);
- innovative infrastructure accumulates knowledge, theoretical and practical experience, and also ensures ergonomic work of the staff as a whole (Hekkert, Negro, 2009);
- creativity potential is created taking into account the assessment, monitoring and development of creative and entrepreneurial abilities of employees, which are necessary for generating innovative ideas (Dul et al.,2011).

Summarizing and supplementing the considered approaches, it is proposed to consider the motivational environment of innovative activity as a combination of the organization's opportunities to improve the quality of life of employees and threats to reduce it, which are recognized by employees and aimed at increasing their involvement in the development, mastering and implementation of innovations. With this approach, the most important component of the motivational environment is incentives actualizing employee motives and allowing to use the organization's capabilities to satisfy them. Incentives generated by the organization without taking into account the motives of employees often become demotivating factors – a zone of disagreement between the actual needs of employees and the organization's ability to meet them, which prevents the involvement of employees in innovation (Gneezy et al., 2011). Involvement - the employee's condition predetermined by his interest and responsibility for achieving the goal of joint activity, which allows directing energy to obtain higher value results.

3. METHODS USED FOR ASSESSMENT OF THE MOTIVATIONAL ENVIRONMENT

Given the author's understanding of the motivational environment, a methodological approach to its assessment is proposed. It is based on a questionnaire of personnel, which reveals the employees awareness of the opportunities to improve the quality of life and the threats of its decline in the aspect of innovation. Two groups of factors are distinguished. Motivating factors based on awareness of organizational capabilities:

- expand the scope of activities;
- build a more effective system of current activities;
- work (get a useful result);
- perform work (perform actions, be busy)

Stimulating factors based on awareness of existing threats:

- life and health;
- reputation;
- loss of time;
- loss of resources.

The assessment is carried out in several stages:

1. Assessment of the degree of influence on the employee of each factor in relation to innovation (critical impact, acute, moderate, weak).
2. Determining the degree of influence of each group of factors.

3. Calculation of the ratio of the influence of motivating and stimulating factors and determining the level of employee involvement in innovative activities. To implement this stage, a characteristic of staff involvement levels in the mastering and implementation of innovations was developed (see table 2).
4. Determination of the total influence of motivating and stimulating factors.
5. Determining the level of use of the motivational potential of the employee as the ratio of the actual and the maximum possible influence of the motivational environment.

Table 2: Description of employee engagement levels

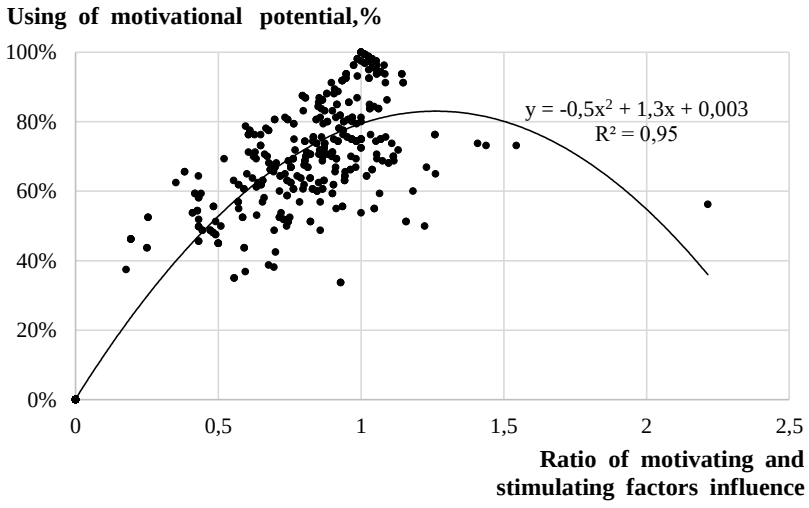
Level	**Ratio of motivating and stimulating factors influence**	**The nature of employee participation in the development/innovative process** (Kilin, 2019)
Enthusiastic/keen	Significant prevalence of motivating factors	Comprehension and creation of impalpable assets (interaction, professionalism of employees)
Involved	The prevalence of motivating factors	Development, creation and use of intangible assets (technologies) and partially impalpable assets (interaction, professionalism of employees)
Attracted	The prevalence of stimulating factors	Development, creation and use of intangible assets (technologies)
Forced	Significant prevalence of stimulating factors	Development and use of tangible assets (equipment)

Source: author's adaptation

4. RESULTS OF ASSESSMENT OF THE MOTIVATIONAL ENVIRONMENT AT THE COAL-MINING ENTERPRISE

The analysis and assessment of the motivational environment is carried out on the example of one of the largest coal mining Russian companies. The following categories of coal mining personnel took part in the study of the motivational environment: 23 managers, 68 specialists (engineers), 395 workers. The results showed that employees' awareness of the opportunities to improve the quality of life and the threats to reduce it affects the amount of effort spent on innovative activities. However, the maximum realization of the motivational potential in innovation is achieved when employees are equally aware of existing opportunities and threats, that is, the balanced influence of motivating and stimulating factors (see chart 1).

Chart 1: The correlation between using of motivational potential and ratio of motivating and stimulating factors influence



Source: author, according to survey data

Based on the survey, it can also be seen that the level of involvement of the majority of respondents is characterized as forced. This fact may be explained by the inconsistency of the incentives offered by the enterprise with the socio-economic needs of workers.

5. CONCLUSION - DIRECTIONS FOR THE DEVELOPMENT OF MOTIVATIONAL ENVIRONMENT AT THE COAL-MINING ENTERPRISE

The motivational environment has a decisive influence on the innovative activity of employees. To concentrate the energy of workers on the development and implementation of innovative proposals that ensure high dynamics of the development of a coal mining enterprise, it is necessary to match the incentives offered by the enterprise with the socio-economic needs of employees and a well-developed system of working with personnel aimed at involving them in the development process.

To eliminate the shortcomings of the motivational environment and neutralize possible threats, it is proposed:

1. Ensuring compliance of enterprise incentives with the socio-economic needs of employees:
   - to increase the objectivity of evaluating the results of the implementation of innovative proposals, as well as the tightness of the connection between wages and work results, allowing to ensure the growth of employee income when achieving the required results;
   - providing new opportunities for staff to participate in the adoption and implementation of important decisions;
2. Create a system in the company for the formation and development of an effective personnel reserve (Artemyev et al., 2018) – involving employees who successfully cope with their duties, having the potential and need for personal growth to the process of improving production and improving the performance of departments, production units, regional production associations and the company.

We believe that the development of the concept of a motivational environment will contribute to the formation of a new view on the solution of theoretical and applied problems of stimulating innovative activities of coal mining workers. The need to develop enterprises through the involvement of personnel in innovative activity determines a special attitude towards employees, in which the realization of intellectual potential of staff in labor activity acquires special importance. A study of employees 'perceptions of the existing motivational environment in a large coal mining company showed that employees' awareness of the existing opportunities to improve the quality of life and the threats to reduce it affects the realization of their motivational potential and the amount of effort spent on innovative activities. In this regard, the object of management should be considered by the personnel awareness of these opportunities and threats, which precisely form, according to our idea, the organization's motivational environment.

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TERRITORIAL BUDGET IN THE SYSTEM OF HUMAN CAPITAL REPRODUCTION: MODERN AND HISTORICAL ASPECTS

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ABSTRACT

The paper touches upon the issue of historical and recent aspects of the human capital development in the Soviet and post-Soviet periods. Researchers discuss the long-term trends of the reproduction of territory human capital and offer the structure-logical model that shows connection between the reproduction of human capital processes and budget flows. The paper aims to assess the impact of the territorial budget policy on human capital in different historical periods. The study purpose is to identify some development stages of human capital in different historical periods. The principal research methods are historical comparison method and synthesis, statistical, economic and mathematical methods. Drawing on the provided archival data the authors propose the algorithm that enables to assess the impact of the budget policy on human capital in different historical periods. Based on the availability of statistical data the authors examine trends and structure of the social expenditure city budget in Chelyabinsk between 1970 and 1980. The authors further examined city budget performance reports in period from 2009 to 2018. It is estimated that the social expenditure increased significantly. However, there are some factors limiting the increase the efficiency of human capital reproduction. In order to solve these problems, it is necessary to provide a personalized access to budget flows by creating a unified database. The findings of the study will probably help to increase the public interest of the all-round development of human capital that becomes the main driving force of changes that have been rapidly taking place in recent years.

Keywords: *Human capital, Reproduction of human capital, City budget, Budget expenditures, Budget revenues*

1. INTRODUCTION

"Human capital" category is well-studied in economic science. Furthermore, it seems that correlation between human capital and its territorial budget merits special attention. Thus, such correlation and mutual influence might be also studied in context of different historical periods.

There are several factors that deter the research of human capital reproduction such as specification of collection methods, historical data processing methods, difficulties in data collection and interpretation, lacunas in chronology and archive data. Consequently, the research is restricted to the time of just two latest decades. Nevertheless, the review of literature devoted to different historical aspects of human capital development enabled to reveal a range of both foreign and Soviet studies on the topic. (Squicciarini, Voigtlander, 2015), (Sadeghi et al 2018), (Grinenko, 2017), (Belloc at al 2018), (Rocha at al 2017). The study of Squicciarini, Voigtlander (2015) merits special attention among the studies mentioned above. It is devoted to special features of human capital development and its correlations with industrialization process in XIX century in France. Iranian authors studied long-term tendencies of foreign direct investments impact on human capital relying on data collected by cases in 26 countries which are members of the Organization of Islamic Cooperation during the period since 1970 till 2014 (Sadeghi at al 2018). Grinenko (2017) made an evaluation of human capital based on federal areas and regions of Russian Federation during the period since 1998 till 2014 due to dynamics of a range of statistical indexes. In general, reproduction of human capital on regional and municipal levels is considered to be one of the major issues of modern economic science (Marginson, 2019), (Sycheva et al 2019), (Anopchenko et al 2018), (Lazareva et al 2020), (Tokareva, 2007). Whereas territorial level provides a certain standard of living of an individual and develops conditions needed for their living, professional and personal growth, the study of reproduction of human capital on a regional level is highly important. A certain territory provides major social infrastructural opportunities and enable necessary conditions for comprehensive development of a personality.

2. HISTORICAL TENDENCIES OF REGIONAL HUMAN CAPITAL DEVELOPMENT

The research of historical and modern aspects of human capital reproduction was carried out within university cross-disciplinary project of Chelyabinsk State University. The research was carried out under the leadership of PhD Bakanov (major in Historical Science). Based on archive data extracted by Chelyabinsk Oblast United State Archive historians, the research on long-term tendencies of city budget expenditure impact on Chelyabinsk human capital during Soviet and Post-Soviet period was carried out. Common approach providing an algorithm of historical comparison was developed in order to historically compare the impact of budgeting mechanism on human capital on a territory (figure 1). The stages of an alleged algorithm are divided into two levels. The first level covers both institutional and economical aspects. It presents consideration and comparative analysis of the whole budget system, its functional principles, revenues and expenses division into institutional levels. Modern revenues and expenses classification systems, budget implementation in context of revenues, the procedure and mechanism of financing of governmental and municipal institutions are important to be studied on this level of research. The second level is an analytical one. The impact of budget policy on territorial human capital formation and development is anticipated to be studied on this level. The dynamics of expenditure on social sphere (during the Soviet period it is relevant to expenditure on socio-cultural events) and its structure is expected to be evaluated and comparatively analysed during the research. In addition to that, analysis of budget expenditures per capita and comparison of these indexes of different historical periods are also important to be carried out during the research. Adherence to the given algorithm requires analysis of the USSR budget system during 1950-1958. At that period Soviet budget system was divided into three levels. Governmental budgets of the Soviet Republics and the general USSR budget were related to the high level. Revenues and expenditures of the high level were separately counted using dedicated Classification of revenues and expenditures. Governmental social insurance budget was also related to that level.

Republican budgets of Soviet Republics and autonomous regions' budgets were related to the middle level. Local budgets including area, city and village levels were related to the low level. There were more than 52 thousand budgets in USSR in 1961 including 15 budgets of Soviet Republics, 136 area budgets, 1682 city budgets, 3888 region budgets, 2956 village budgets and 43704 rural area budgets (Nikitina, 1961).

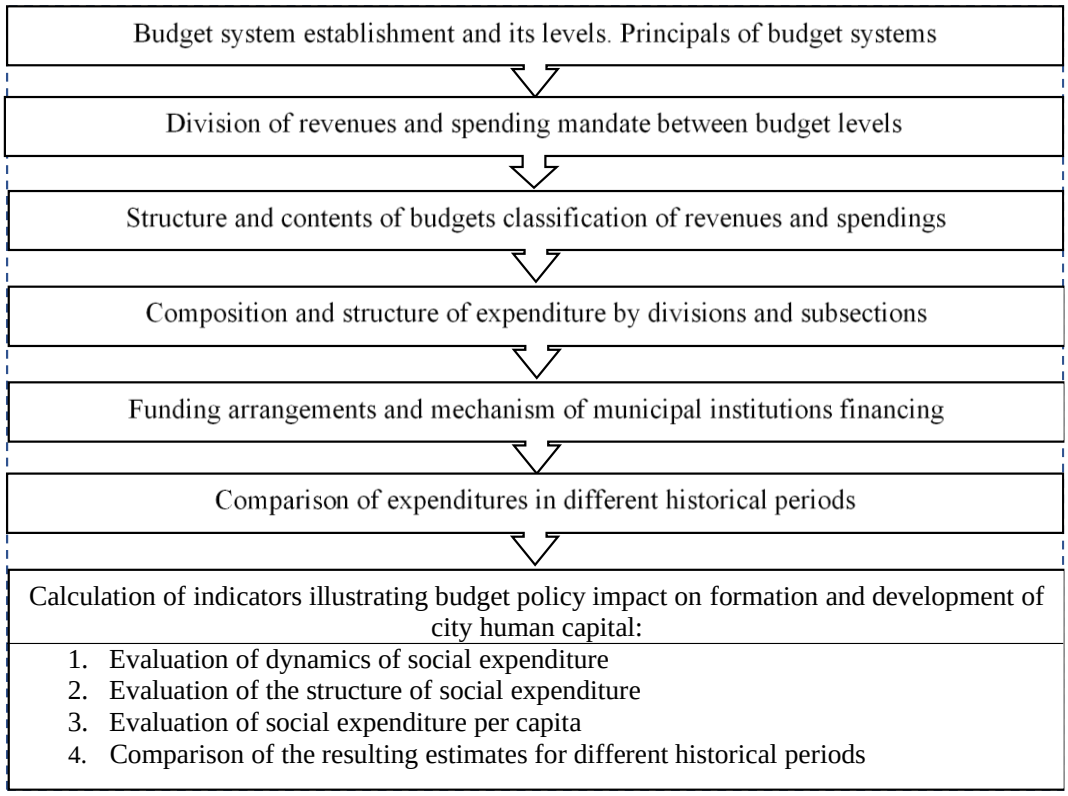

Figure 1: Algorithm of the evaluation of budget policy impact on human capital in different historical periods

Regional budget resources were allocated for regional and local industrial enterprises financing. In addition to that, regional budget resources were allocated for housing and communal services, road maintenance, agricultural enterprises. Socio-cultural events, local educational institutions, healthcare, social welfare were also predominately financed from regional budgets. More than 40% of socio-cultural expenses prescribed by USSR governmental budget, significant percentage of expenses on utilities and landscape improvement were financed by local budgets. Actually three quarters of local budget resources were allocated for socio-cultural events - 74,1% and 68,4% in 1956 and 1958 respectively. Therefore, local budgets had to cover the needs for socio-cultural and household sectors financing (Nikitina, 1961). Despite significant differences in goals and technologies of human capital development in different historical periods, human capital reproduction stages demonstrates common aspects notwithstanding the historical and regional background.

3. MECHANISM OF AN EXPANDING HUMAN CAPITAL REPRODUCTION IN A TERRITORY AND ITS CORRELATION WITH BUDGET REVENUES AND EXPENSES

The mechanism of an expanding human capital reproduction defines the impact and degree of influence of territorial budget policy on territorial human capital in context of revenues and expenses. It illustrates the correlation between budget flows and major stages of formation, protection and development of human capital (figure 2).

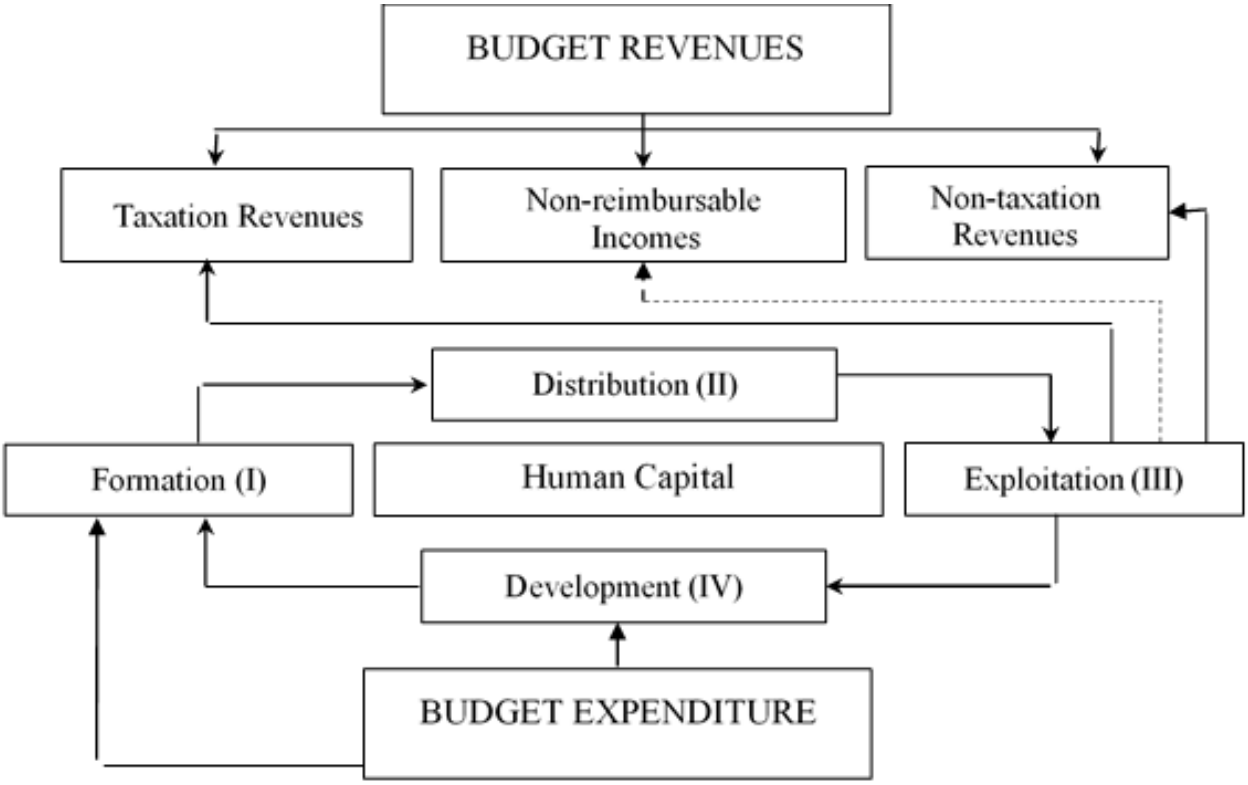

Figure 2: Correlation between human capital reproduction and budget flows

The given structured logical paradigm demonstrates correlation and mutual impact of different stages of human capital reproduction and budget flows. The first stage called formation represents generation of the key elements of human capital including physical well-being, standards of health, educational level, moral and cultural values, professional skills, etc. The volume of budget expenditures predominantly influencing external factors of human capital reproduction such as environment, economic conditions, cultural level, historical background and safety level is among key factors of the stage. Territorial and industrial placement of human capital is implemented on the second stage called distribution. The next stage called exploitation allocates human ability to work. It provides financial compensation for individuals participating in economic processes. Such financial compensations enable individuals to pay taxes and other fees which generates budget revenue base. Furthermore, budget revenue is being distributed due to spending mandates of authorities. Budget expenditures enable to develop human capital by developing its new quantitative and qualitative features (Tokareva, 2007). Consequently, it provides rise in income of both individuals and the society in general. Budget policy implementation is realized by the means of budget mechanism including both budget resources allocation and identifications of expenditure principles. Budget mechanism enables to allocate revenues in territorial budgets and to use the funds by budget process participants. Impact on human capital reproduction is made by budget flows management via such processes as planning, territorial budget predicting and its exploitation by revenues and expenses.

4. IMPACT OF TERRITORIAL BUDGET EXPENDITURES ON HUMAN CAPITAL

Numerous researchers were focusing on evaluation of indicators representing various aspects of human capital formations and development (Belkin et al. 2011), (Lokosov et al. 2015), (Gurban & Myzin 2012). According to significance and importance of social expenditures in context of budget policy implementation and its impact on human capital evaluation, the following indication might be introduced (Tabl.1):

Indicator	Formula for calculating
Share of social expenditures within territorial budget total costs	Expenditures on social sphere / Total expenditures
Social expenditures per capita	Expenditures on social sphere / Population
Share of expenditures on healthcare within territorial budget total costs	Expenditures on healthcare / Total expenditures on social sphere
Expenditures on healthcare per capita	Expenditures on healthcare / Population
Share of expenditures on education within territorial budget total costs	Expenditures on education / Total expenditures on social sphere
Expenditures on education per capita	Expenditures on education / Population
Share of expenditures on culture and mass media within territorial budget total costs	Expenditures on culture and mass media / Total expenditures on social sphere
Expenditures on culture and mass media per capita	Expenditures on culture and mass media / Population
Share of expenditures on social welfare within territorial budget total costs	Expenditures on social welfare / Total expenditures on social sphere
Expenditures on social welfare per capita	Expenditures on social welfare / Population
Share of expenditures on physical education and sports within territorial budget total costs	Expenditures on physical education and sports / Total expenditures on social sphere
Expenditures on physical education and sports per capita	Expenditures on physical education and sports / Population

Table 1: The impact of territorial budget expenditures on territory's human capital reproduction

During the period from 1971 to 1980 Chelyabinsk population exceeded one million people. According to Bakanov S.A., this period merits special focus. Due to statistical data, Chelyabinsk population comprised 875,2 thousand people in 1970; 989,1 thousand people in 1976; 1032,1 thousand people in 1977; 1067,1 thousand people in 1980 respectively. Consequently, population growth comprised 121,9% during 1971-1980. (Bakanov & Botova 2017). Furthermore, let us consider the way Chelyabinsk city budget expenditures on socio-cultural events have changed during that period and compare the data with the USSR local budget statistical data (Table 2):

	1971		1972		1973		1974		1975	
Expenditures on Socio-Cultural Events	Total	Percentage %%	Total	Percentage %%	Total	Percentage %%	Total	Percentage %%	Total	Percentage %%
USSR Local Budgets, mln rub	20 231,9	66,5	21 241,6	66,0	22 579,4	67,1	23 616,9	64,9	24 686,5	65,7
Chelyabinsk City Budget, thousand rub	61,4	58,7	62,8	56,9	67,0	62,9	70,4	61,9	71,9	58,1
	1976		1977		1978		1979		1980	
Expenditures on Socio-Cultural Events	Total	Percentage %%	Total	Percentage %%	Total	Percentage %%	Total	Percentage %%	Total	Percentage %%
USSR Local Budgets, mln rub	25 428,3	64,0	26 412,4	62,3	28 004,3	63,0	28 939,1	63,3	30 068,5	63,4
Chelyabinsk City Budget, thousand rub	73,4	58,7	78,3	57,4	78,6	57,7	88,4	66,7	88,6	60,9

Table 2: Expenditures of both the USSR local budgets and Chelyabinsk city budget on socio-cultural events in 1971-1980.

Therefore, the share of Chelyabinsk city budget expenditures on socio-cultural events comprised 58-62% while expenditures on the same industry in other USSR regions comprised approximately 63-65%. Overall, during the decade local budget expenditures on socio-cultural events in different USSR regions comprised 251 208,9 mil rubble and 64,3% of total budget expenditures. Chelyabinsk city budget expenditures on the same field comprised 740 665,6 mln rubble and 60% of total budget expenditures. Consequently, share of Chelyabinsk budget expenditures on socio-cultural events is 4% less than indexes of other regions. Generally, this cost type within the USSR governmental expenditures comprised 35,1%. Therefore, it might be concluded that local budget expenditures were socially oriented. Let us analyse the dynamics of Chelyabinsk city budget expenditures on socio-cultural events in 1970-1980s due to the algorithm presented on table 2.

	1971		1972		1973		1974		1975	
Chelyabinsk City Budget Expenditures on Socio-Cultural Events	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%
	61 355,4	100	62 779,0	102,3	67018,5	106,8	70424,4	105,1	71857,6	102,0
	1976		1977		1978		1979		1980	
	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%1
	73 394,0	102,1	78 340,6	106,7	78 557,8	100,3	88 380,4	112,5	88 557,9	100,2

Table 3: Chelyabinsk city budget expenditures on socio-cultural events since 1971 till 1980 (thousand rubble)

According to the data shown above, there is a positive trend in Chelyabinsk city budget expenditures on both in general and on socio-cultural events. On the average, it was increasing 3,8% annually. During the period of 1970-1980s Chelyabinsk city budget expenditures increased 44% in comparison to 48,6% in case of the USSR local budget expenditures. Let us analyse the dynamics of Chelyabinsk city budget expenditures on social sphere during the period of 2009-2018 using the approach implemented above (Table 4):

	2009		2010		2011		2012		2013	
Chelyabinsk City Budget Expenditures on Social Sphere	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%
	11 055	100	14 245	128,9	17 110	120,1	18415	107,6	21 860	118,7
	2014		2015		2016		2017		2018	
	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%	Total, mln rub	Growth Rate %%
	23 055	105,4	23 481	101,8	25 113	107,0	26 097	103,9	29 486	113,0

Table 4: Chelyabinsk city budget expenditures on social sphere in 2009-2018

According to the figures shown above, Chelyabinsk city budget expenditures on social sphere increased almost three times from 11 bln rub till 29,5 bln rub during 2009-2018. Nevertheless, the growth was not stable and remained on low level some years. For example, it comprised 101,8% in 2015 and 128,9% in 2010 in comparison to the previous year. On the average, the growth rate comprised about 10% during the decade. Furthermore, let us evaluate the structure of Chelyabinsk city budget expenditures on social sphere, compared to 1977. To make an evaluation the data from Chelyabinsk budget execution report (2016-2018) is exploited (Table 5):

Indicator	1977	2014	2015	2016	2017	2018
Expenditures on social sphere, mln rub	73	23 055	23 481	25 113	26 097	29 486
Share of social expenditures within territorial budget total costs, %	58,7	60,4	79,3	80,1	78,1	75,7
Social expenditures per capita, rub	71	19 715	19 842	21 068	21 767	24 531
Expenditures on healthcare, mln rub	41	790	757	687	861	669
Share of expenditures on healthcare within territorial budget total costs, %	32,7	3,4	3,2	2,7	3,3	2,27
Expenditures on healthcare per capita, rub	40	676	640	576	718	557
Expenditures on education, mln rub	31	15 311	15 503	16 517	16 153	19 227
Share of expenditures on education within territorial budget total costs, %	24,1	66,4	66,0	65,8	61,9	65,2
Expenditures on education per capita, rub	30	13 093	13 100	13 857	13 473	15 991
Expenditures on culture and mass media, mln rub	0,9	447	434	467	568	670
Share of expenditures on culture and mass media within territorial budget total costs, %	0,7	1,9	1,8	1,9	2,2	2,3
Expenditures on culture and mass media per capita, rub	1,0	382	367	392	474	557
Expenditures on social welfare, mln rub	0,5	4 769	5 271	5 839	6 069	6 192
Share of expenditures on social welfare within territorial budget total costs, %	0,4	20,7	17,9	18,6	17,9	21,0
Expenditures on social welfare per capita, rub	0,5	4 078	4 454	4 898	5 062	5 150
Expenditures on physical education and sports, mln rub	…	1 676	1 416	1 548	2 397	2 656
Share of expenditures on physical education and sports within territorial budget total costs, %	…	7,3	4,8	4,9	7,1	9,0
Expenditures on physical education and sports per capita, rub	…	1433	1197	1299	1 999	2 209
Expenditures on environmental protection, mln rub	…	62	50	55	49	72
Share of expenditures on environmental protection within territorial budget total costs, %	…	0,2	0,2	0,2	0,1	0,2
Expenditures on environmental protection per capita, rub	…	53	42	46	41	60

Table 5: Structure of Chelyabinsk city budget expenditure on social sphere in 1977, 2009-2018

The results of the reports indicate the share of social expenditures within Chelyabinsk city budget total expenditures in 2014 are comparable with the results of 1977 (58,7% and 60,4% respectively), but during 2014-2018 the index has increased significantly on average 17,9%. In addition to that, the share of expenditures on education has increased more than 2,5 times in comparison to 1977. The share of expenditures on culture and social welfare has increased 3,3 and 52,5 times respectively in comparison to 1977. The growth shown stimulates reproduction of human capital but a range of deterring factors constrains it. To start with, there is a significant decrease in share of expenditures on healthcare within total social expenditures. Expenditures on healthcare comprised 32,7% in 1977 in comparison to 2,27% in 2018. Furthermore, expenditures on environmental protection do not change actually and comprise not more than 0,2% within total social expenditures. The authors conclude that evident increase in expenditures on social sphere both in dynamics and structure demonstrates budget allocation to such human capital reproduction stages as formation and distribution while the stages of exploitation and development stay hidden and requires more focus from authorities and city management.

5. CONCLUSION

The study of human capital reproduction on a territorial level is growing in importance in modern economic science. The process of human capital reproduction takes place on some certain territory. Consequently, comparison of correlation between territorial budget and human capital reproduction in various historical conditions is of interest. The common approach in the form of algorithm of various historical periods comparison was developed. The authors of the study presented a structured logical paradigm of correlation of different stages of human capital reproduction and budget flows on a certain territory. During the study the increase of Chelyabinsk budget expenditure growth pace on social sphere was revealed. Thus, though in 1970-1980s annual growth rate was 3-3,5% per year, in 2009-2018 annual growth rate increased till 10% approximately. Furthermore, the structure of the city budget has changed. The share of expenditures on social sphere has noticeably increased within city budget total expenditures. Thus in 1977 and 2014 the share of expenditures on social sphere comprised about 60%, but since 2014 till 2018 the share of such expenditures increased as much as a quarter and reached 75%. the largest increased has been accounted for educational and cultural industries. The authors highlights that despite the significant increase of city budget expenditures on social sphere, there are certain factors deterring the growth of effectiveness and qualitative development of human capital. Environmental issues, population decline, migratory exodus of young people to other regions are among the huge range of issues influencing human capital reproduction. In order to solve accumulated issues and contradictions, the authors suggest the improvement of budget mechanism relying on maximized personification of budget flows due to demands of an individual as a human capital possessor. The authors recommend using the potential of digital economy to personalize territorial budget revenues and expenditures. To implement the idea the authors suggest developing a road map providing the following actions: to develop a personalized database of some territory's human capital; to establish a common expertise in human capital assessment and management and to provide staff with appropriate qualification; to develop the evaluation system of correlation between territorial budget expenditures and human capital. The further line of research might be the evaluation of effectiveness of budget expenditures on human capital and focusing on the quality of human capital reproduction, especially on the stages of exploitation and development.

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TOWARDS MULTI-LEVEL FRAMEWORK FOR ANALYSING ORGANISATIONAL INNOVATION USE

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ABSTRACT
In this era of Information and Communication Technology (ICT) driven globalisation, the use of information system innovations became the 'live-blood' in modern business competitive environment. This study, sought to conceptualise the configural collective information system innovation use, herein, referred to as Stock Ordering System (SOS) as multi-level construct at the organisational context. SOS is mutually used by four diverse organisations for their respective business functions. Each organisation, the rural Small and Medium Enterprises (SMEs), Infopreneurs, Warehouse, and Logistics Partner present a diverse level of analysis. At each level of analysis, we shall; a) explore and describe the factors influencing the stock ordering system use; b) explore and describe how the roles of users and their cross-level relationships could influence the stock ordering system use; lastly, c) to determine and describe the role of organisational context and the form it manifest in stock ordering system use. The Burton-Jones and Gallivan's Theoretical Model of System Use and Adaptive Structuration Theory (AST), Task Technology Fit (TTF) provide the theoretical foundation of this case study research, which follows the qualitative, cross-sectional and interpretivist scholarship stance. In conclusion, the envisaged conceptual multi-level theoretical framework for organisational innovation use is presented and discussed.
Keywords: *Multi-level Research, Stock Ordering System (SOS) and Organisations*

1. INTRODUCTION

In this era of Information and Communication Technology (ICT) driven globalisation, the adoption and use of information system innovations is considered of paramount importance to measure the extent on which developing countries and/or organisations grow and progress (Crossan and Apaydin, 2010, Haag et al., 2015, Abualloush, Bataineh, and Aladwan, 2017, and Zhang, 2017). Having a comprehensive knowledge on organisational information systems innovation use and being able to enhance its business value is, arguably, pivotal to information systems and organisational science research domains (Costa et al., 2013). However, this study follows the information systems research stance; i.e., the study of complex phenomena which entails interplay between information and communication technologies (ICTs) and human actors are explored (Aubert et al., 2008 and Bélanger et al., 2014). Early scholar's, Lewin (1951) made efforts to conceptualize and study organisations as multilevel systems and Lucas, (1975) studied when and why information systems innovation delivers benefits to organisational members. In this study, we intend to embrace Lewin and Lucas endeavour's through studying and conceptualising the organisational information system use as a multi-level phenomenon. Organisational innovation use it has been much explored on many aspects of system use at single level of analysis, thus individual, group, and/or organisational level (see examples: Lucas, 1974, Davis, Bagozzi, and Warshaw, 1989, DeLone and McLeane, 1992,

DeSanctis and Poole, 1994, Massetti, 1996, Lucas, 1999, Orlikowski, 2000, Venkatesh et al., 2003, DeLone and McLeane, 2003 and Kraut, 2003). Nevertheless, the knowledge contribution emanating from single level studies deemed to be pivotal, in organisational and information systems research context, studying each level in isolation from each other, may give rise to disconnected, incomplete, and misleading perspective of the actual information system innovation use (Rousseau, 1985 and Burton-Jones and Gallivan, 2007). Organisational information system innovation use research fallacies emanating from single level studies, the multi-level theories redress them through exploring and analysing the synergy amongst levels, with sound theoretical base and presenting the phenomenon under investigation as a multi-level construct (Goodman, 2000 and Burton-Jones and Gallivan, 2007).

2. WHAT IS INNOVATION?

Innovation is broadly considered as organisation's critical source of competitive advantage in a dynamic business market Tushman and O'Reilly (1996), and Dess and Picken (2000) and its capability as appropriate instrument to measure the organisation's performance (Mone *et al.,* 1998). In simple terms, innovation refers to the process of creating new ideas and putting them into practice and it can either be process or product and/or service (Boer and During, 2001; McKeown, 2008; Mbizi *et al.,* 2013, and Abualloush, Bataineh, and Aladwan, 2017). The product and/or service innovation aims at changing the fundamental structure and performance characteristics through improving, developing, and/or producing a completely new model while the fundamental premise behind the process innovation aims at developing a new process in the production of products or enhancing the existing processes, or as a set of activities that improves or transfer processes used in the production and/or mode of ordering/delivery of goods and services leading to cost effective measures, minimizing turnaround time, and improving quality and flexibility of the innovation (Crossan and Apaydin, 2010). In this study, we follow the process innovation stance, as the stock ordering system has improved the traditional and manual process of ordering stock products which was costly and time consuming. However, Avgerou (1996) postulate that the organisational innovation should not solely be seen as an element for economic growth but as an emancipation from efforts; thus, the operational functions at each organisational level as a unit of analysis. The subsequent sections systematically describe the innovation use at the organisational level and organisation as unit of analysis.

2.1. Organisational Innovation Use

Organisational innovation refers to the execution of a new organisational method in performing its business functions (the use of SOS as the new business practice), workplace organisation or external relations (managing synergy between diverse organisations). In this study, we analyse the use of stock ordering system, the organisational innovation used at each organisational level, herein referred to as multi-level analysis. Nevo and Wade, (2011) and Schryen (2013), define the value of organisational innovation as the impact on the return on investment on a particular information system asset on the multi-level performance and capabilities of economic entities at each organisational level in a given social system. In contrary, More and Hartley (2008) postulate that the organisational innovation value is broad and difficult to define due to the paucity of a substantive theory to explain its determinants and that is what motivates this study, to conceptualize a multi-level theoretical framework for stock ordering system use at each organisational level. In this multi-level research study, each level presents a unique dimension of stock ordering system use. This phenomenon, renders organisational innovation use hard to define, as there is the dearth of common definition encompassing multi-levels (Zigurs, 1993; DeLone and McLean, 2003, and Burton-Jones and Straub, 2006). However, to redress the situation, Burton-Jones and Gallivan, (2007) posit that organisational innovation use at any level of analysis comprises of three elements: a) a user, the subject using stock ordering system;

b) system, SOS as organisational innovation being used, and c) task, the function that has to be performed. The pair further drew on these elements to derive all-inclusive definition of organisational innovation use as, user's employment of organisational innovation (SOS) to perform a given task. This definition allows organisational innovation use to be measured in diverse ways, such as; user-centric, measuring user's cognition during use; organisational innovation-centric, measuring information system features being used; lastly, task-centric, measuring the tasks which information system is being used to perform. In this study, we measure the SOS usage through user-centric stance as the phenomenon under investigation in its natural setting, where it manifests. Thus, at each level of analysis, we focus on each user's cognition patterns during organisational innovation use. This study further subscribes to IS research school of thoughts, studying the interaction between human actors and technology to perform a given task (Aubert et al., 2008 and Bélanger et al., 2014), which implies that the user, technology, and task are the basis of studying organisational innovation use (Burton-Jones and Gallivan, 2007). Each organisation, has one dedicated SOS user, hence the organisational innovation is being used periodically; thus, to basically provide the structure for facilitating the process of ordering stock products (Bélanger et al., 2014). However, at the Warehouse, the SOS user will require coordination among other staff for preparing orders. In pursuit to conceptualise the organisational innovation use as a multi-level construct, Morgeson and Hofmann (1999), posit two crucial concepts, structure and function as a basis for understanding multi-level research. The structure of a collective construct refers to the actions (e.g., SOS use) and interactions (e.g., relationships between SOS users at each level of analysis) among individuals that generate the collective phenomenon that a collective construct is used to reflect. Burton-Jones and Straub (2006), posit that the structure of system usage is tripartite, comprising of user, system, and task, and the researcher has to substantiate which elements are appropriate to their study. The function of a construct refers to the outputs or effects of the phenomenon that the construct is used to reflect; i.e., the performance of SOS relative to the given task, assuming that SOS is equals to the task to be performed (Goodhue and Thompson, 1995 and Jasperson et al., 2005). In terms of function of a construct, researchers should select measures for each element Burton-Jones and Straub (2006). Table 1 below, provides for studying system usage construct in a multi-level research.

Table following on the next page

Table 1: Guidelines for studying System Usage Construct in a Multi-Level Research Context

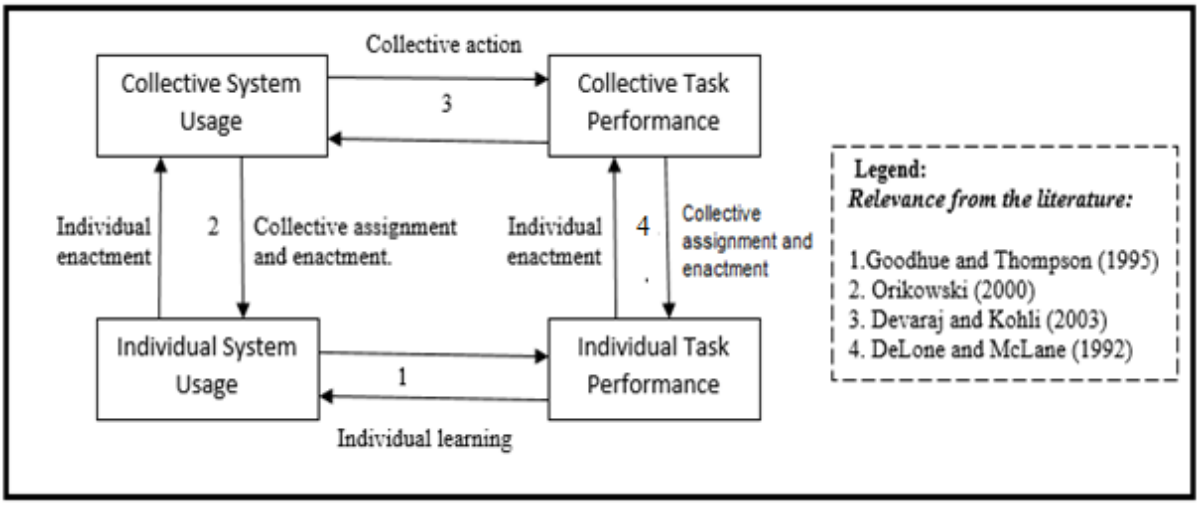
#	Guideline	Brief Description of its Application to System Usage (SOS Usage)	Cross-Reference to Morgeson an Hofmann's Guidelines
1	Function of Usage	If the function of SOS use remains constant across diverse levels of analysis, then it can be considered multi-level construct.	4 and 6
2	Structure of Usage Interdependencies in use	Structure of the collective SOS usage does not exist if there are no interdependencies amongst diverse levels of analysis.	1, 5 and 9
2	Form of collective use	A form of SOS usage (shared or configural) has to be determined when measuring a collective use. In this study, global unit properties are irrelevant, hence they originate and manifest at the unit level (thus same level of origin and theory).	2, 5, 7, and 10
3	Context of Usage *Function*	Contextual factors (e.g., organisational setting, infrastructure) that impact on the relationship between SOS usage and related constructs (e.g., user's demographics) should be identified.	8
	Structure	Contextual factors that impact on the existence of or change in SOS usage at diverse levels of analysis should be identified.	3 and 11

Source: Adapted from (Morgeson and Hofmann,1999)

In short, we shall describe the Morgeson and Hofmann's guidelines outlined in Table 1 above with reference to the Burton-Jones and Gallivan (2007) illustrative theoretical model in figure 1 below to provide a holistic view to conceptualise SOS use as a multi-level construct. Guideline #1, implies that SOS use can only be conceptualised as a multi-level construct if its function remains constant across diverse levels of analysis-i.e. processing orders. Devaraj and Kohli (2003) posit that at the organisational level, collective SOS usage emerge from aggregation of individual behaviours and/or performance with an assumption that SOS equals to the task to be completed (Goodhue and Thompson, 1995). Refer to figure 1, line number 1 and 3, Goodhue and Thompson (1995) and Devaraj and Kohli (2003) share the same sentiments. Guideline #2, suggests that prior to analysing structure of the collective usage, investigators should, firstly; determine if there are interdependencies-in-use amongst diverse levels of use, if not available, the structure of the collective SOS usage does not exist. Secondly, if the interdependencies-in-use are justified to exist, the form of collective use at which it manifests or emerge must be determined when measuring SOS collective use. Kozlowski and Klein (2000) posit three forms of collective constructs for multi-level research: global, shared, and configural constructs. In the context of this study, global unit properties are irrelevant, hence they originate and manifest at the unit level (thus same level of origin and theory). The level of origin refers to the lowest level at which the phenomenon manifests, and the level of theory is the level at which is being conceptualised. The collective SOS usage can either be conceptualised as shared or configural construct (Burton-Jones and Gallivan, 2007). This analogy implies that the collective system usage cannot be a global construct, as system use occurs at the individual level and emerge at the level of theory. The shared constructs originate in the attributes of individuals and emerge at the collective level in the form of homogeneity among the collective's members. Thus, when processing orders, all system users should have similar levels of intensity and frequency, such homogeneous use of SOS at each level of analysis is not feasible in the context of this study. For example, the rural small and medium enterprises may place an order and later be attended to by the infopreneurs for processing.

In this study, the collective system use cannot be a shared construct but rather the configural construct. The rationale behind being, the configural construct originate from individual attributes and emerge at the collective level in a form of different patterns among members of the collective system use. This implies that at each level of analysis, members may use SOS at different frequencies and/or for different purposes, and these differences amongst members may display heterogeneous but constant pattern. Moreover, the differences may also display cyclical pattern in relation to the business process cycle (see figure 2). In this multi-level and interpretive-qualitative research study, we follow the configural construct form stance. However, the configural system usage may manifests in two basic forms, heterogeneity among collective members that is stable (i.e., static roles and responsibilities at each level of analysis on SOS features) and the other one that changes (dynamic roles and responsibilities at each level of analysis on SOS features) over time. The stable configural system usage is most appropriate form in this study, hence there is one dedicated SOS user per organisation.

Figure 1: Illustrative Theoretical Model. Source: Burton-Jones and Gallivan (2007)



2.2. Organisational Context

In basic terms, the term context refers to the conditions that form the setting for an event, statement, or idea, and in terms of which it can be fully understood. In this study, the context refers to each organisation (setting) as a level of analysis (i.e., to have a comprehensive understanding) where the phenomenon (event, or idea-configural collective system use) manifests (terms). With reference to the guidelines outlined in Table 1 above, Morgeson and Hofmann (1999) posit two forms of contextual factors that multi-level theories should account for; thus, factors affecting the functional relationships among constructs and factors that affect the emergence of collective phenomenon. This implies that, multi-level researchers should consider the contextual factors that has impact on dependent variables (i.e., performance) or that moderate the relationship (interdependencies-in-use) amongst independent (frequency) and dependent variables (Burton-Jones and Gallivan, 2007).

3. MULTI-LEVEL RESEARCH

In this study, we cut across organisational science and information system research domains as we provide insights and describe the concept of multi-level research. It is of paramount importance to explicitly paint the picture of key concepts and/or terms from the inception to better understand the phenomenon under investigation, the information system innovation use as a multi-level construct. The phrase “information system innovation use” refers to the interplay between technology (information system) and human actors (Aubert et al., 2008 and

Bélanger et al., 2014). In addition, the cornerstone is that of a "level". In basic terms, a level refers to a point, class and/or standard in social, moral, or intellectual matters; a level implies hierarchical association between entities (Oxford English Dictionary, 1971 and Miller, 1978, p. 25). Rousseau (1985), Kang (2012), and Bélanger et al., (2014) postulate that, the synergy between levels of analysis and interplay between SOS and users may give rise to the emergence of higher level collectives, which should be explored from multi-level lenses. Kozlowski and Klein (2000) and Burton-Jones and Gallivan (2007) define multi-level research as any type of investigation that pertains more than one level of conceptualization and analysis. In contrast with the past multi-level research studies, whereby each level could be a unit, department and/or operational echelon of the same organisation, this study presents a unique case of multi-level research for conceptualising and analysing information system innovation use, in a sense that each level represents a complete different organisation. The fundamental premise pertaining the multi-level perspectives does exist, and each adds to the comprehensive understanding of what multi-level research entails; i.e., a) the individual (micro) and b) collective (macro) level perspectives (Klein, Dansereau, and Hall, 1994; Morgeson and Hofmann, 1999; Kozlowski and Klein, 2000, and Bélanger et al., 2014). Kozlowski and Klein, (2000), further postulate that fundamental precise to the level perspective is the acknowledgment of collective level phenomenon often are embedded in individual level contexts and that of collective phenomenon often emerge through interaction and dynamics of individual level factors. The micro level perspective revolves around individual's attitude, behaviour and/or perceptions about the phenomenon. Thus, it refers to individual organisational view point on stock ordering system use. The macro or collective perspective focuses on either aggregation and/or organisations. The macro level perspective advocates for aggregation of individual's actions at the collective level of analysis (Aubert et al., 2008 and Bélanger et al., 2014). Table 2 below depicts the summary of multi-level research's diverse level perspective.

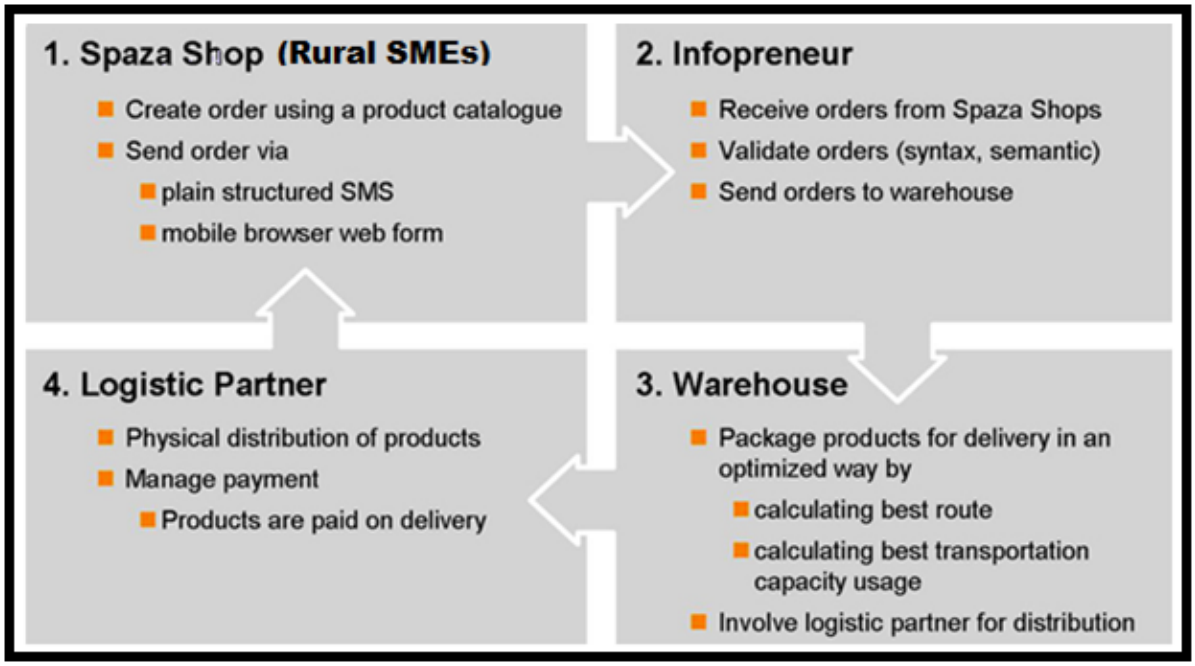
Table following on the next page

Table 2: Diverse perspectives on Multi-level Research

Perspective	Description	Sources
Individual and Collective	The collective represents "any interdependent and goal-oriented combination of individuals, groups, departments, organisations, and/or institution".	Morgeson and Hofmann (1999)
Micro coupled with macro	Micro perspective, focuses on individual and groups. Macro perspective, focuses on organisations, environment, and strategies. IS researchers need to consider both levels simultaneously and include the macro perspective because of the transformational aspects of IT.	Agzrwal and Lucas (2005), DeShon et al., (2004), Kozlowski and Klein (2000)
Mixed models	Composition models exist where there are relationships among independent variables at different levels (e.g, the psychological climate at individual level and organisational climate at the unit level) Cross-level models, involve relationships between dependent and independent variables at different levels. In this case, a causal relationship exists between a phenomenon at one level and another at a different level. Multilevel models refer to relationships between dependent and independent variables that can be generalised across two or more levels. These broad models include composition and cross-level models.	Chan (1998), Rousseau (1985)
Testing entities vs. variables	To test entities and variables, researchers may hyphosize relationships that are unique to a lower level (level specific), emergent at a higher level only, or cut across multiple levels simultaneously (cross level)	Dansereau, Alutto, and Yammarino (1984), Dansereau, Cho, and Yammarino (2006), Markham and McKee (1995), and Markham *et al*., (2010)

In this paper, we adopt Morgeson and Hofmann (1999) multi-level perspective as an ideal lens to study the stock ordering systems use across diverse organisational levels. At each level, there is one dedicated SOS user; hence, the innovation is being used periodically; thus, to provide the structure for facilitating the process of ordering stock products (Bélanger et al., 2014). Consider the uniqueness of each level, with respect to how SOS is collectively being use amongst interdependent and goal-oriented nested organisations. Figure 2, below depicts the cyclic-process of configural collective SOS use amongst diverse levels of analysis. Subsequently, we provide the description of each level, in terms of its function and structure of the collective use and lastly, their relationships-interdependencies-in-use.

Figure 2: Stock Ordering System unique roles at each level of use



Source: Adapted from de Louw and Dörflinger, (2008) and Frankova et al., (2011)

3.1. Rural SMEs (Spaza Shops)

The universal definition of Small, Medium, and Micro Enterprises (SMMEs) is still a major concern in the IS literature, as to what exactly constitute the SMMEs is not standardised (Falkena et al., 2001; Abor and Quartey, 2010 and Mbizi et al., 2013). Different authors and commissions across the globe share different sentiments in describing what constitute the SMMEs; for example: 1) The European Commission (EU) defines the SMMEs (uses SMEs) largely in terms of the number of employees according to the criteria below (Abor and Quartey, 2010; Tladi and Kekwaletswe, 2018):

- SMEs with 0 to 9 employees – micro enterprises;
- SMEs with 10 to 99 employees – small enterprises; and
- SMEs with 100 to 499 employees – medium enterprises.

In Africa, the definition is different and contextualised according to specific region; for example: In Ghanaian context, the SMMEs are defined in terms of the number of employees and the value of fixed assets. Zimbabwean stance on SMMEs definition, is that only registered enterprises with the workforce of between 30 to 70 employees depending on the type of the industry while in South Africa, according to the National Small Business Act 102 of 1996, annual turnover and gross assets, excluding fixed property are added to the criterion (Falkena *et al.*, 2001; Abor and Quartey, 2010 and Mbizi *et al.*, 2013). The SMMEs sector is deemed to be a backbone in many global economies, both developed and developing economies (Cook and Nixson, 2000; Abor and Quartey, 2010; Shaikh, Shafiq and Shah, 2011; Tladi and Kekwaletswe, 2018). In South Africa, it is estimated that 91% of the formal business entities are the SMMEs and contribute 52% to 57% to Gross Domestic Product (GDP) (Abor and Quartey, 2010). Thus being said, the SMMEs sector play a pivotal role in stimulating economic growth, in particular the under-developed, rural areas through generating jobs and contribution towards poverty alleviation (Rogerson, 2004; Berry *et al.*, 2002; Mutula and van Brakel, 2006; Kotelnikov, 2007; DTI, 2008; Apulu and Latham, 2009; Tan, 2009, Ladzani, W., and Netswera, G. 2009, and Tladi and Kekwaletswe, 2018).

In this study, the SMEs operates from the remote rural areas of Sekhukhune in Limpopo Province, South Africa. Their actions or rather functions trigger the entire SOS configural-collective use for processing orders (see figure 2). In practise, each organisation has its own dedicated-subsystem of SOS that relates to their core business functions. Figure 3 below, depicts how the rural SMEs uses their mobile phones and paper-based catalogue to place an order online.

Figure 3: Structured SMS and Paper-based Product Catalogue

Source: Merz et al., (2010)

The stock ordering system-subsystem for small and medium enterprises is compatible with the low-end mobile phones (i.e., without web browsing tools) that is ideal for rural area setting (affordability and limited digital literacy issues) operation. To place an order, the SME's sends a structured Short Message System (SMS) with their "username", and "unique code" obtained during registration process together with the "product quantity x product code" (see figure 3). In this case, the SMEs orders 10X Sasko Sam 600g White Bread and 5X 50 Kg Star Meal to the Infopreneur. The catalogue comprises of a wide range of products which may be of interest to a particular SME. However, in figure 3 only nine products are displayed for easiness. The SMS will then be forwarded to a SMS-C (SMS centre) server where all orders from diverse SMEs are stored until the Infopreneur executes them as bulk orders.

3.2. Infopreneurs

Infopreneurs are using Geospatial Information System (GIS) enabled subsystem of SOS that enables them to manage the SMEs business data and geographical information and to process incoming orders offline and uses the subsystem synchronization capabilities to synchronize his/her local business data with the central server. Subsequent to the execution of orders, the infopreneurs would then send out confirmation SMS messages to the SMEs and sending the order email (official order document with all processed orders) to the warehouse.

3.3. Warehouse

The Warehouse subsystem is embedded with the Customer Relationship Management (CRM), for customer (rural SMEs) registrations, order tracking and processing and business analytics. The GIS based User Interface (UI) is a result of the unique African context of the Sekhukhune as a rural area, i.e., in response to rural circumstances where there are no street names and addresses to locate SMEs. Depending on the size of SMEs orders, the appropriate logistics vehicle will be called for deliveries.

3.4. Logistics Partner

Logistics Partner is responsible for physical distribution of orders using the rural SMEs unique codes on GIS subsystem to locate their addresses. Orders are paid on delivery.

4. METHODOLOGY

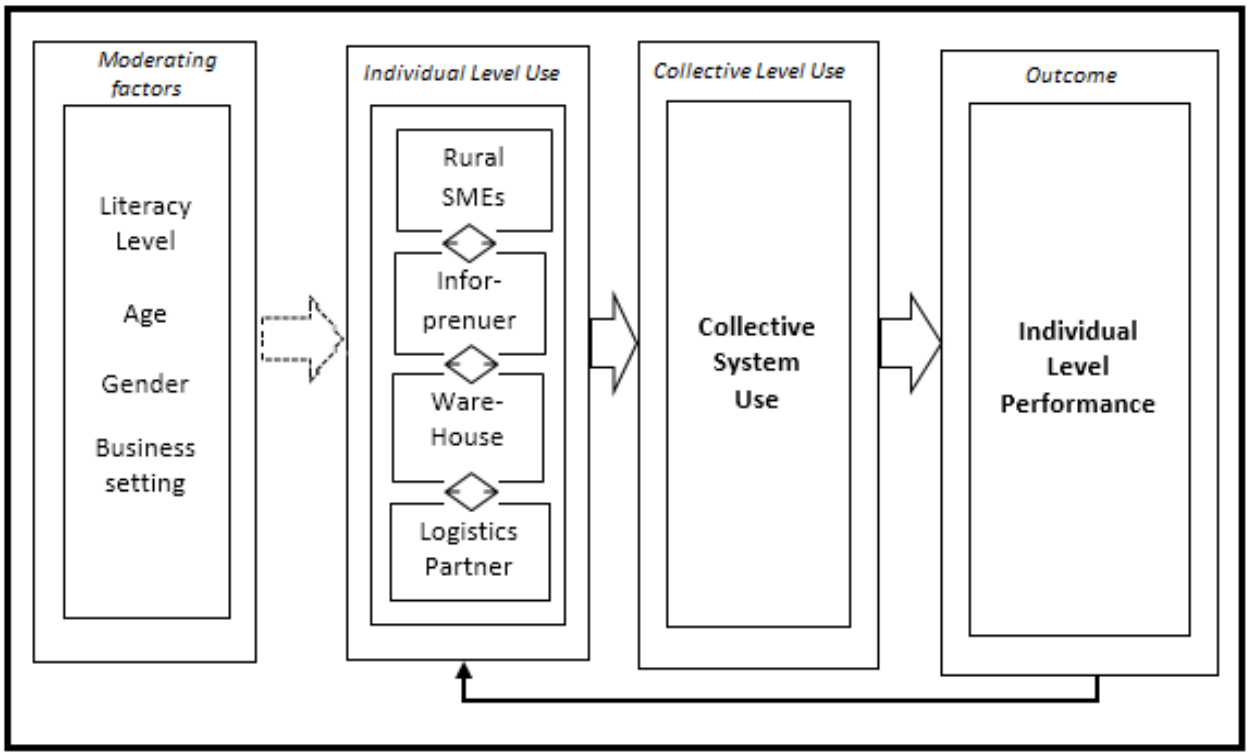
Similar to any type of research within the information systems domain, the multi-level research can be undertaken from a wide range of epistemological and research paradigms. In this study, we followed the contextualist approach, longitudinal time horizon, qualitative, and/or interpretivist paradigm stance to conceptualize the collective SOS use as a multi-level construct.

5. CONCEPTUAL MULTI-LEVEL THEORETICAL FRAMEWORK

In a quest to conceptualise the multi-level theoretical framework for analysing the organisational innovation use, Stock Ordering System (SOS), this study adopts Morgeson and Hofmann, (1999) general theoretical principles to guide the development and operationalization of the envisage theoretical framework. Burton-Jones et al., (2014), posit three theoretical perspectives in IS research: variance, process, and systems. In summary, the variance perspective focuses on covariation between properties within the system; process perspective focuses on sequence of events within the system; and systems perspective focuses on the system holistically, its emergence and interactions. In this study, we follow the system perspective stance, thus the emergence of individual level use at the collective level use and the interdependencies-in-use between levels. The system perspective derives from the conviction that the world comprises of wholes and interacting parts, not just entities, and events (Boulding, 1956, and von Bertalanffy, 1968 as cited by Burton-Jones et al., 2014, and Lai, 2017). This study presents a unique case of multi-level research from organisational context; in a sense that each level of analysis represents a complete different organisation, but the function of organisational innovation use is the same across all different organisations. However, the structure of the configural collective SOS use is different at multi-levels of analysis. For example; different SOS subsystem is used at each organisation. The difference in SOS use exhibit a cyclic pattern (refer to figure2 above) which is distinct amongst individual members and emerge at the collective level (Kozlowski and Klein, 2000 and Burton-Jones and Gallivan, 2007). Figure 4 below depicts the envisaged conceptual multi-level theoretical framework for organisational innovation use.

Figure following on the next page

Figure 4: Envisaged conceptual multi-level theoretical framework for organisational innovation use



The fundamental premise behind the multi-level perspective is that the micro phenomena (individual level SOS use) are embedded in macro contexts and that macro (collective level SOS use) phenomena emerge often through the interactions and/or interdependencies-in-use and dynamics at lower levels units (Morgeson and Hofmann, 1999; Kozlowski and Klein 2000; and Burton-Jones and Gallivan, 2007). Conversely, the macro phenomena may have direct effect on micro phenomena and/or moderate the interdependencies-in-use and processes at lower level units (Kozlowski and Klein 2000). It is in this vein that the envisaged conceptual multi-level framework considered all the multi-level perspectives and/or principles to provide a comprehensive multi-level framework for organisational innovation use. The framework posit that, at each level of analysis, there are moderating factors which may have direct effect on the SOS use at individual level use. Each level is directly depended on the output of preceding level in a ring-format (interdependencies-in-use); i.e., the output from one level becomes an input to the next level, the rural SMEs being at the starting point. An arrow from individual level use depicts the emergence of low level interactions and/or interdependencies-in-use to high level interactions at the collective level use. At the collective level use, the configural-collective SOS use give rise to individual level performance gains. How would system usage be measured in this context? One may wonder. In a context of this study, a two-step approach is followed which advocates that system usage should be contextualized with reference to its function and structure (Morgeson and Hofmann, 1999; Burton-Jones and Straub, 2007, and Burton-Jones et al., 2014). The first step, is to define its structure (user-centric) and secondly, is to choose measures (cognitive absorption) for its elements that relate to the theoretically to the other construct in its nomological network. Thus, the cognitive absorption represents the degree to which a user is absorbed when using the system (Agarwal and Karahanna, 2000, and Venkatesh, 2008)

6. CONCLUSION

The envisaged conceptual multi-level theoretical framework for organisational innovation use is flexible for any given context that pertains multi-level system use for organisational performance gains. The moderating and/or contextual factors may differ from one organisation to another. Individual use levels may also represent echelons of the same organisation or diverse organisations which are using the same organisational innovation system product for their respective organisational performance gains. This study, further invites scholars from organisational science and information systems domains to critique the envisaged multi-level theoretical framework for organisational innovation use.

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PARAMETRIC MODEL OF A MULTI-AGENT ACTIVE ELEMENT OF ORGANIZATIONAL SYSTEM

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ABSTRACT

The development of new and existing management mechanisms for the management theory of organizational systems (TUOS) is an important task when creating human-technical systems for various purposes. Modern approaches to management should go with combined control impacts, both on technical systems and on certain employees who carry out targeted activities. Despite the constant development of technical tools, the most vulnerable parts in the functioning of organizational systems are still certain people, employees. Along with important material stimulation factors, modern systems of organizational management must also take into account other obvious needs of employees, such as the need for self-realization, knowledge and training accumulation. Therefore, a flexible, people-oriented approach to management is necessary, when the needs and interests of employees related to public recognition, development prospects, and goal setting are taken into consideration. Most models of organizational systems management theory are based on the assumption that the agent only wants to earn money by reducing its own costs as much as possible, putting the issues of profit in the foreground. Thus, according to the authors, the future is in management systems that focus on integrated consideration of the interests of multi-agent systems employees. At present, people-oriented management mechanisms are poorly developed in the social and economic sciences. The authors of this article suggest a parametric model of a multi-agent active element of organizational system (MOS), which can be used to build specific normative models of activity in organizations based on taking into account the preferences and interests of employees.

Keywords: *parametric model, multi-agent active element, theory of organizational systems, multiple behavior strategies, objective function, set of specific competencies, economic behavior, agent*

1. PARAMETRIC MODEL OF THE ACTIVE ELEMENT (AGENT) OF A MULTI-AGENT ORGANIZATIONAL SYSTEM

Such sciences as game theory [1], active systems theory, and organizational systems management theory [2] often focus on human economic behavior. In many cases, this approach is justified, but it is impossible to say with absolute certainty that economic behavior is dominant in most practical situations. It is more correct to say that economic behavior is only one of the particular aspects of a real person. The concepts described in the textbooks are good for forming a society of individualists and «ideal consumers». In a complex world, these principles do not work when sanctions are imposed, corrupt behavior and the desire to harm competitors is used. Unfortunately, many modern humanitarian sciences do not provide any developed tools for describing real multi-agent organizational systems, except for the well-known model of the «economic» person. The existing mathematics is quite limited, which does not allow us to model such systems at the proper level. In game theory, participants (players) aim to gain in the course of competition by calculating strategies, and in active systems theory, agents also gain to make a profit. Examples include various modern educational schemes (including «per capita» funding), new approaches to paying alimony (based on the «take and share» principle), and no other factors are taken into account in addition to money.

The model of the «economic» person is incomplete, however, according to its authors, «nothing better has been invented yet» [2]. To some extent, this model is true, but it is also a mistake to say that money can solve everything. Therefore, the statement that the agent (or player) acts in an effort to «maximize their own profit» [2] is also incorrect. The authors of this article believe that «economic behavior» is just one of the aspects of a real living person (player, agent) - quite important, but not dominant. Thus, when building real planning and incentive systems, you can't rely only on costs, profits, and money-denominated efficiency. Let's consider the parametric model of the active element (agent), which key difference is taking into account the specifics of the subject area. This model can be used when describing individual agents for multi-agent organizational systems and combines known elements of game theory and active system theory. Thus, any MOS agent is described by a parametric model, the required components of which are presented below:

1. The set of specific competencies - $\overline{Kp_i}$ of the agent- $\grave{a}\tilde{a}_i$ - is actually unique knowledge and skills that the agent possesses. A corresponding importance indicator can be associated with each competence.
2. Many specific roles - $\overline{RL_i}$ of the agent- $\grave{a}\tilde{a}_i$. An agent is characterized by a set of skills (what he can do in MOS), where the role is represented by a set of competencies.
3. Multiple behavior strategies - $\overline{ST_i}$ of the agent- $\grave{a}\tilde{a}_i$. A set of well-established behavior strategies that are Nash-balanced [1], coordinated with the planning center, and corresponding to the accepted regulations and standards for any type of MOS.
4. The objective function $f(Z_i) = \overline{C}(\overline{X}_M) - \overline{D}(\overline{X}_N) \to opt$ of the agent- $\grave{a}\tilde{a}_i$ is represented as the difference between the profit $\overline{C}(\overline{X}_M)$ and cost $\overline{D}(\overline{X}_N)$, associated with performing a particular action- x_j. If it is impossible to set the target function mathematically (for a number of reasons), use the agent's «model of interests» or the agent's preference function $\gamma(Z_i) = \sum_{k=i}^{M} \left[\overline{I}_k\right] \to opt$, when the center tries to take into account the agent's interests related to its direct activities in MOS.
5. A set of information - S_i that reflects the requirements or wishes of an agent when performing a certain type of activity in a multi-agent system.

Combining the components presented above, we get a basic parametric model of the agent, which can be expanded with additional elements specific to a particular subject area (1):

$$\overline{\grave{A}\tilde{a}_i}^{Base} = \{\overline{Kp}_i, \overline{RL}_i, \overline{ST}_i, f(Z_i)..\gamma(Z_i), S_i\} \quad (1)$$

It is fair to say that the basic model of an agent - $\grave{a}\tilde{a}^{base}$ can be formed for a multi-agent system of any type, because one way or another people work and receive reward for their activities (material, moral, and other). The economic model of a «useful person» is a special case (a narrowing of the basic model) when it is assumed that a person will only do what he is paid to do. The basic model expands the concept of the «economic» person by introducing additional important elements that can be used to evaluate the evolution and accumulation of knowledge in the organizational system. If it is necessary, the basic model can be expanded with additional elements. That will eventually lead to the appearance of models which take into consideration the specifics of the activity in the organizational system - $\grave{a}\tilde{a}^{ext}$. Building such models can be useful for detailed forecasting of system development and making management decisions aimed at purposeful evolution of a multi-agent system.

We introduce the concept of a balanced evolutionary organizational mechanism (BEOM). This mechanism will include any mechanism that directly or indirectly takes into account all the components of the basic agent model - $\grave{a}\tilde{a}^{Base}$. The need for the emergence of such mechanisms is primarily due to the need for «flexible and smart» management, instead of the old-fashioned statements such as «we spend less, we earn more». The key idea shared by the authors of this article is that the evolutionary approach to the development of large and complex systems is preferable to the revolutionary one, since it increases the stability of systems, as well as contributes to the purposeful and long-term development of unique staff competencies. In other words, if the organizational mechanism does not take into consideration the interests and competencies of the staff, then it is not the evolutional one. The development of BEOM mechanisms in the future will allow the use of multi-factor organizational mechanisms that encourage the accumulation of knowledge and the evolution of systems.

2. THE STRUCTURE OF A MULTI-AGENT ORGANIZATIONAL SYSTEM

The structure of a multi-agent organizational system (MOS) in which active agents are described by the basic model is represented in figure 1. The proposed model (MOS) is suitable for describing systems of all types and forms of ownership.

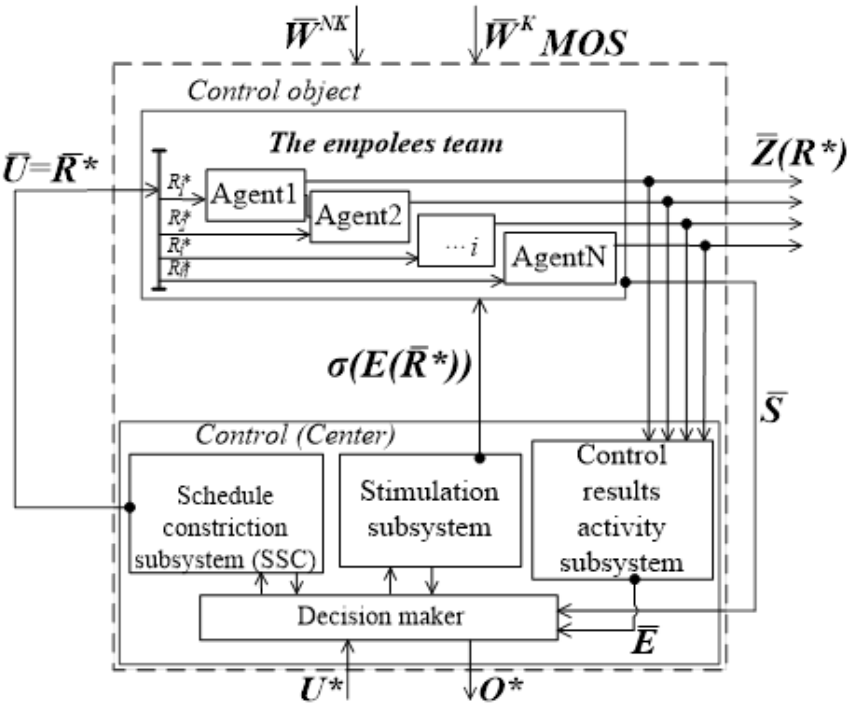

Figure 1: Model of a complex multi-agent system

The following symbols are shown in the figure 1: $\overline{S}$ - information from agents; $\overline{U}$ - complex control action or control decision- R^* (plans, schedules, regulations, orders, instructions and orders); $\overline{Z}(R^*)$ - indicators that characterize the results of agents activities; $\overline{E}$ - evaluation of the effectiveness of agents actions; $\sigma(E(\overline{R}^*))$ - stimulating effects, $\overline{W}^{K}$ - controlled disturbing effects (changes in the market of goods (services), in the financial sector, etc.), $\overline{W}^{NK}$ - uncontrolled disturbing effects (corruption behavior, external risks), U^* - management from a higher-level center, O^* - information for a higher-level center. It is necessary to highlight the subsystem of coordinated incentives for agents [3] for transmitting reliable information to the

center whiting the above system, including information- $\overline{S}$ and interests- $\bar{I}$ which implement the specified mechanism of material or non-material incentives. Complex control action includes the use of various control mechanisms, such as:

1. Issuing of orders, acts, and regulations (institutional governance);
2. Assigning of plans, schedules, and work schedules (calendar, network, financial, and so on);
3. Issuance of honor certificates, awards, award certificates and diplomas (motivational management).

The proposed agent model can also be used in the management of IT- services [5], which will allow you to build new flexible organizational mechanisms directly at all stages of the service life cycle and for any forms of production and economic activity.

3. CONCLUSION

The article deals with modeling the agent of a multi-agent organizational system. The key difference of this model from the previously described in the literature on management theory is the use of the hypothesis of «economic behavior» as an equal factor with respect to other important characteristics of human activities, such as professionalism, experience, transfer of knowledge to the younger generation. Adding information to the basic agent model described in the article will allow for additional factors to be taken into account in the process of developing new organizational mechanisms and, as a result, improve the quality of management decision-making.

ACKNOWLEDGEMENT: *The elements of the agent model considered in the article were implemented within the framework of the system for monitoring the performance of the Siberian State Industrial University [3], which is being improved up to the present time. The implemented approaches made it possible to significantly improve the efficiency and quality of management in the new conditions.*

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SUSTAINABLE DEVELOPMENT AS AN OBJECTIVE NECESSITY FOR THE DEVELOPMENT OF THE NON-OIL SECTOR OF AZERBAIJAN

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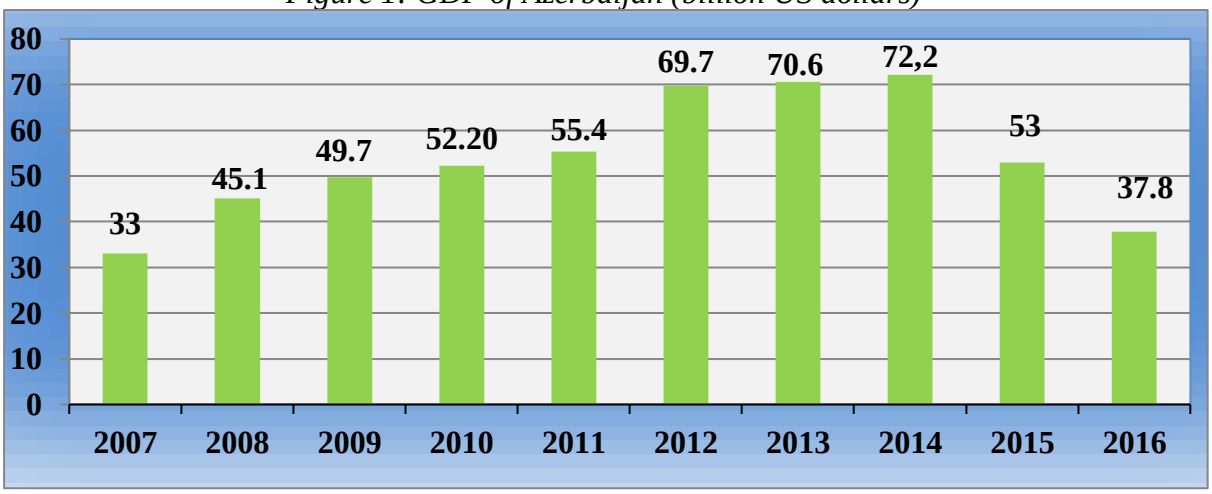
ABSTRACT
The problems of the development of the non-oil sector of Azerbaijan and various areas of activity of the Azerbaijan's economy in the international arena is a constant object for research by international experts. Sufficient attention is paid to certain spheres of development of Azerbaijan's economy, but generally nowadays, there are no special works or articles devoted to a comprehensive study of the country's non-oil economy in the scientific literature. Therefore, these problems predetermined the choice of topic, purpose, relevance and the main tasks of this work. The purpose of the work is to identify the non-oil sectors of the Azerbaijan's economy and the mechanisms for ensuring structural changes in its national economy at the current stage. To achieve this goal, it is important to determine the main directions of diversification of the economy and the possibility of expanding the non-oil sector in the future.
Keywords: *non-oil sector of the economy, GDP, modernization, innovation, investment, market*

1. INTRODUCTION

Nowadays, Azerbaijan plays a substantial role as an international center for crossing important transport and communication routes from Asia to Europe. Azerbaijan has significant hydrocarbon reserves, which makes the country a place of concentration of interests of many countries and regional associations. After gaining state independence (1991), a balanced structural economic policy was pursued, the main direction of which was the creation of a new development model based on various forms of ownership and the formation of a competitive economy adapted to globalization. The fuel and energy complex (FEC) is the basis of the country's economy, and its sectors (mainly oil and gas) occupy a significant place in the potential economy of the Republic (they account for about 23% of foreign investment and 34.3% of GDP) [9]. Therefore, the development of oil and gas fields, combined with the provision of rational energy consumption, has given a new impetus to the structural balance of the economy and the development of non-oil sectors. In modern conditions, the country re-creates production and social infrastructure, transport communications, purchases the latest technologies and production lines, creates new industries in the service sector, the country is increasingly entering foreign commodity markets. At the same time, to become an active participant in the modern global economy and the subject of a new information society, it is necessary to diversify the entire economic system of the country and create modern industries using innovative technologies [1]. Over the years of the pre-crisis economic boom, developed high dependence of the economy and the budget balance of the country on external demand and

oil and natural gas prices from developed countries, which increases the vulnerability of Azerbaijan in conditions of global instability. The economy of Azerbaijan is characterized by features inherent in many oil-producing countries. This, in particular: fast GDP growth during the development of the oil industry, a high level of foreign exchange reserves and insufficient diversification. It should be emphasized that economic growth has continued uninterruptedly since 2007 [5]. Over the past 10 years, country's economy on average added 5.5% annually. But as we can see from the graph, starting in 2014, the indicator has been falling sharply. This is primarily due to the fall in hydrocarbon prices and the devaluation of manat, which greatly influenced the structure of the economy (Figure 1).

Figure 1: GDP of Azerbaijan (billion US dollars)



Source: The State Statistical Committee of the Republic of Azerbaijan (SSC)

Currently, Azerbaijan is facing a difficult economic situation: the global market for energy and raw materials is unstable and the development prospects are contradictory. In the future, Azerbaijan should be ready for the following objective processes:

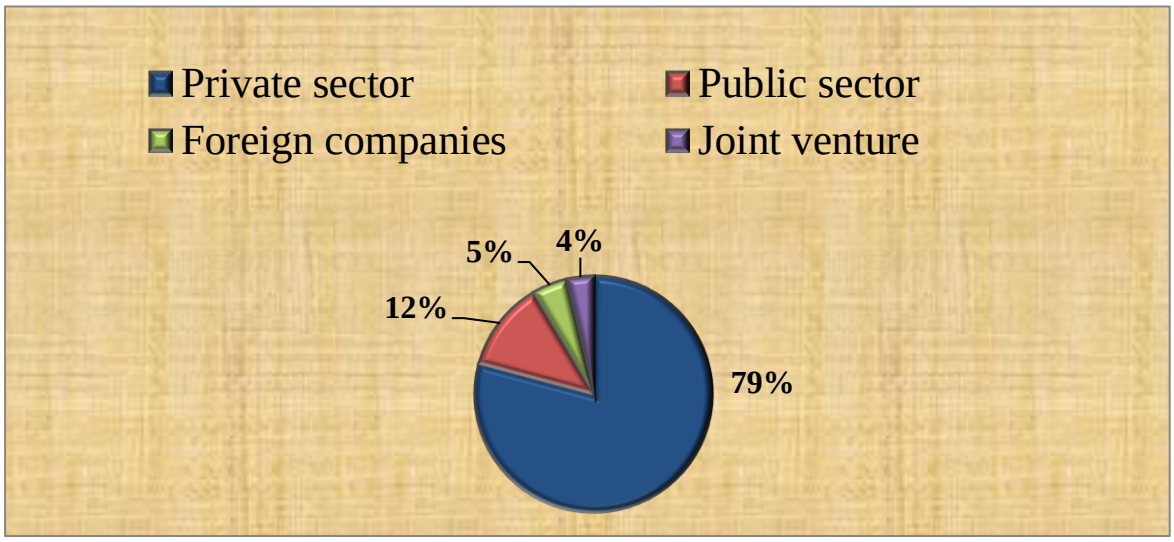
- Increased demands on the value of environmental standards;
- Diversification of sources of oil and gas imports in the major importing countries;
- Reduction of the main reserves of oil and gas fields;
- Formation of the necessary conditions for the effective management of growing oil revenues for innovative and industrial progress.

2. FORMATION OF BUSINESS STRUCTURES

The emergence of market relations is reflected in the formation of business structures that depend on economic and social conditions. An important role in the development of dynamic economic and social aspects of business is played by factors of increasing economic activity (including environmental, institutional, etc.). The interaction of various forms of business and the institutional environment is necessary for the state of natural balance. Providing the best balance of various forms of business is a rather complex issue, requiring the use of a wide range of regulatory effects. In the context of globalization of market relations in the world, it becomes possible to view business as a kind of activity with specific functions from a single methodological point of view. In connection with the development of business, the dynamic development of important indicators of the effectiveness of economic development in the economic and social spheres is explored. As the foreign practice shows, the first step in achieving the growth of free business should go along the path of a market economy. The development of entrepreneurship is one of the most important elements of the market economy, creating the necessary flexibility in the economy, creating competition, eliminating shortages

in the consumer market, increasing employee interest, establishing business relations, increasing employment, establishing stability in the financial sector, and reducing social tensions. Studies show that the speed of business development and its scale should be considered as an important factor in the development of the Azerbaijani economy [3]. Strengthening and expanding business in Azerbaijan as a whole will give a powerful impetus to the country's socio-economic development, administrative regions and territories, will promote balanced development, reduce unemployment and poverty, and protect the domestic market. In all probability, it is wise to carry out structural changes within the framework of a long-term development program, since competent structural policy helps to improve foreign economic cooperation and build a competitive diversified economy. Currently, Azerbaijan in the formation of structural policy relies heavily on the experience of developed economies, assimilating their production and managerial skills. The successes achieved in the economic development of the country create the conditions for the transition from catch-up development to technological development. Innovative development needs to adapt to local conditions. The agricultural sector may become one of the main areas determining the export direction of the economy since the comparative advantages of natural conditions and traditions in agriculture creates all the necessary prerequisites for this. One of the major tasks facing Azerbaijan is to eliminate the dependence of the economy on the oil industry and ensure the development of the economy in rural areas. The industry is also important in reducing rural poverty. Agriculture is the main object of economic reforms, as more than half of the population lives in rural areas. A significant role in the country's economy is played by the construction market, which ranks second after the oil industry. Since 2000, commercial areas have replaced common areas with social and material facilities for urban residents (new buildings). Moreover, despite the fact that the townsfolk got the right to the housing stock (apartments), the common areas in the residential buildings and the land on which the residential buildings are built, still remain under the control of the city authorities. In recent years, numerous projects have been carried out in the capital, bridges, and transport hubs that are being built to improve road infrastructure. For investors, housing investment in recent years has remained very attractive, as real estate prices tend to increase. Of course, for those who wants to solve their housing problem, this situation on the real estate market is not attractive. Nevertheless, mortgage lending continues to develop in the country, which stabilizes the activities of banks. This area has become a competitive industry, it is attended by large companies building according to modern international standards. In addition to participating in the construction process itself, foreign companies have huge opportunities in the production of building materials. There are already joint ventures for the production of cement, reinforcement and adhesive materials used in construction. The need for structural diversity in the economics of Azerbaijan has always been a basic development strategy. At the current stage, Azerbaijan should become an active participant in the global knowledge-based economy and the subject of a new information society. Therefore, to ensure a high and sustainable pace of development and reduce gaps with leading Western countries, it is necessary not only to modernize the industries inherited from the Soviet economy but also to carry out horizontal (exporting the widest possible range of traditional products that can compete in quality on foreign markets with leading brands) and a vertical diversification strategy (the creation of new industries using innovative technologies). Nevertheless, it is not always possible to predict the future of the Azerbaijan's economy in connection with escalating forecasts on the economic situation in Europe, the USA and, in general, in the world. The economic crisis has forced most developed countries to abandon the old concepts of economic regulation based on market relations and resort to the new rules of the game. So, one of the main points in the new economic policy was the support of the state of entrepreneurs in solving their financial problems, which leads to increase in the share of the private sector in GDP (Figure 2).

Figure 2: Share of enterprises by sectors of the economy in 2016.



Source: The State Statistical Committee of the Republic of Azerbaijan (SSC)

3. CONCLUSION AND RECOMMENDATIONS

Today, the trends in increasing investment have become apparent, the state needs to determine clear prospects where they should be directed first of all. In my opinion, Azerbaijan's industry non-oil priorities for foreign companies are as follows:

- The country's chemical industry, requiring re-equipment and the formation of new industries since most chemical industry factories are privatized and have a basic basis for production on their natural resources;
- Metallurgical complex of the country (enterprises of ferrous and non-ferrous metallurgy, which need updating and creation of new industries). Rich mineral reserves (aluminum, iron, zinc, cobalt, silver, copper, salt, mineral waters, iodine, bromine, sea ores, etc.) will be exhausted. The development of joint projects with the help of foreign investors on single production in the metallurgical industry may be the beginning of the successful implementation of new industry development programs;
- Light and food industries (they have great potential for development: good raw material security and a rich domestic market, which, in turn, has almost been transferred to privatization). Foreign investors can participate in the modernization of existing cotton, wool, silk mills, sewing and knitting factories;
- Agriculture (investments in the processing of increasing volumes of agricultural products are also considered a priority for foreign investors, as there is a potential opportunity for the development of livestock, cotton, viticulture, and vegetable growing, most of which should be export-oriented);
- The construction industry, which has large stocks of building materials and the corresponding production capacities for the production of these materials. Foreign companies can participate in this direction since almost all enterprises in this industry are also transferred to privatization. There are resources for the production of building materials such as paint, linoleum, gypsum, tile, as well as plumbing equipment and others that are currently imported. Also, foreign investors can participate in the restoration of transport infrastructure, water supply system, in the field of construction of roads and bridges in the regions of the country;
- Pharmaceutical industry (especially for private investment). A lot of medicinal herbs grow in the country (licorice root, thyme, wild rose, Caucasian chamomile flowers, fennel fruits, sea buckthorn oil, etc.);

- There is real potential for cooperation with foreign investors in the field of information technology, tourism, telecommunications, education, and environmental projects.

For a stable influx of foreign investment in the Azerbaijan's economy, it is necessary to revive the confidence of foreign investors in the country, strengthen its image in world financial markets, develop a system to stimulate investors in the non-oil sector of the economy, and adopt international standards for investment cooperation. According to the author, the influx of investments in the non-oil sector of the economy will largely depend on the development of the financial market, the leasing market, the stability of the banking system and the securities market to mobilize internal and external resources.

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US TECHNOLOGICAL TRANSFER LEGAL CONSIDERATIONS WITH SPECIAL EMPHASIS ON BAYH-DOLE ACT AND FEDERAL TECHNOLOGY TRANSFER ACT

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ABSTRACT

Technology and technological advancement have a crucial role in the progress and economic leadership of the world today, as always. Technological changes have a major impact on the economy and changes that have arisen. They influence the growth and development of a business organisations in all branches of industrial activities and strategic changes in business. Technologies, escpecially the cutting edge technologies and inventions are the main source of competitive advantage. An organisation that wants to be successful must invest in technology. Technology transfer is a two-way process that took place in education and temporary institutions in dollars and the scale of significance, experience, ideas, technologies, discoveries, etc. in all the goals and activities achieved. Then again, for quite a long time, there was not enough strong motivation for doing in projects that financed the federal government in America, as they automatically transferred patents rights to the federal government which invested in research, and still only some 5% of the inventions and patents were commercialised and monetised, producing commercial benefits. As a result, we witnessed the adoption of a number of legal instruments, the 1980 Bayh-Dole Act, and the successor law named Federal Law on Technology Transfer from 1986, including some of the amendments that followed, which were adopted to establish the invention of granting rights of priority over patents and enable their commercialisation, which led to the great change and the tide-turning of events after the American economical crisis crisis of the 1970s.

Keywords: *technology transfer, technology, science, patent, law, copyright, patent rights*

1. INTRODUCTION

Technology ("the science of the craft", from the Greek τεχνη, techne, "art, skill, craftiness" and -λογια, -logia (Liddell & Scott, (1980)) is a set of techniques, skills, methods and processes used in production of service goods or pursuing goals such as scientific research. Technology can encompass knowledge of techniques, processes and the like, or it can be incorporated into machines to enable them to function without knowing their work in detail. What is of utmost importance is that it must be constantly improved, that is, the base or pool of knowledge must be constantly innovated. Innovation itself is a matter that is directly driven by personal interests and less by the interests of the community. It may be best to say that the happiest is the innovator who can contribute to the emergence of new technology, or any means or process, that can bring prosperity to all of society and humanity, but also to the material, well-deserved benefit it has brought to the innovation-maker. This is precisely why the world has faced a major problem: namely, organisations that could fund research that led to new technologies and innovations had in their turn people who made new technologies, but until some point in history, every new technology and innovation belonged to the state, college, university, etc. where the research was done. It is quite understandable that the researchers did not try too hard to bring in too much innovation, since all their efforts were paid bz regular salaries, that is, they were considered to have been compensated by their regular income for everything they did, including innovations and technologies that brought enormous technological breakthroughs and profits to those who have succeeded in monetising or commercializing them.

In the former Socialist states, this was even implied: the creators of one of the most popular video games Tetris, coming from the Soviet Union, invented by Alexei Pazhitnov in 1984, received nothing for this invention (regardless of the fact that it was just a video game without technological influence), because exploitation rights were transferred to the USSR state, which earned fabulous sums. As a result of USSR regulations, in which the copyright of any part of the employees of state bodies belongs to the state, he earned virtually nothing from Tetris. Pazhitnov only later made use of his invention, since he founded The Tetris Company in cooperation with Hank Rogers in 1996, and at a new company, under US law, developed new games to make money.

2. TECHNOLOGY TRANFERS AND USAGE RIGHTS

Today, technologies are a major source of competitive advantage. An organisation that wants to be successful in the market must invest in technology. Technology transfer is a two-way process that takes place between education and the economy, in which knowledge, experiences, ideas, technologies, discoveries, etc. are exchanged in order to achieve certain goals and to advance them. This term emerged in the United States in 1940, when the federal government assumed responsibility for nationwide R&D. The main objectives were military, nuclear and space exploration. After World War II, Europe was devastated, so the United States, through technology transfer, contributed greatly to its renewal and development. In the process of development of countries, "in the last few centuries, technology has been marked by great discoveries as prerequisites for long journeys and the discovery of new worlds" (Levi-Jakšić, Marinković, Petković, 2011). This essentially meant that the more developed countries would turn the underdeveloped ones into their colonies by force, for profit. Historian Philip Hoffman calculated that by 1800, before the Industrial Revolution, Europeans had already controlled at least 35% of the globe, and by 1914 had gained control of 84% of the globe (Hoffman, 2015). However, technology transfer gained momentum after World War II, only when colonialism was abolished. The colonies have long been in a very poor economic position, being a source of cheap raw materials and labour, as well as a convenient market to which developed countries sold their expensive industrial products. In doing so, the colonial powers became rich, earning high profits and the poor countries remained poor and became even poorer for below-cost raw materials export, and money flowing from their modest budgets into rich countries for the expensive products they sold in these markets. The ratio of inequality has been steadily deepening (Levi-Jakšić, Marinković, & Petković, 2011). Unfortunately, we must acknowledge that, despite the abolition of colonialism, this relationship has never completely changed. This phenomenon is called neo-colonialism. Developed countries use cheap raw materials and labour from their former colonies; Legislation in these countries is weak, furthermore it is poorly controlled, there is a high level of corruption. Child labour is allowed, wages that are much lower than the lowest wages in developed countries, there are much longer working hours, etc. Developed countries in their former colonies still have a market for their products (Levi-Jaksic, Marinkovic, & Petkovic, 2011). Countries that freed themselves from slavery after World War II wanted to catch up with developed countries. They needed the technology to do that. Underdeveloped countries must adopt an appropriate development strategy. The first question is how they can reach an adequate level of productive development so that they can reach developed countries or at least reduce the gap between them in the shortest possible time. This is only possible through technology transfer, because these countries do not have the money or time to invest in long-term and expensive R&D, they do not have the educated staff to do research or research centres. Their only way is to simply import the technologies they need. Another issue that arises when selecting and implementing a development strategy is the development of social, economic, organisational and managerial conditions for the effective

implementation of new technologies. It is necessary to develop an appropriate competitive environment, to create an environment that will support the strengthening of technological capabilities of the organisation. Technology transfer is the process by which one organisation authorises another to access its technologies. Technology transfers can be horizontal and vertical. Horizontal transfer is the transfer of technology from one place to another, i.e. from one country to another. Vertical transfer is the transfer of technology from where it originated to where it is applied. It involves moving from university research centres to businesses. Typically, transfers are made in the form of a license or sale (George, 2009). Researchers in the field of technology usually encounter technology transfer when businessmen perceive the innovative possibilities of their discoveries. When Bio Rad, a biotechnology company, was interested in buying DNA readers made at Harvard University in 1977, no legal solutions were developed for a transaction of this type (George, 2009). University staff now consider this to be a major failure because they were able to get the money needed for research much earlier, and thanks to this, the findings used today are much earlier. It is clear how bad this was, among other things, for the prevention of crime and the discovery of the perpetrator, but also in financial terms and in terms of further motivation of the inventor. Catalysts are today global players in the university-industry mindset, in the development of innovation. Technology transfer offices under this model are well paid and generate a high level of revenue. These offices act as catalysts and do not seek to maximise the number of innovations in a year, but to generate revenue from the use of innovations. This is mostly achieved through licensing. The most successful innovation under this model was patenting DNA that brought in $37m in revenue. Revenues are generated by royalty. These universities promote entrepreneurship and investment in the early stages of research. A high level of education is very important. New innovations are spreading early and globally. The best example is Stanford University, which has gone a long way in innovating with new legal solutions.

3. BAYH-DOLE ACT (1980) IN THE US JURISDICTION

One of the most significant pieces of legislation in US legislation regarding technology transfer is Bayh–Dole Act or Patent and Trademark Law Amendments Act.

3.1. Historical overview

This Act enabled entirely new solutions to the regulation of the rights over inventions. That is to say, the Bayh-Dole Act brought a key change over ownership of inventions that occurred during federal funding research. Prior to the Bayh-Dole Act, all contracts funded by the federal government, as well as scholarships from the federal government, required inventors (wherever they worked) to hand over inventions they came up with using federal funds - to the federal government itself (Stevens, 2004). The Bayh-Dole Act allows universities, small businesses, or nonprofit institutions to choose to claim copyright for inventions rather than giving them to the federal government (Blackwell. 2012). Prior to 1980, the management of federally funded research was covered by conflicting statutes, a group of agency policies, and presidential directives. Usually the federal government has taken ownership of inventions created under its funding, making them available to anyone on a non-exclusive basis. Because the creators and potential inventors of these inventions lacked the powers and incentives to own patents, most of these discoveries were left on government agency shelves. This lack of return on taxpayer investment, coupled with a severe decline in US competitiveness, prompted Senators Bayh (Indiana, Democrat) and Dole (Kansas, Republican) to introduce a completely new law in 1978 to begin reforming federal patent policy. The Bayh-Dole Act stemmed from Congress' efforts to address economic problems in the 1970s (Stevens, 2004). One of Congress's efforts has focused on how best to manage inventions created with more than $75b annually invested in government-sponsored R&D.

Three possible philosophies were discussed that imposed themselves as solutions: "Hamiltonian belief that the solution lies with a strong central government, which should take responsibility and actively manage those resources"; "Jeffersonian belief that the solution lies with the individual and that the best the government can do to provide incentives for success is to get out of the way of those individuals"; and the belief that "government can only damage the efforts of researchers and hinder them, and that it must ensure that everyone benefits financially from government efforts" (Stevens, 2004). Prior to the adoption of the Bayh-Dole Act, the US government collected 28,000 patents, but less than 5% of those patents were commercially licenced, so 95% of those patents were unused (U.S. Government Accounting Office (GAO) Report to Congressional Committees), and all that knowledge that could have led to the advancement of the economy was "thrown on the shelves". These patents have been accumulated since after World War II, when the government under President Harry S. With Truman decided to continue and even increase its spending on research and development, based on a famous Vannevar Bush report entitled "Science: The Infinite Frontier." The report states, "Scientific progress is the one crucial key to our security as a nation, our better health, more jobs, greater living standards and our cultural progress" (Bush, 1945). However, the government did not have a single patent policy that would regulate all the agencies that funded the research, and the general policy was that the government would retain the right to inventions and license them on a non-exclusive basis. "Those wishing to use state technology actually encountered a maze of rules and regulations set by those agencies because there was no single federal policy on government-sponsored inventions or technology transfers from government to the private sector." It has been seen that the condition in which only 5% of inventions are monetised and used for economic development is unbearable. The law hearings revealed that at least 20 different patent policies existed throughout the government, with some federal agencies having conflicting policies across programmes. Usually, universities and contractors whose inventions were taken over by their funding agencies were able to file a claim for patent ownership. Such actions often took 18 to 24 months. This does not mean that the result is necessarily suitable for the inventor. Obviously, such uncertain ownership, coupled with serious delays in decision-making, made it difficult to commercialise. In 1968, the Department of Health, Education and Welfare introduced a unique "Institutional Patent Agreement" (IPA) to allow nonprofit institutions to obtain recognition of patentable inventions made with federal funds that the institution decided to seek patents on. By 1980, more than seventy universities and research organisations were negotiating an IPA with the Department or with the National Science Foundation. In the 1970s, faculty at Purdue University in Indiana made significant breakthroughs in grants (scholarships) from the Department of Energy, which did not issue Institutional Patent Agreements to them. University officials complained to their senator, Birch Bay, whose staff investigated the case. At the same time, Senator Robert “Bob” Dole was aware of similar issues, and the two senators agreed to cooperate on a bill that would be in line with the "Jeffersonian Property Certificate" described above. Accordingly, as described below, the legislation decentralised control over federally funded inventions, assigning responsibility and authority to commercialise inventions to a grant-making institution or company, with certain responsibilities to the government, inventor, and the public, as described below.

3.2. Requirements from financing users

The Bayh-Dole Act authorises the Department of Commerce to create standard patent rights clauses that will be included in federal funding agreements with nonprofit organisations, including universities and small businesses. The standard patent rights clause is provided in Article 37 of CFR 401.14 (a). This clause has been incorporated into federal funding agreements through a number of contracted instruments, including grants given to universities and contracts made with for-profit companies.

Under the standard patent rights clause, small businesses and nonprofits, if given the title of "subject of inventions" can retain that title by following certain formalities. However, no small or non-profit organisation is required to acquire ownership of such inventions. All organisations agree to the following:

- Include a patent rights clause in any subcontract;
- Make a report on the findings in question to the research sponsoring agency;
- To choose in writing whether or not to retain the title of the invention;
- Implement an employee education program on the importance of timely disclosure
- Require certain employees to make a written agreement to protect the government's interest in the inventions in question.

If the organisation does not decide to retain its title over invention, then control over the invention is subsequently transferred to a federal agency. The agency may waive the right to claim the invention and allow the inventors to retain the right to their inventions. If the organisation decides to retain the right to the present invention for which it has been assigned the task of investigating it, the organisation shall do the following:

- To give a non-exclusive, non-transferable, irrevocable, paid licence to perform or use the invention in or on behalf of the United States worldwide;
- to file its original patent application within one year after the election to maintain the title of the patent;
- Notify the government if it does not continue processing the application or allow the patent to expire;
- To transfer to the Federal Agency, upon written request, the right to any object of the invention if the organisation does not file, continue the criminal prosecution, or allow the patent to be terminated;
- Each patent shall include a statement identifying the contract under which the invention was made and a notice of the rights of the government in the invention;
- Submit a report on the use of the present inventions;
- Require, through exclusive licenses, that patents be used or sold in the United States or that products manufactured under these patents will be manufactured in the United States;
- To agree to allow the government to "enter the project" and to require that licenses be issued or granted, in certain circumstances, such as, for example, if the organisation has not taken effective steps to achieve practical implementation of the invention.

3.3. Interesting cases from legal practice: Stanford v. Roche

One of the most notable cases in legal practice was Stanford v. Roche. It was a case that finished before the United States Supreme Court, which ruled that the rights to a patented invention first belong to the inventor, even if the inventor is a researcher in a federal government-funded laboratory, according to the Bayh-Dole Act. The judges affirmed a common understanding of US constitutional law that inventors automatically own their inventions, and the contractual obligations to grant those rights to third parties are secondary. The case came about because a Stanford employee who was required to make inventions to Stanford spent some time at a biotechnology company to learn a technique, and signed an agreement with that company to give him inventions he may come across. The company was later purchased by Roche. Stanford filed patents for work done by an employee upon his return to Stanford, and the company (and later Roche) introduced products based on accomplishments from work done by a Stanford employee at Roche. When Stanford sued Roche for infringement of his patents, Roche responded that it had a vested interest in the patents over an agreement the Stanford employee signed.

Among the arguments Stanford gave was one that stated that the Bayh-Dole Act granted donors a "right of second refusal" provided the Government was entitled to a first refusal, based on the following statute: "If the contractor does not choose to retain the right to the subject in cases that are the subject of this section, the Federal Agency may consider and after consultation with the contractor approve claims for retention of rights by the inventor subject to the provisions of this law and the regulations hereinafter provided. "

4. FEDERAL TECHNOLOGY TRANSFER ACT AS THE LEGAL SUCCESSOR OF THE BAYH-DOLE ACT

But the Bayh-Dole Act showed its shortcomings, so it was soon superseded by the Federal Technology Transfer Act. Namely, after some time of implementation of the Bayh-Dole Act, it soon became apparent that without special powers, laboratories owned by the Federal States and operational laboratories would not be able to implement systems of the Bayh-Dole Act kind. As we have seen, the Bayh-Dole Act allowed the federal government to license its inventions on a more efficient basis. Government inventors also received a percentage of royalties in accordance with administrative policy. However, the Office of Personnel Management has decided that such royalties for federal inventors will no longer be allowed, since there was no specific legislative authority for them. When the new Congress convened again in 1985, Senator Dole left the Senate Judiciary Committee to become the leader of the Senate majority. It was the Committee that oversaw the Bayh-Dole Act. A new law, the 1986 Federal Technology Transfer Act, will be adopted soon in 1986 to try to eliminate some of the shortcomings of the Bayh-Dole Act. Senator Slade Gorton, who was a Republican from Virginia, initiated the creation of a unique technology transfer policy in the Senate. However, Senator Gorton was not on the Senate Judiciary Committee. His staff reworked provisions of the old Bayh-Dole Act that included laboratories owned by federal authorities. In what was called America's "The Rust Belt" the economy was in a particularly bad state, and it started things off. Namely, the city of Peoria, Illinois, was home to a Caterpillar tractor factory that had to lay off workers because of fierce competition from abroad. It had to work to innovate. Local community leaders have identified some universal/federal laboratory biotechnology research that could form the basis for the formation of an important new research consortium. The problem was that the local federal lab lacked the legal authority to participate in all of this. Soon the Congress and Senate voted in favour of a bill called the Federal Technology Transfer Act, which allowed federal-owned laboratories to issue licences for their inventions and conduct research and collaboration with industry. Since the law was originally supposed to fall under the Bayh-Dole Act, it has included decentralised technology management, with a local director of the federal lab as the key decision maker. The law also stipulated that copyright for the lab be used to cover the cost of technology transfers, fund new research, and reward federal inventors. It also favoured partnerships with small businesses and those who would manufacture products in the US, as in the case of the Bayh-Dole Act. This law established the Federal Laboratory Consortium and allowed federal laboratories to enter into cooperative research and development agreements (CRADA) and to negotiate licences for patented inventions made in the laboratory.

5. SMALL BUSINESS TECHNOLOGY TRANSFER ACT OF 1992 AND FURTHER STEPS

Further ahead, it all went the logical way: namely, just 6 years later, a law called the Small Business Technology Transfer Act of 1992 came into play. This law increased the opportunities for small businesses and nonprofits to collaborate with federal research laboratories. Agencies with more than $1b in R&D extraordinary budget must reserve 0.3% of their R&D budget for small business technology transfer (STTP) allocation.

In parallel, in December 1992, the related "Small Business Research and Development Promotion Act" (PL 102-564) was adopted to re-approve the Joint Venture Small Business Research Program (SBIR) by September 30, 2000. The Small Business Reauthorization Act of 2000 (PL 106-554) re-approved the programme by September 30, 2008. Numerous extensions have been made with the latest extension of the SBIR program to 2017. They aim to encourage R&D with high technical risk and high commercial rewards.

6. CONCLUSION

Technology transfer is one of the more delicate things in the modern economy, as it is sometimes difficult to find a legal solution that will satisfy financiers of a research project, researchers who come up with necessary inventions, and who would like to be rewarded for their invention by commercialisation, both state and corporate interests that would like to take advantage of any technological advancement so as to maximise the profit and development of the company or the state, that is, to create a competitive advantage for the state or the company. In this regard, we can see progressive US legislation that, through successive legislative solutions, has since the 1986 Beale Act, has managed to make great strides in federal and government-funded research.

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STRESS RESISTANCE OF THE FUTURE SPECIAL EDUCATION TEACHERS IN LINE WITH THE COMPETENCY-BASED APPROACH

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ABSTRACT

The training of a special education teacher (or defectologist) is characterized in the article from the point of the formation of competencies needed for the professional activities. It involves focused efforts to be made to develop certain parameters of professionalism and stress-resistance, in particular, as a professionally important quality of a defectologist. The analysis of the investigations showed that there does not exist a unified approach to the stress-resistance. Separate psychological studies do not allow us to form a holistic view of the stress-resistance structural components of future defectologists and ways, allowing a personality to mobilize for an adequate assessment of the stress exposure and an effective stress management in the professional pedagogical activity. A multi-component model of stress-resistance is applied in our research. The model is adapted to the specific context of the defectologists' training. 110 students-defectologists of the Chelyabinsk State University were tested with standardized questionnaires for assessing stress-resistance. According to the research made, the testees (in general) have a moderate stress-resistance level but its separate components are developed unevenly. Thus, it was found that most testees have reduced levels of psychophysiological self-regulation ability (64.9%), adaptive abilities (65.7%), and emotional stability (57.6%). 69.1% of respondents have irrelevant professional motivation. 42% of respondents exhibit maladaptive automatic emotional responses, 31.8% of respondents use maladaptive forms of coping. Conclusion: Stress-resistance is a professionally important quality formed in the process of educational and professional activity. Therefore, the study of its nature, mechanisms of its development and manifestation, the psychological and pedagogical support of its formation allows us to define the essence of this phenomenon, and to substantiate ways, methods and main directions of overcoming stressful states in the process of the professional development of a future defectologist. The results of the study allowed us to determine the priority areas of the stress-resistance formation in the educational process.

Keywords: *competence, competency-based approach, defectologists (special education teachers), multicomponent model of stress-resistance, student-defectologist's stress-resistance*

1. INTRODUCTION

The training of specialists for professional work with people with a handicap within higher university education is carried out in many countries. The names for the science concerning problematical questions arising with people with a handicap are different: Special Education (England), Orthopedagogiek (Flanders and the Netherlands), Heilpädagogik-Sonderpädagogik (Germany, Austria, Switzerland), Conductive Pedagogy (Hungary), Defectology (Russia), Genees pedagogiek (South Africa) (Broekaert et al., 2000, p. 43).

In Russia the terms “special education”, “defectology” and “correctional pedagogy” are synonyms now. The aim of acting in defectology is not only to find the appropriate methods of teaching of handicapped persons, but also to enlarge their personal and social abilities (Broekaert et al., 2000). The modern training of a future bachelor in the sphere of the special education (defectology) is aimed at the formation of the competencies applied in the professional activities under the conditions of the changed social demands and appearance of the new humanistic social needs. Within the framework of the competence-based paradigm, the goals of special education are associated with the development of professional and personal qualities, the formation of professional competence as a set of certain competencies and the most important characteristics of the theoretical and practical readiness of a future defectologist to carry out pedagogical activities. The priorities outlined within the framework of the competency-based approach determine the need for improving of the professional and pedagogical training of future defectologists in the direction of developing professionally important qualities and competencies that ensure the formation of a competitive professional personality. The analysis of contemporary research in the field of a competency-based approach (M. A. Choshanov, B. D. Elkonin, A. G. Kasprzhak, A. V. Khutorskoy, S. E. Shishov, I. A. Zimnyaya, etc.) leads to the conclusion that a competent specialist not only posesses a certain level of knowledge, a set of formed skills, but is able to implement them in professional and pedagogical activities (Medintseva, 2012). According to Federal State Educational Standard of Higher Education the Bachelor's degree program should prepare its graduates for performing the following professional activities: pedagogical, projective, methodical, organizational and management activies, cultural and educational, supportive activities. The preparation for solving professional tasks involves the formation of universal and general professional competencies, among which, in the context of our study, of particular interest is:

- the ability to carry out social interaction and perform a certain role in the team;
- the ability to manage time;
- the ability to build and implement the trajectory of self-development based on the principles of education throughout life;
- the ability to create and ensure safe living conditions, including cases of emergency situations;
- the ability to organize joint and individual training and educational activities of students, including those with special educational needs, in accordance with the requirements of Federal State Educational Standards.

The formation of the abovementioned competencies involves the application of the targeted efforts aimed at developing individual parameters of professionalism and stress resistance, in particular, which is an integral part of the professional training of a future defectologist.

2. LITERATURE REVIEW

In the study of A. A. Baranov (2002), with reference to L. M. Abolina, L. M. Mitina, S. V. Subbotina, G. F. Zaremba, it is noted that the professional activity of teachers is one of the most stressful (in psychological terms) types of social activity and is included in the group of professions with a big number of stress factors, which in turn imposes high demands on such an integral and complex characteristics as stress resistance (Baranov, 2002). Numerous foreign studies on occupational stress have also revealed that teaching pupils with special educational needs is one of the most stressful occupations (Antoniou et al., 2009; Billingsley 2004; Engelbrecht et al., 2003; Fimian et al., 1986). Stress-inducing factors negatively affected special education (SPED) teacher job satisfaction, commitment, and career decisions (Billingsley, 2003; Platsidou, 2010). Some researchers revealed stress and burnout among pre-service and first-year SPED teachers (Fimian et al., 1986; Klassen, 2011).

Therefore, stress resistance is considered not only as a factor of job satisfaction, increased commitment and retention of SPED teachers (Billingsley, 2003; Durksen & Klassen, 2012; Platsidou, 2010), but also as an important factor in the professional development of future defectologists (Dev, 2018; Klassen, et al., 2011, 2013). The issues of formation of the future defectologists professional competence in the process of University training were considered in the work of N. N. Ivanova, L. N. Makarova (2015). The specific feature of the professional activity of the special education teacher (defectologist) associated with the student contingent is noted in the work of the mentioned researchers. Psycho-emotional stress in the activities of future special education teachers is associated with emotional and moral overload. The latter is connected with work with persons with disabilities, which places special demands on the level of psychological stability of students. The success and effectiveness of training for professional and pedagogical activity of the future speacial education teacher (defectologist), the level of his professional health are determined by such an integral characteristics of the personality as stress resistance (Ivanova & Makarova, 2015). Separate attempts to study stress resistance as a professionally important quality of special education teachers are made in the works of modern researchers (Galanova, 2000; Rustamova, 2015), but they do not analyze the problem in the context of professional and pedagogical training of the future bachelor in the field of special defectologic education. The scientific literature analysis has shown that there exist several approaches to the definition of "stress resistance" today. Stress resistance is considered as a set of personal qualities that allow a person to adapt to the effects of extreme external and internal factors, successfully resolve stressful situations, overcome stress and endure significant intellectual, volitional and emotional load caused by the peculiarities of his life, especially professional activity, without any special harmful consequences for activities, other people and his health (Mitina, 2001; Kovaleva, 2016). From the perspective of the system approach, stress resistance is considered as necessary characteristics of the overall adaptation process and is associated with the regulation of emotional states (Bokhan, 2008). This idea is reflected in the works of N. D. Levitov, A. G. Maklakov, L. V. Marishchuk, V. G. Norakidze, K. K. Platonov, P. B. Zilberman, etc. Within the framework of the subject-activity approach, stress resistance is connected with the processes of self-determination, conscious and controlled self-regulation (this is the position taken by B. V. Zeigarnik, K. A. Abulkhanova-Slavskaya, A. V. Brushlinsky, V. K. Kalin, O. A. Konopkin, etc.), with the desire for self-overcoming (this opinion is reflected in the works of R. Lazarus, L. I. Antsiferova, S. K. Nartova-Bochaver, etc.) (Bokhan, 2008). S.Yu.Vizitova considers stress resistance of teachers as a complex personal characterictics determined by a practical support for three main components: emotional (neuropsychic balance, emotional balance); behavioral (activity, the desire for self-development and self-knowledge, assertive behavior, tolerance, communicative and interpersonal skills); cognitive (autopsychological competence, the ability to set goals and achieve results, the development of skills to overcome stressful situations successfully) (Vizitova, 2012). Stress resistance, as well as mental stability, is viewed as a dynamic structure in the Russian psychology based on the traditional approach to the psyche structure (this idea is reflected in the works of M. F. Sekach, A. A. Naprimerov, O. D. Privalova, etc.). The main components of the dynamic structure of a personality are:

- emotional, accumulated in the process of overcoming difficult situations and manifested in confidence, in a sense of inspiration and satisfaction from the task;
- volitional, which is expressed in self-control, self restraint, conscious self-regulation of actions, bringing them into line with the requirements of the situation. This component performs the control and evaluation function of preserving and restoring the appropriate regulation of activity;
- intellectual, reflecting mental performance, way of thinking (Katunin, 2012, p. 245).

However, this understanding of the essence of the stress resistance concept is not ultimate. Some authors define the structural components of stress resistance in more detail (Guryanov, 2001; Kozlov, 1995; Vlasov, 1990) and single out the following ones:

- motivational which reflects the aspiration of the person for performing the task, represented by various motivational trends that perform incentive, meaning-forming and regulatory functions;
- physiological, determining the supply of energy reserves of the body;
- cognitive, characterizing the degree of awareness and understanding of the service task, providing the function of creating, structuring the approximate basis of professional activity, current analysis and forecasting of the dynamics of service situations;
- operational (motor), combining the applied methods and activity techniques, necessary skills and abilities;
- a communicative component characterizing the socio-psychological aspect of the personality, the state of readiness for interaction (Guryanov, 2001, p. 470).

Berezhnaya N. I. (2003) has similar theoretical views, considering stress resistance as a personal quality with a multicomponent structure. The author identifies the following components in the structure of stress resistance:

1) a psychophysiological component, which includes the properties of the human nervous system;
2) a motivational component, including motives and needs of a person;
3) the emotional experience of a person acquired in the process of overcoming difficult situations in life;
4) a volitional component, providing conscious regulation of the behavior;
5) a professional readiness to solve complex problems;
6) an intellectual component that helps to evaluate the situation logically, to predict its dynamics, to make a reasonable decision (Berezhnaya, 2003).

Katunin A. P. (2016) notes that, depending on the nature of the activity, the structural components of both mental stability and stress resistance occupy various "ranking places" in it, while the "specific gravity" of the consistuents is not always the same. All of them are in a certain interconnection. A compensation is possible due to the less severity of some and a greater development of others (Katunin, 2016). Thus, according to the advanced Russian psychologists the stress resistance is mainly considered as a complex psychological system, that allows coping with stressful situations successfully (in professional activities as well). Its dynamic structure consists of multiple components related to various aspects of adaption to the effects of extreme external and internal factors. All of the components are in a certain interconnection, and each of them makes its own specific contribution to the dynamic whole.
In foreign literary sources stress resistance is understood as the ability of an individual, a group, an organization, or even an entire population to withstand manifestations of clinical distress, impairment, or dysfunction associated with critical incidents, terrorism, and even mass disasters. Resistance may be thought of as a form of psychological immunity to distress (Nucifora et al., 2007). The most developed are the following stress resistance models:

- The deficit model that explains causes and factors of low levels of stress resistance and resilience, and high rates of burnout and attrition of special education teachers. Most studies in the field of stress and stress resistance of teachers rely on this approach (Kozleski, Mainzer, & Deshler, 2000; Billingsely, 2003).
- The phenomenological approach. Foundational to this approach is the assumption that human experience is mediated through personal interpretation. This model focuses on the generalization of individual experiences of stress resistant and resilient SPED teachers in

order to provide a comprehensive description of the phenomenon described (Cunningham, 2015).

- The holistic model. It puts emphasis on multidimensionality of complex phenomena and sees that there can be different levels of explanation for something going on. It suggests that stress resistance as a very complex phenomenon and rather than individual sets of instruments (Simmons & Nelson, 2007).
- The competency-based approach. In line with this approach competences are defined as behavior models or as hidden characteristics of personality with an effect on the performance at work, and resistance to stress-inducing factors refers to the priority competencies of SPED teachers to ameliorate (Waltz, 2016; Mancebo, 2008). SPED teachers' stress resistance is perceived as a precursor of their competence development and at the same time its consequence.

These approaches do not exclude, but, on the contrary, complement each other. In line with these approaches, it is established that stress resistance of SPED teachers is a complex psychological phenomenon resulting from an interaction of many factors, such as optimism and positive attitude, initiative, flexibility, social and emotional competence, sociability, professional skills, self-efficacy, the ability to adequately assess stressors, understanding the main causes of stress and its possible consequences, the ability to change their behavior leading to stress, time management, constructive coping strategies, passion for the profession and for work with children with disabilities (Cunningham, 2015; Engelbrecht et al., 2003; Gillespie at al., 2001; Kebbi, 2018; Mancebo, 2008; Mikolajczak et al., 2006; Waltz, 2016). The conducted scientific and theoretical analysis showed that there has not been formed a single approach to understanding stress resistance up to now. Separate psychological and pedagogical studies do not allow us to form a holistic view of the structural components of stress resistance of future defectologists (SPED teachers) and of the ways that allow an individual to mobilize for an adequate assessment of stress effects and effective overcoming of stress in the professional pedagogical activity. These circumstances explain the necessity of the empirical study of students-defectologists' stress resistance as a systemic, integrative and dynamic character trait and a basic professional competence of future SPED teachers.

3. METHODOLOGY

In the empirical study we rely on a multicomponent structure of stress resistance proposed by A. P. Katunin (2016), including emotional, volitional, intellectual, motivational, psychophysiological, operational, communicative and cognitive components, but taking into account the peculiarity of the future defectologists' professional training. To study the formation of the abovementioned stress resistance components, we used the whole complex of the psychodiagnostic tests and standardized self-report inventories: "Perceptive Assessment of the Stress-resistance Type" by N. P. Fetiskin and V. V. Kozlov, "Stress Sensitivity Test" by Yu. V. Sherbatykh, "The Multi-level Personality Questionnaire "Adaptability" (MLO-AM)" by A. G. Maklakov and S. V. Chermyanin, "Forecast" by V. Yu. Rybnikov, "Method of Diagnosting the Type of the Emotional Response to the Effects of Environmental Stimuli" by V. V. Boyko, "Copying Behavior in Stressful Situations" by S. Norman, D. F. Endler, D. A. James and M. I. Parker, "The Level of Subjective Control" by E. F. Bazhin, E. A. Golynkina and A. M. Etkind, "Tapping Test", "Characteristics of Various Emotions" by E. P. Ilyin, "Diagnostics Method of Learning Motivation in Pedagogical University Students" by S. A. Pakulina and S. M. Ketko, "Psycho-vegetative Questionnaire" by M. Sandomirsky. An empirical study was conducted on the basis of the Chelyabinsk State University (Russia). 110 students of 1-4 courses of the bachelor degree program "Special (defectologic) education" took part in the study. All testees expressed voluntary informed consent to participate in the study.

4. RESULTS AND DISCUSSION

An analysis of the perceptive assessment of the stress-resistance type (the methodology of N. P. Fetiskin and V. V. Kozlov) showed that 54.5% of respondents belong to the stress-resistant type. It means that they clearly set the goals of their activities and choose the best ways to achieve them. Unexpectedness, as a rule, do not knock them off-balance, they strive to cope with difficulties themselves, analyzing them and drawing adequate conclusions. They can work for a long time under stress. They are able and strive to rational time management. 45.5% of respondents are characterized by irresistance to stress, desire for competition. As a rule they are not satisfied with themselves and circumstances, they are aggressive, impatient and hyperactive. But the indicated manifestations for these respondents are moderate. “Stress Sensitivity Test” by Yu. V. Sherbatykh has revealed that the stress sensitivity of the majority of respondents (76.3%) is within the normal range, while 23.7% of respondents have an increased sensitivity to stress. 39.1% of respondents show excessive reactions to circumstances that they cannot influence on. 52.8% of respondents tend to complicate everything, which can lead to stress. 31.8% of respondents are prone to use destructive ways of overcoming stress. 9.1% of respondents lack constructive ways to overcome stress. 17.3% of respondents have a predisposition to psychosomatic disorders. The analysis of self-assessment of coping behavior in stressful situations (the methodology of S. Norman et al.) has showed that the majority of respondents (71%) use strategies focused on problem solving which characterizes the constructive style of behavior in various life situations. This style of behavior is characterized by the use of all available personal resources to find possible ways to solve the problem effectively. At the same time, the choice of a problem-oriented coping depends on the possibility of an objective analysis of a specific problem task, its significance and complexity; on the assessment of coping resources necessary for coping with a stressor, e.g. knowledge, intellectual and physical data, support of others, etc. 16% of respondents in stressful situations rely on the emotionally-oriented coping behavior, i.e. use a relatively adaptive strategy focused on the emotional response to the situation, as a result of which such emotional manifestations as protest, optimism, suppression of emotions, submission, aggression, self-blame are possible. Such emotional states can make it difficult to concentrate and purposefully analyze a stressful situation. 13% of respondents choose a strategy of avoidance. They tend to avoid any contacts with the surrounding reality, they avoid solving problems, doing cognitive analysis, reflecting emotionally and performing active behavioral actions. Studying adaptability (the questionnaire "Adaptability"), we can note that 65.7% of respondents show a low level of adaptive abilities, 25.2% of respondents have an average level of adaptive abilities, 8.1% of respondents have high adaptive abilities. 63.9% of respondents have a low level of behavioral regulation. 29.7% of respondents have an average level and 5.4% have a high level. The communicative potential of 61.3% of respondents is low, of 30.6% is medium, and 8.1% of respondents have a high communicative potential. 73% of respondents have a high level of moral normativity, 18.9% of respondents have a medium level, 8.1% have a low one. 24.3% of respondents is characterized by a clearly expressed desadaptation, 55.8% of respondents is characterized by moderate and 18.9% do not experience any. Asthenia is moderate at 50% of respondents, 26.1% of respondents have clearly expressed asthenia and asthenia is absent at 23.4% of respondents. Studying neuropsychiatric stability (“Forecast” methodology), we have revealed that 55% of respondents show a satisfactory level, 23.4% of respondents have a high level, and 21.6% of respondents have a low level of psychological stability. An analysis of emotional reactions to external influences (the questionnaire of V. V. Boyko) has showed that 58% of respondents have a dominating euphoric formula. It is when the emotional system as a whole is tuned to positive stimuli, usually arising positive mental states aimed at the people around and activities. These respondents perform creative and constructive activity, good switchability, and a tendency to the collective forms of activity.

42% of respondents respond to the external influences predominantly with non-adaptive automatic emotional reactions of a refractory and dysphoric type. 42% of testees respond to various external influences mainly with non-adaptive automatic emotional reactions of refractory and dysphoric type. 41% of respondents have a dominating refractory emotional reaction. Their emotional perception system gives in to various external influences. It is expressed in closed feelings, a settled life, selectivity of contacts, preference for subordinate roles, and a tendency to spend time alone. 1% of respondents have a dysphoric formula. It means that the emotional system is set up for negative stimuli, which is expressed in negative behavioral acts and mental states. An analysis of emotions (the methodology "Characteristics of Various Emotions" by E. P. Ilyin) has showed that 42.4% of respondents have poorly expressed emotional excitement, 25.2% of respondents have moderate excitement and 32.4% of respondents are highly emotional. 52.2% of respondents have high emotion intensity, 35.1% of respondents –moderate and 12.7% of respondents – low. 49.6% of respondents have short emotion duration, 29.7% of respondents – moderate, 20.7% of respondents are characterized by long emotion duration. The negative impact of emotions on the effectiveness of the activities and communication is weakly expressed among 40.5% of respondents, moderately – among 37.8% of respondents, and emotions have an intense negative impact on the activity and communication effectiveness among 20.7% of respondents. Studying the locus of control ("The Level of Subjective Control method"), we have got the results that 54.5% of respondents show a high level of subjective control over significant situations. 45.5% of respondents have a low level of subjective control. They believe that most of the events in their lives are the result of an incident or actions of other people. Most often, respondents show an external locus of control in relation to diseases (50%), personal failures (47.3%), production (51.9%) and family problems (50.9%). Studying the motivation of learning (the methodology of S. A. Pakulina and S. M. Ketko), we have figured out that 69.1% of respondents have an irrelevant professional motivation with an external motivation for entering a pedagogical university and narrow cognitive motives. 30.9% of respondents have a relevant professional motivation with an intrinsic motivation for entering a pedagogical university and broad cognitive motives. An analysis of psycho-vegetative manifestations ("Psycho-vegetative Questionnaire" by M. E. Sandomirsky) has revealed that 64.9% of respondents have violations of the vegetative tone of varying severity, including moderately expressed (21.7%) and significantly expressed (4.5%). At the same time, 57.3% of respondents have the identified violations of psychogenic nature, associated with the influence of stress factors. An analysis of the tapping test results has showed that 30.6% of the respondents have a performance curve of an intermediate type, which indicates a moderate-weak nervous system. 24% of the respondents have a concave type of the performance curve due to the ability to a short-term mobilization. Such respondents also belong to the group of people with a medium-weak nervous system. 17.6% of the respondents have a downward performance curve, which indicates a weakness of the nervous system. 14.8% of the respondents have a convex performance curve, which characterizes their nervous system as a strong one. 13% of the examined have an even type of curve, which indicates a nervous system of medium strength. Summarizing the results of the study using this set of techniques, we came to the conclusion that the indicators of stress resistance as a multicomponent structure and the basic professional competence of future defectologists are at a satisfactory level. At the same time, analysis of the results of the study in the context of assessing the level of formation of the individual components of stress resistance allows us to conclude that their development is uneven among future defectologists: strong-willed, intellectual, motivational, operational and cognitive components correspond to the average level of development, the level of development of emotional and psychophysiological components is reduced.

5. CONCLUSION

Thus, our study has revealed that the level of stress resistance of the examined students is satisfactory in general. However, some separate components of stress resistance are developed unevenly. Volitional, intellectual, motivational, operational and cognitive components are developed at an average level. The level of the emotional and psychophysiological components development is lower. The results obtained indicate the need for focused psychological and pedagogical work with future defectologists to develop the skills of emotional and psychophysiological self-regulation as components of stress resistance in the context of the educational process. The conducted study allowed us to conclude by saying that stress resistance is an important psychological quality and a basic competence acquired by a future defectologist in the process of educational and professional activity. Therefore, the study of defectologists' stress resistance, its nature, mechanisms of development and manifestation, psychological and pedagogical support of its formation allows us not only to define the essence of this phenomenon, but also to substantiate the ways, methods, main directions of overcoming stressful states in the process of professional and pedagogical formation of a future defectologist.

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INTEGRATED REPORTING: HUMAN CAPITAL

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ABSTRACT

The article discusses the problem of the possibility of recognition and evaluation in the system of business accounting and integrated reporting of the economic category - human capital. Matters relating to the content of the category of human capital are studied mainly in the field of social economics. Nevertheless, the International Concept of Integrated Reporting sets the task for the accounting community to recognize and evaluate human capital as an object of business accounting with the subsequent reflection of its value in the structure of integrated reporting. Research in the field of accounting and management is often associated with the digital transformation of information that can significantly change the traditional model of financial reporting. The business accounting model aims at the formation of integrated reporting, which, as a basis for assessing the value of a business, takes an assessment of the value of various types of capital, including human capital. In general, human capital is seen as an opportunity to acquire knowledge, skills, motivation that can be used during the short, medium, and long term periods of value creation, but only if these processes can be reliably measured and evaluated so that costs these processes could be capitalized and reflected as human capital in integrated reporting. The main purpose of business accounting for the reflection of human capital in the first stage can be recognized as the capitalization of costs associated with the selection, training and retraining of the organization's personnel, which are an integral element of the cost of human capital. At the second stage, these capitalized costs should form a stock of the cost of human capital in integrated reporting. Consequently, the main task of business accounting of human capital should be recognized as the allocation of the total costs of production and management, costs associated with the type of activity for the formation of high-quality personnel of the economic entity, since such costs in the business accounting system should be capitalized. Such a method in business accounting will allow not only to exclude unproductive costs inherent in it from the cost of manufactured products (works, services), but it will also increase profits and, therefore, will increase the market valuation of business value.

Keywords: *Business accounting, Integrated reporting, Human capital*

1. INTRODUCTION

As the subject of this article's research, there are questions about the specifics of disclosing the category of human capital in integrated reporting, which fundamental concepts of integrated reporting characterize as: «competencies of employees, their abilities and experience, as well as their motivation to introduce innovations» (ISIR, 2013, paragraph 2.15). In this characteristic of human capital, two elements are identified: the competencies of employees and the motivation to introduce innovations». The first element reflects the possibility of improving the personnel management system through the acquisition of the latter's experience, knowledge and skills acquired by employees in the framework of organizations in order to obtain additional

economic and social benefits. In this case, it should be based on the fact that the knowledge and skills acquired by employees within the organization's activities are self-increasing value and are assets that are an economic resource, which CFPFS defines as «a right that has the potential to create economic benefits» (CFPFS, 2018, paragraph 4.4). At the same time: «A law can meet the definition of an economic resource and, therefore, be an asset, even if the probability that it will create economic benefits is small» (CFPFS, 2018, paragraph 4.15). Consequently, human capital, in terms of its element of competence, can and should be recognized as an asset in integrated reporting. Nevertheless, the question remains of recognizing the self-rising cost of human capital in the business accounting system to include its valuation in the integrated report. «What has emerged in practice, and has been highlighted by scholars, is that IR makes sense only if it is the result of» integrated thinking «developed inside the organization - without integrated thinking the process of IR may be little more than a marketing activity» (Katsikas E., Rossi F.M., Orelli R.L., 2017, p. 7). At the same time, integrated thinking itself is an element of the competence of human capital. As for the second element of human capital - the motivation to introduce innovations, this parameter equally reflects both the intellectual component of intellectual capital and the competence of human capital. Moreover, the innovation process is characterized by the selection of target market customers and their services, and is evaluated by the profitability indicator. Therefore, the motivation for innovation is more related to the structure of business accounting, which generates information about the capitalized value of intellectual capital.

2. HUMAN CAPITAL AS AN OBJECT OF BUSINESS ACCOUNTING AND INTEGRATED REPORTING

2.1. Competencies as an element of human capital

The hypothesis of the economic behavior of human activity within the framework of the company's functioning in a certain place and in a certain period of time, which is based on a humanistic social history that considers human activity as ambitions of efforts and failures of individuals in a given socio-psychological environment, can be taken as the basis for studying the concept of human capital, and using the theory of institutional economics, the founders of which are deservedly Alchian A.A. (Alchian A.A., 1961), Arrow K.J. (Arrow K.J., 1970), Coase R.H. (Coase R.H., 1937), Keynes J. M. (Keynes J.M., 2007), Williamson O.I. (Williamson O.I., 1996). The most important aspect in economic theory related to the concept of human capital is the theme of motive or intention that arises from any useful discussion of human activity, that is, «intention or desire, which is the absolute point of the report, and therefore the «fact», although and not a natural event or effort» (The philosophy of economics. An Anthology, 2012, p. 126). The recognition of «intention and desire» as a fact of human activity, even if indirectly, is the basis for the inclusion of human capital in the value of stocks of all types of capital, taking into account the «dualistic concept, embodied in motivation, which is reflected in the economic concept of value. The content of the latter is definitely not limited to the idea of quality measured by price, since in real conditions it is always measured not ideally» (Knight F., 1976). The motivation of human activity is measured mainly by qualitative indicators, rarely measured by price, since the idea of value contains a certain norm, and not an indicator of activity. Explanations of the concept of human capital are usually associated with the categories of «goals» and «means». Since «scientific research, first of all and, of course, the problem of the correspondence of means to the set goal is available. Therefore, we (within the limits of our knowledge) are able to establish which means correspond (and which do not correspond) to a given goal, we can thereby weigh the chances of how, using certain means at our disposal, to achieve a certain goal» (Weber M., 1990). To achieve the strategic goals of the organization, in addition to assessing the many factors that influence their achievement, it is also necessary to evaluate the company's capabilities related to training and staff development.

Strategies that aim to achieve high results require a significant investment in staff. The technologies of business accounting and integrated reporting allow us to evaluate the results of investing in personnel, as well as in the processes associated with the correlation of individual and corporate goals and objectives. To achieve these goals and objectives, it is necessary to decide on the decision to «produce or buy», that is, «buy» an employee in the labor market or invest in improving the professional competencies of an employee. In our study, we were faced with a lack of information about the price of labor in the labor market, as well as the total costs of training and retraining personnel in the organization. To make decisions on the purchase of skilled labor, an effective market mechanism must exist - a labor market capable of not only providing information on the competencies of potential employee, but also assessing its fair value. At the same time, one should take into account the fact that on the labor market the employer does not buy the employee and not even his competencies. The organization acquires the right to use the competencies of the employee for a specified period on appropriate conditions. Consequently, human capital at the time of its acquisition in the market reflects only the organization's right to use the competencies of the employee. This right to use employee competencies is an economic resource of the organization, and the right to use them forms an asset - human capital, which should be reflected in the integrated report. Nevertheless, the conclusion of transactions in the labor market means the use of a price mechanism, the absence of which in the Russian economy makes it difficult to use a transactional approach. To solve this problem, one has to confine oneself to the traditional costly approach, the use of which, today, is reduced to a system of accounting for advertising costs, labor exchange services and other minor expenses. From this we can conclude that the value of the human capital of the organization as an economic resource will mainly be determined by investment costs. At the same time, the main task of business accounting of human capital will be determined by separating these costs from the total management costs with their subsequent capitalization. To solve this problem, it will be necessary to develop a cost management system for the types of activities included in the human capital business accounting model. In this situation, one cannot do without the theory of institutional economics, more precisely, without the principal-agent model presented in it. «Principal models - an agent in which an agent has some informational advantages compared to a principal, provides a natural framework for studying the thesis that informational studies are of economic importance in many respects that develop in the course of trade transactions, and therefore should be considered on a par with standard resource restrictions» (Holmxtrom B., Milgrom P., 1987). On this basis, E. Furubotn concluded that «Firms, deciding which of the employees to hire, quite rationally take into account the personal qualities of the applicants. Ignoring personal qualities can lead to excessive competitive behavior» (Furubotn E., Richter R., 2005). This problem is also given attention in the Labor Code of the Russian Federation: «Employee qualifications - level of knowledge, skills, professional skills and work experience of an employee» (LC RF, article 195.1). This legal norm corresponds to the definition of human capital given in ISIR - «human capital - the competencies of employees, their abilities and experience» (ISIR, 2013, paragraph 2.15). Moreover, article 196 LC RF provides for certain provisions directly related to the assessment of human capital: «The need for training employees (professional education and vocational training) and additional professional education, as well as the direction of employees to undergo an independent assessment of qualifications for their own needs, is determined by the employer» (LC RF, article 196). In addition, the employer determines the forms of training and additional professional education of employees, the list of necessary professions and specialties, including for referring employees to undergo an independent assessment of qualifications. Therefore, in the model of business accounting of human capital in order to be reflected as a separate object, a set of logical accounting procedures should be defined for it, allowing: to recognize and identify the accounting object; evaluate the object; distribute its value over time;

cease to recognize the object of accounting. Based on these procedures, a business accounting model for human capital should be built and a system of the organization's chart of accounts should be developed. Regarding the model of business accounting of human capital, we can say that it represents an attempt to measure in monetary terms the total cost of human capital in order to include it in the business valuation in integrated reporting. It should be emphasized that only the total costs of the organization, forming the competence of employees and their motivation, should be recognized as an element of the cost of the stock of human capital, since the organization does not and cannot have the right to ownership of either the competence or the ability and experience of employees. One of the tasks of business accounting is to extract these costs from the total costs of management, with their subsequent capitalization. This task is complicated by the fact that: «Personnel costs are an integrated indicator generally accepted for countries with market economies, which includes all expenses associated with the functioning of human resources in an organization; salary costs; employer payments for various types of social insurance; expenses for various kinds of social payments, for the maintenance of social infrastructure; for training and staff development, for paying dividends and buying preferential shares» (Mitrofanova E.A., Sofienko A.V., 2016), i.e. covers a very wide range of costs and, accordingly, capital. Therefore, the task of business accounting for human capital should be clarified: to identify, evaluate and identify from the whole range of personnel costs, costs that are elements of human capital and capitalize them. The next task of the business accounting model of the total cost of labor reproduction is the classification of the costs of the reproduction process, which should be highlighted:

1. The cost of staffing, i.e. determines the costs associated with the hiring, training, development of their own personnel;
2. The costs of the distribution of personnel, i.e. the costs of moving, moving staff within the organization associated with technological and reorganization transformations of the management structure in the company.

The grouping of costs by the phases of the reproduction process plays a decisive role in the capitalization of expenses in order to reflect these costs as an element of the stock of the cost of human capital in integrated reporting when clearing the cost of sales from unusual costs. Unfortunately, this fact is not taken into account by the traditional accounting system, recognizing this type of costs as expenses of the period, and, accordingly, writing off these costs in the reporting period as part of management costs. Returning to the classification of costs of the reproduction process, I would like to note that: «Managers of many companies drew attention to the fact that if their activities were evaluated only by short-term financial indicators, it is always difficult to achieve any investments for the development of their employees, systems and organizational issues. The traditional accounting system considers these costs as expenses of the reporting period; therefore, it is easy to imagine a reduction in investment in training and development as short-term profit. The long-term adverse effects of this approach will only appear in the future» (Kaplan R.S., Norton D.P., 2007). This primarily relates to the process of training professional specialists, when organizations finance vocational schools and higher educational institutions. This allows the organization to provide qualified specialists with their business activities. In addition, the investment costs of training can be reflected as a stock of the cost of human capital in integrated reporting.

2.2. Motivation of specialists involved in innovative processes

In the fundamental concepts of integrated reporting, motivation is defined as the ability to innovate: «loyalty and motivation to improve processes, goods and services, including their ability to lead, manage and collaborate» (ISIR, 2013, paragraph 2.15). This provision most likely refers to the right to use a previously created economic resource expressed in the stock

of the cost of human capital, and not to the formation of a stock of the cost of human capital. Most likely, we should talk about transforming the stock of the value of human capital into the intellectual capital of the organization. Therefore, speaking about the totality of knowledge, skills and abilities of specialists, which form the basis of the organization's human capital, in the business accounting system, it is necessary to clearly distinguish between methodological support for accounting for the formation of the stock of value of human capital and the processes of its use in innovative processes. The concept of intellectual capital shifts the focus from the presence of a stock of the value of human capital to its use. The use of human capital means the existence of labor agreements and processes aimed at transforming human capital, that is, his personal knowledge and professional experience of a person, into a product or service that is important both for the organization and for the clients of this organization. At the same time, highly qualified personnel may not want to make a full contribution to innovation processes if there is not enough motivation and freedom of decision-making is not presented. That is, it is necessary to bring personal goals and goals of the organization into line. Therefore, in modern conditions, knowledge, experience and information acquire an independent economic turnover, isolated from human capital. Thus, for the formation of a stock of the value of intellectual capital, it is necessary to involve its subjects (individuals and legal entities) in the system of labor relations by concluding additional effective contracts, the value of which can be expressed in an economic resource, the right to which the employee has, subject to special conditions. «Recent research in the public sector has demonstrated the positive relationship of employee capability and satisfaction on the value creation process» (Massingham P.R., Tam L., 2015). However, such a positive effect can be obtained only if the organization has clearly expressed obligations regarding the motivation of the employee when involving him in innovative activity and when he reaches certain indicators.

2.3. Integrated Thinking and Human Capital

The integrated thinking of a professional specialist is his ability to provide an informational picture of the creation of value by the organization in the short, medium and long term. In this aspect, the business model of value creation can be characterized as the intellectual capital of an accountant. At the same time: «The organization's business model is a system of transforming resources through its commercial activities into products and results aimed at achieving the organization's strategic goals and creating value over the short, medium and long term» (ISIR, 2013, paragraph 4.11). The solution to this problem requires the transfer of emphasis in the professional thinking of accountants to the formation of integrated thinking. «Integrated thinking is the organization's active consideration of the relationship between its various operating and functional units and the capitals that the organization uses or affects. Integrated thinking provides integrated decision-making and actions focused on value creation in the short, medium and long term» (ISIR, 2013, glossary, paragraph 8]. Integrated thinking, in our opinion, not only determines the organization's ability to understand the relationship between its various operational and functional units and capitals, it is much broader. Integrated thinking is the ability to combine related economic research, which is able to explain the processes of value creation over time and their importance in ensuring the sustainable development of the organization. To this we can add that business accounting should become a mechanism of information support, including business analysis, designed to become a motivational element in confirming or making decisions of financial capital providers in the allocation of resources necessary to create value in the short, medium and long term periods. Note that the question is not only about using the knowledge and skills of employees in the process of creating value, that is, their professional skills, but also transforming professional competencies into integrated thinking over time. To solve this problem, the specialist must determine the most accessible methods for users to create in business accounting and disclose

essential information that explains how business processes have affected the organization's strategy, its business model and capital. This integrated thinking, which allows to generally assess the degree of sustainability of the development of organizations in the future, differs from professional competencies. An assessment of integrated thinking can only be given by the market, when specialists with integrated thinking can reveal the full picture of assessing the value of a business based on the stock of the cost of all types of capital and the degree of profitability of the business. The main thing that you need to pay special attention to the developers of the business accounting model is to provide information to financial capital providers about the distribution of resources among the objects of the value creation life cycle in time. Therefore, at each stage of the life cycle of creating value, key indicators of activity parameters should be highlighted, expressed as economic resources and obligations involved in the process of creating value in the short, medium and long term.

3. CONSLUSION

The model of business accounting of human capital proposed in the article makes significant changes to the traditional accounting system, reflecting the costs of acquiring knowledge and skills by employees of the organization as a total cost of management. The model of business accounting of costs for the formation of a stock of the cost of human capital involves accounting for investment costs for the acquisition of knowledge and experience by employees with their subsequent capitalization and reflection in the structure of the organization's assets as human capital. At the present stage of development of the Russian market economy, the most relevant will be information on innovative costs that form the professional competencies of the organization's employees. When developing a business accounting system for human capital, motivational costs should also be taken into account, reflecting the degree of involvement of professional employees in innovative processes. This type of cost reflects the level of use of human capital, knowledge and skills in the formation of intellectual capital. «The more actively integrated thinking is introduced into the organization's activities, the more connected information will be inherent in management reporting, analysis and decision making. It also leads to closer integration of information systems that support internal and external reporting and the provision of information, including the preparation of an integrated report» (ISIR, 2013, p.4). In conclusion of the article, the authors would like to note that the exclusion from management costs of the costs associated with the acquisition, training and retraining of personnel will significantly reduce the cost of the product produced by the organization and increase its profitability. At the same time, the capitalization of such costs will increase the valuation of the business and will affect the growth of the organization's stock price on the stock exchange.

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STUDENTS VISION OF THE ORGANIZATIONAL CULTURE OF THE MODERN UNIVERSITY

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ABSTRACT

The organizational culture of the educational institution has an impact on the overall development of students, and on the formation of personality qualities, and patterns of behavior. Being a united basis of the educational institution, the organizational culture of the modern university determines the stability and success of the university in the competitive environment. The study of the impact of the organizational culture of the university on various aspects of student life is extremely important due to the fact that students are carriers of the peculiarities of culture, traditions, values, image of the university not only during their studies but also many years after graduation. The study uses the data collected by the authors as a result of a survey of the students of the university. The university, where the research took place, is located on the territory of the Russian Federation. This is a regional, multi-disciplinary higher educational institution. There were interviewed 169 people. To determine the type of the organizational culture, the authors used the Organizational Culture Analyze Instrument (OCAI) by Cameron & Quinn. According to the received data, the clan type of organizational culture is currently dominant at the university. The clan organizational culture among students implies friendly relations in the student environment, cohesion among students. These study results can be considered as the starting material for later construction of the image of the target organizational culture of the modern university, would increase the competitiveness of the institution in the educational market, and as a consequence, increase the competitiveness of the future graduates.

Keywords: *organizational culture, students, modern university*

1. INTRODUCTION

The organizational culture of an educational institution has an impact on the overall development of students, on the formation of personal qualities, patterns of behavior; culture forms corporate standards, style, traditions and norms of intra-organizational relations. As soon as an applicant becomes a student, he is influenced by the organizational culture of the educational institution, becomes a carrier of the features of the organizational culture of the University, its values and norms. The study of the influence of the organizational culture of the University on various aspects of student life is extremely important due to the fact that students are carriers of the peculiarities of culture, traditions, values, and image of the University not only during their studies, but also many years after their graduation (Zaharova, 2006), (Hanevich, 2004). The system of professional beliefs, norms of behavior, attitudes and values is "absorbed" by students and transmitted through graduates to the organizations and institutions they come to after graduation. In this regard, it is important to analyze students ' perceptions of the organizational culture of the institution. Differences in the vision of the existing and preferred future organizational culture among students make it possible to identify ways to change and improve culture at the University, the identified features in the views of culture will allow you to predict the behavior and reaction of the student subculture to "external" and"

internal " events. The problem of organizational culture of a modern University and the student's idea of it is covered in works on psychology and pedagogy, but the number of works on this topic is small (Clark, 1998), (Zaharova, 2006), (Hanevich, 2004). Zakharova investigates the problem of differences in organizational cultures of educational institutions and business organizations in order to bring them closer together (Zaharova, 2006). Bogdanova explores the process of socialization of students in the context of University corporate culture (Bogdanova, 2012). The organizational culture of Russian universities as an independent phenomenon is studied in the works of Zakharova, Makarkina, Petrenko, Sazykina, Khanevich, Yablonskene and others. By organizational culture, we mean "a set of the most important assumptions accepted by members of the organization and expressed in the values declared by the organization, setting people guidelines for their behavior and actions" (Spivak, 2003), (Schein, 2004; 2015), (Szczepanska-Woszczyna, 2015), (Vance, Raciti, Lawley, 2016). Organizational culture in higher education includes the same constructs that characterize the concept of "organizational culture" in General: values and norms, beliefs and expectations, behavioral stereotypes in the interaction of people, myths and beliefs, rituals and traditions, symbols, language, etc. (Kunde, 2002), (Chatman, O'Reilly, 2016). These characteristics help to distinguish educational institutions from each other. These constructs determine the way of thinking and actions of employees, teachers, postgraduates and students both inside and outside the University. The organizational culture of the University is the unifying Foundation for the institution: the depth of connections between members of various structural divisions, their sense of belonging to a single community, their ability to build communications-determine the stability and success of the University in a competitive environment. For effective management of the University in modern conditions, universities make the necessary changes to the organizational structure. The structure of a developing University should be viable, flexible and dynamic, effectively functioning, ensuring the competitiveness of graduates in the labor market. Values and norms, both transmitted by the organization as a whole and by the student subculture, may differ depending on the dominant type of organizational culture. Analyzing various typologies of organizational culture, we stopped at the model of competing values of K. Cameron and R. Quinn (Cameron & Quinn, 2011), which distinguishes four types of culture: clan, market, bureaucratic (hierarchical) and adhocratic. The expression of clan culture implies loyalty and loyalty to traditions, team cohesion and a favorable moral climate, teamwork, and commitment of employees. Clan-type organizations are imbued with shared values and goals, cohesion, participation, individuality, and a sense of the organization as "we". The limitation of this culture is the lack of focus on the organization's performance indicators, "getting stuck" in interpersonal conflicts, intrigues, and familiarity (Cameron & Quinn, 2011). The connecting essence of an organization in an adhocratic culture is a dedication to experimentation and innovation. Adhocratic culture involves encouraging personal initiative and freedom, accelerating adaptability, and providing flexibility and creativity in situations that are characterized by uncertainty, ambiguity, or information overload (Cameron & Quinn, 2011). The organization is focused on the future needs of the market, but is poorly structured, not formalized, and managed in a "manual mode". An organization with a pronounced bureaucratic type of organizational culture is a formalized and structured place of work. What people do is controlled by procedures. For such an organization, it is important to maintain a smooth running of the organization's activities. The organization is United by formal rules and official policies. Long-term concerns of the organization are to ensure stability and smooth performance indicators of cost-effective operations (Cameron & Quinn, 2011). The market type of organizational culture determines the type of organization focused on the external environment, not on its internal Affairs. Its main focus is on operations with external clients. This organization is focused on results, the main concern is the implementation of the task. In the market culture, personal relationships and employee preferences in decision-making are poorly

taken into account (Cameron & Quinn, 2011). Thus, in organizations with different types of organizational culture, different values, norms, and behaviors are transmitted and assimilated. The purpose of the study is to identify and interpret the features of students 'ideas about the organizational culture of the University, as well as to compare the nature of students' ideas about the real organizational culture and what it should ideally be.

2. METHODOLOGY AND DATA

The empirical study was conducted on the basis of the University of Chelyabinsk, the sample of subjects was 169 students of 2-4 courses of various faculties. A questionnaire by K. Cameron and R. Quinn was used as a method of studying organizational culture. This method was chosen as a result of the analysis of various typologies of organizational culture; it is the most universal, easy to fill in, and is often used in empirical research (there is a possibility to compare the results). The main idea of this model is that all organizational cultures can be described using two parameters: a) orientation to the external environment or to the internal environment, and b) dominance of the values of flexibility or stability. In accordance with the methodology, the type of culture prevailing in the organization and the most desirable (market, adhocratic, clan or bureaucratic) is determined.

3. RESULTS

At the first stage of the study, the existing type of organizational culture at the University was determined. At the moment, according to students, the University is dominated by clan (estimated 26.7% of subjects) and bureaucratic (26.9 %) types of organizational culture. Other types of culture are less pronounced: market-based (24.4 %) and adhocratic (22 %). In our opinion, the predominance of bureaucracy in the organizational culture of the University reflects, first of all, the specifics of the University as an educational institution, the main goal of which is to systematically and methodically organize the educational process of knowledge transfer. The realization of this goal is not conceivable without schedules, regulations and technologies, without documenting all procedures. Clan culture implies friendly relations among students, unity among students, and leaders are expected to help expand the sphere of competence and gain opportunities for personal development. An organization with an adhocratic culture is a dynamic creative place of work/study, whose connecting essence is a dedication to experimentation and innovation. The market type of organizational culture determines the type of organization focused primarily on the external environment and the fulfillment of tasks. In the market culture, personal relationships and preferences of employees (in our case, students) are poorly taken into account in decision-making (Cameron & Quinn, 2011). At the next stage of the study, students ' perceptions of the preferred future organizational culture of the University were analyzed. According to the data obtained, the clan type of organizational culture is the most preferred among University students (31.3 % of the subjects). The bureaucratic type of organizational culture is considered desirable by 24.5 % of respondents. Adhocratic and market culture would be preferred in the future by 23.1 % and 21.1% of students, respectively. In order to verify the statement that the compared indicators for evaluating the existing organizational culture and the ideal organizational culture differ from each other, two dependent samples were compared using the T-Wilcoxon test (table 1).

Table following on the next page

Table 1: Results of verification of the statement about the difference between the existing and preferred organizational culture

	The clan type of organizational culture	The adhocratic type of organizational culture	The market-oriented type of culture	The bureaucratic type of organizational culture
Z	-9,262	-5,154	-4,343	-8,478
p	0,000	0,000	0,000	0,000

Source: authors own research

The differences found are highly significant (for all p=0,000). Thus, the results of the study show that the ideas about the organizational culture currently available differ significantly from the ideas about the ideal culture. Analyzing the differences in the vision of the existing and preferred types of organizational cultures, we can note the following: students would prefer to change the organizational culture in the future in the direction of greater " clannishness" and encourage initiative, innovation and creativity. The respondents ' assessments show a desire to reduce the intensity of the market organizational culture in the future. There is also a desire to reduce the formalism and rigid structure of the organization (bureaucratic type of organizational culture). This analysis of differences in students ' perceptions of preferred and current culture makes it possible to identify ways to change. The authors of the methodology note that special attention should be paid to data that show differences between existing and preferred cultures by more than ten points. In our case, the maximum discrepancy between the existing and preferred cultures is 4.6 points for the clan type of organizational culture.

4. CONCLUSION

Thus, at the moment, according to students' estimates, the University is dominated by a bureaucratic type of organizational culture with a tendency to the clan type. This is confirmed by the presence in the organization of certain features inherent in the bureaucratic culture, based on the dominance of regulations, rules, procedures and instructions. The clan type is characterized by a friendly atmosphere in the team, its unity, loyalty, and attitude to teachers and employees of the organization as educators. Institutions with a clan culture encourage teamwork. Comparing the differences in the vision of the existing and preferred types of organizational cultures, we can conclude that changes in organizational culture should not radically change the existing way of life, as evidenced by the minimum deviations between the indicators of culture "as it is now" and "as it should be in the future". The results obtained in the study can be considered as a source material for building an image of the target organizational culture of a modern University, which contributes to improving the competitiveness of the educational institution in the market of educational services, and as a result, increasing the competitiveness of future graduates.

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AN EXPERIMENTAL STUDY OF THE RELATIONSHIP BETWEEN THE QUALITIES OF COMPETITIVENESS OF UNIVERSITY STUDENTS AND PROFESSIONAL ORIENTATION

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ABSTRACT

The article considers the problem of the formation of competitiveness of university students, analyzes the concept of "student competitiveness" and the quality of competitiveness of university students, reveals the structure of a universal model of a competitive university student, presents the results of an experimental study of the relationship between the professional orientation of a student's personality and the qualities of competitiveness, analyzes the expressiveness of the qualities of competitiveness of university students various professional Flax orientation.

Keywords: *competitiveness of university students, personality competitiveness qualities, professional orientation*

1. INTRODUCTION

In accordance with the concept for the development of continuing education of adults in the Russian Federation for the period until 2025 (2019), the problem of students' competitiveness remains topical. This concept addresses the need for positive effects of continuing education of adults, including improving the competitiveness of the adult population through the development of professional competencies, taking into account the requirements of the labor market, the development of functional literacy and the development of personal qualities. While addressing the problem of competitive student development, higher education faces the two most significant problems. First, the general model for developing a competitive student of various directions of professional training is developed insufficiently. In the model, it is necessary to specify:

- Public demand;
- Factors and conditions for effective development;
- Content of educational disciplines aimed at developing personal competitiveness;

- Criteria and indicators of competitiveness development.

Secondly, there is an underdeveloped technology of determining the level of competitiveness of students, which takes into account different personal and professional components depending on the direction of professional training.

2. THEORETICAL FOUNDATION

The problem of competitiveness of university students in Russian educational space has become the most topical since the transition to a market-based economy in the early 90s. Many researchers studied this problem. G.L. Azoev and R.A. Fatkhudnikov considered competitiveness in terms of rivalry and competition. J.I. Aytuganova, L.A. Bodian, T.V. Kolgurina considered competitiveness as an integrative property, personality state, or trait. A.A. Angelovsky and E.V. Maximova studied competitiveness as an integral quality or personality characteristic associated with the effective achievement of production goals. In the studies of V.I. Andreev, A.P. Bykova, and E.V. Potapova, the competitiveness of a student is considered as a set of personal and professional abilities connected with the aspiration to high quality and efficiency of his activities. In more recent studies, the competitiveness of a student is more often considered as an ability that provides high level of professional knowledge and skills (S.D. Reznik, A.A. Sochilova), as well as an ability that provides career prospects (S.A. Domracheva) or as a strategic quality that allows people to be in demand in the labor market (D.A. Konoplyansky). From our point of view, the competitiveness of a university student is the ability to achieve professional success in a competitive environment conditioned by key competencies and mobilizing personal qualities.

3. DEVELOPMENT OF QUESTIONNAIRE STATEMENTS

In this study, we implemented V.I. Andreev's methodology to study the main components of student competitiveness (Andreev, 2004, pp. 382-387]. In order to analyze the correlation of the above-described competitiveness components with the professional orientation, we used the theory of John Holland (Rogov, 2003, pp. 80-84), which allows us to determine the social orientation of the individual. John Holland identifies six personality types:

1. Realistic (R);
2. Investigative (I);
3. Social (S);
4. Conventional (C);
5. Enterprising (E);
6. Artistic (A).

4. RESULTS

We defined the universal structure of the model of developing a competitive specialist during the professional training of a student of any specialty, taking into account the specifics of students' professional training, which is embedded in the structural component of the universal model (Table 1).

Table following on the next page

Name of the component	Content of the component	Focus of the component
Target component	Justifies the central meaning of developing a competitive specialist based on social commitment and professional requirements, which also has certain personal qualities and abilities that allow him to compete in professional activities successfully.	Determined by the public and state demand based on the professional education standard of the country. Goal: development of a competitive university graduate
Methodological component	Discovers the main methodological approaches and principles of developing the competitiveness of university graduates.	Methodological approaches and principles
Content-related component	Reflects the organizational and pedagogical conditions for the development of a competitive specialist, relevant personal and professional qualities and abilities, as well as the competence and knowledge, skills, and abilities necessary for successful professional activity.	Professional course programs that form the key competencies of professional training and personal qualities of a competitive student
Activity-based procedural component	Explores the main stages of developing a competitive specialist, as well as methodologies, means, and forms implemented through a set of pedagogical conditions for the model of efficient development of a competitive specialist.	Organizational and pedagogical conditions of developing competitiveness
Performance-based assessment component	Reflects the criteria, indicators, and levels of developed competitiveness of the graduate student.	Determining levels of competitiveness

Table 1: Components of the universal model for developing a competitive student

Based on the data of the components for developing a competitive university student, it is possible to present the structure of a universal model (Fig. 1).

Figure 1: The structure of a universal model for developing a competitive university student

From L.N. Trubina's point of view, the "pedagogical model" performs the following functions:

- A perfect or working model for the management process;
- A model for comparing, contrasting, and determining the correctness of chosen forms, means and methods of management;
- Accessibility of the content, organization, and development of the learning and cognition process;
- Verification of the correctness and completeness of theoretical and practical creative knowledge and skills" (Tulkibayeva, Trubaychuk, 2003, p. 117).

It is essential to assess the degree of manifestation of the main components of competitiveness among students of different professional orientations to solve the second problem of the underdeveloped technology of determining the level of competitiveness of students. It is mostly because the general level of competitiveness does not reflect the specific nature of the development of necessary qualities of competitiveness of students of the arts, and the hard and social sciences. In our research, we assume that the qualities of competitiveness of university students and their professional orientation are interrelated. V.I. Andreev, Yu.A. Dmitrieva, A.Y. Kibanov, L.M. Mitina, D.V. Chernilevsky, and other researchers studied the concept of "student competitiveness" and defined its main components. The perspective of Valentin Ivanovich Andreyev, Doctor of Pedagogical Sciences and Professor of Kazan Federal University, on student competitiveness is the most appropriate for our study. Valentin Ivanovich defines a competitive personality as a person who is characterized by aspiration and ability to achieve high quality and efficiency of his activity, as well as the ability to assume leadership in an intensely competitive environment (Andreev, pp. 26-28). V.I. Andreev identifies the ten most important qualities for a competitive personality, which are of great importance for our research. These qualities are:

1) Ability to set clear objectives and value orientations (CO);
2) Diligence (D);
3) Creativity (C);
4) Ability to take risks (TR);
5) Independence (I);
6) Leadership (L);
7) Desire for continuous self-development (CS);
8) Stress resistance (SR);
9) Strive for continuous professional growth (PG);
10) Strive for a high-quality final product (FP) (Angelovsky, 2004).

The professional orientation types, their professional focus, preferences, and recommended careers are presented in Table 2.

Table following on the next page

Holland Type	Orientation, preferences	Examples of Occupations
Realistic type	Specific results, primary attention on the present, material objects, and their practical applications; activities requiring physical fitness, dexterity, lack of focus on social interaction.	Mechanic, electrician, engineer, farmer, livestock specialist, agronomist, gardener, car mechanic, driver, etc.
Investigative type	Ideas, theoretical values, intellectual labor, solving intellectual, creative tasks requiring abstract thinking, lack of focus on social interaction, communication is centered around the information.	Physicist, astronomer, botanist, programmer, etc.
Social type	People, communication, establishing contacts with others, desire to educate, avoiding intellectual problems.	Doctor, teacher, psychologist, etc.
Conventional type	Order, strictly planned activity, work according to instructions and algorithms; avoiding situations of uncertainty, social activity, and physical stress; assuming leadership.	Accountant, financial expert, economist, office employee, etc.
Enterprising type	Leadership, recognition, authority, personal status, avoidance of activities requiring diligence, intensive work, motor skills, and concentration; interest in economics and politics.	Businessman, marketing expert, manager, director, supervisor, journalist, reporter, diplomat, lawyer, politician, etc.
Artistic type	Feelings and emotions, self-expression, creative activities, avoiding activities requiring physical strength, fixed working hours, following rules, and traditions.	Musician, visual artist, photographer, actor, director, designer, etc.

Table 2: Characteristics of the professional orientation personality types

According to this model, personality types are characterized by specific features such as traits and mentality; they possess abilities for certain activities, have specific activity preferences, hobbies, professional opportunities. These personality types align with certain types of professions. If a prospective student chooses to pursue a career corresponding to his professional orientation type, he can achieve better results in his work, which means that he can increase his professional competitiveness. Based on the characteristics of the professional orientation types, we made the following hypothesis on the correlation between the qualities of competitiveness and the professional orientation types in Table 3.

Competitive quality code	Correlation rank coefficient rs					
	R	I	S	C	E	A
CO	+	+		+		
D	+		+	+		
C		+				+
TR					+	+
I					+	+
L			+		+	
CS		+	+			
SR			+		+	
PG	+		+			
FP	+	+			+	

Table 3: Hypothesis on the positive relationship between the qualities of competitiveness and the professional orientation types

To study the competitiveness of students, we used the method devised by V.I. Andreev (Andreev, 2004, p. 383). The theory of John Holland was applied to determine the professional orientation types among students (Rogov, 2003, p. 80 – 84). The research involved surveying 30 sophomore and junior students of the arts, and the hard and social sciences of Chelyabinsk State University (10 students from the Faculty of History and Philology, 10 from the Faculty of Psychology and Pedagogy, 10 from the Institute of Economics of Industry, Business and Administration). The Spearman rank correlation method was used to assess the correlation. Spearman rank correlation coefficient is calculated using the formula:

$$\rho = 1 - \frac{6 \cdot \sum d^2}{n(n^2 - 1)}$$

where n is the number of ranked characteristics (indicators, subjects); D is the difference between the ranks for two variables for each subject (Sidorenko, 2004, p. 213).

After a survey of competitiveness and professional orientation types, we placed the results (points) in Table 4.

Student	Competitiveness Points										Professional orientation types points					
	CO	D	C	TR	I	L	CS	SR	PG	FP	R	I	S	C	E	A
1	12	9	8	9	9	11	14	9	9	8	10	6	7	7	8	4
2	14	7	9	7	8	10	12	10	7	9	12	5	8	8	6	3
3	8	10	9	12	8	14	11	10	10	11	7	3	5	5	13	3
4	11	12	9	11	9	11	10	11	8	8	9	4	9	5	10	5
5	7	14	11	8	10	8	12	12	14	13	5	4	12	9	4	8
6	9	12	11	12	10	13	11	8	10	9	7	5	6	6	11	7
7	10	9	9	9	9	10	10	12	11	10	8	4	11	6	8	5
8	11	10	7	9	8	9	13	12	9	11	10	5	10	8	4	5
9	8	9	8	7	9	8	9	12	9	8	7	3	12	9	4	7
10	12	11	7	9	8	10	10	11	10	13	10	5	9	10	5	3
11	10	11	9	8	11	9	9	9	10	11	8	4	7	8	7	8
12	13	8	9	7	8	10	11	8	8	10	12	5	6	9	6	4
13	8	12	7	12	9	9	11	12	13	12	6	3	13	4	11	5
14	10	13	8	7	7	8	12	11	10	11	9	6	10	8	6	3
15	9	8	10	11	9	10	9	12	10	9	7	6	11	8	3	7
16	12	11	8	8	10	8	12	10	11	10	10	7	9	6	5	5
17	9	10	9	11	11	13	11	9	10	9	6	5	7	7	11	6
18	11	10	9	9	6	8	11	12	12	11	9	10	10	7	3	3
19	8	13	9	9	9	10	13	8	13	12	5	5	14	5	7	6
20	9	10	8	8	11	9	11	11	10	11	6	4	10	10	6	6
21	11	10	9	8	8	8	12	12	11	9	8	5	10	8	3	8
22	13	12	8	7	7	10	9	11	11	10	11	6	9	10	3	3
23	10	11	9	8	10	9	10	9	11	10	8	5	11	8	5	5
24	9	12	9	9	9	9	11	9	10	9	7	4	12	7	5	7
25	12	13	9	7	8	8	11	11	9	7	10	6	8	10	5	3
26	10	8	8	9	10	9	12	11	11	10	8	5	9	8	7	5
27	12	9	9	7	9	8	12	10	8	9	11	6	8	8	3	6
28	13	10	9	7	7	9	13	9	8	10	11	6	9	9	3	4
29	11	9	7	9	8	8	9	10	11	11	9	5	10	8	6	4
30	10	10	7	10	10	9	10	10	10	11	8	4	11	7	7	5

Table 4: Points for the "Competitiveness" and "Professional orientation type" methods

Having processed the data, we obtained the results represented in Table 5. The relationship is valid if rs empirical > rs 0.05, and even more so if rs empirical > rs 0.01.
At critical values for N = 30,
rs critical = 0.36 ($p < 0.05$),
rs critical = 0.47 ($p < 0.01$).

Competitive quality code	Correlation rank coefficient rs empirical					
	R	I	S	C	E	A
CO	0.963	0.637	-0.453	0.381	**-0.321**	-0.52
D	**-0.261**	**-0.008**	**0.246**	**-0.06**	**0.091**	**0.103**
C	**-0.112**	**0.163**	**-0.072**	**0.005**	**0.016**	0.421
TR	-0.477	**-0.256**	**0.11**	-0.616	0.599	**0.206**
I	-0.512	**-0.307**	**0.105**	**-0.162**	0.432	0.692
L	**-0.038**	**-0.111**	**-0.34**	**-0.265**	0.603	**-0.057**
CS	**0.177**	0.366	**-0.068**	-0.074	**-0.005**	**-0.01**
SR	**-0.077**	**-0.036**	0.472	**0.209**	**-0.311**	**0.055**
PG	-0.475	**-0.008**	0.542	**-0.185**	**0.059**	**0.219**
FP	**-0.202**	**-0.142**	**0.344**	**0.036**	**0.101**	**-0.069**

Table 5: Correlation of competitiveness qualities and professional orientation types

5. CONCLUSION

The results of the study partially confirmed our hypothesis. Moreover, the correlation of such competitive qualities as diligence and the desire for the high-quality final product has not been confirmed by any type of professional orientation of the individual. This could be due to a small sample of the study. These results allow us to speculate on the degree of manifestation of competitiveness traits in university students of different professional orientations. For example, the following competitive qualities are expressed:

1) Realistic type – clear objectives and value orientations;
2) Investigative type – clear objectives and value orientations, desire for continuous self-development;
3) Social type – stress resistance, desire for continuous professional growth;
4) Conventional type – clear objectives and value orientations;
5) Enterprising type – the ability to take risks, independence, leadership;
6) Artistic type – creativity, independence.

In some cases, there is a negative relationship: the conventional type exhibits a negative correlation in the ability to take risks. This study is not exhaustive and may be supplemented.

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RESULTS OF THE DEVELOPMENT OF THE METHODOLOGY FOR THE STUDY OF ECONOMIC ACTIVITY

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ABSTRACT

The paper represents the research results of the development and verifying of the questionnaire of economic activity. The theoretical approach to the study of economic activity is justified, the definition of economic activity from the point of view of economic psychology is given. The procedure of the development and statistical verification of the technique Economic Activity Questionnaire (Zabelina, Chestyunina, 2019) is described. The results confirm factor and convergent validity of three scales of the developed technique, reflecting cognitive, motivational-volitional and behavioral components of economic activity. Prospects of application of the technique in psycho-economic research are discussed.

Keywords: *Economic activity, Economic Activity Questionnaire, Economic mind, Economic behavior, Business activity, Methodology*

1. INTRODUCTION

At the present stage of the socio-economic development of the country, one of the primary tasks is to increase the economic activity rate of the population. This State policy priority is determined by the transitional nature of Russia's economy, in which the formation of market relations as well as the labor market is not yet complete. Therefore, the relevance of studying the economic activity of the population in Russia as a deliberate feature of the market economy is unquestionable. The need to study the economic activity of young people is due to several factors. First of all, the fact that young people make up about 35% of the working population of Russia (Zalyan and Pavlenko, 2016). Secondly, young men and women are the future of the country. The initial conditions of their career will play an important role in the subsequent development of the country. Nowadays, the young population largely determines the political, economic, and social structures of society. Thirdly, the young population all over the world is a particularly vulnerable group in the labor market. Despite all these factors, the study of the economic activity of the young population was not given enough attention to the psychological research area.

Despite the relevance of the studied phenomenon and the fact that the term "economic activity" has become traditional in the psychological research area (Zhuravlev and Kupreichenko, 2003), the term has no detailed psychological explanation. Individual attempts to define economic activity are scattered and contradictory. Needless to say, that the psycho-diagnostic method of this phenomenon is not sufficiently developed. This study is conducted to partially fill this gap. The study aims to develop a psychodiagnostic method aimed at identifying the parameters of economic activity, as well as empirical verification of its validity and reliability. To achieve the goal, the following tasks were solved consistently:

1. To conduct a theoretical analysis of approaches to understanding and studying the construct "economic activity";
2. To develop statements of the economic activity questionnaire;
3. To conduct an empirical study of the economic activity of the young population on a representative sample;
4. Check the factor validity of the validity technique using exploratory factor analysis (principal component method with Varimax rotation);
5. To study and check factor validity of questionnaire's scales using the confirmatory factor analysis;
6. To investigate the convergent validity of the method by analyzing the correlation with the scales of the Economic attitudes questionnaire (Deyneka and Zabelina, 2018).

2. THEORETICAL FOUNDATION

During the theoretical analysis of the construct of economic activity in various sciences, four approaches to the definition and interpretation of this phenomenon were identified. The first approach, the most common in economic statistics and sociology, treats the concept of economic activity as an indicator of the ratio of employed and unemployed people of working age in different segments of the population. Economic activity, in this case, characterizes the work (professional) behavior of a person and his involvement in the labor sphere. This approach allows us to analyze a large volume of data characterizing the labor market, employment, and unemployment rate, but focuses only on one type of economic behavior and does not allow to fully disclose the psychological essence of the phenomenon. This approach considers the level of economic activity of women in Russia (Kiseleva, 2005; Fedorchukova, 2015), as well as the economic activity of older age groups (Abelova, 2010; Burlaka, 2010; Korzina, 2004; Sivkova, 2015; Sonina, 2015). Examining economic activity in old age, the authors identify it with the willingness to exercise labor behavior (to continue to work) in later life. The second approach to the definition and study of economic activity is used in studies of the characteristics of labor behavior in organizations (the economic activity of employees) (Shashnov, 2003). Sometimes economic activity in this approach is identified with business activity, which in turn is also interpreted differently. In a broad sense, Bezrukova V.S. defines "business activity" as the moral and ethical quality of the individual, expressed as intensive activity in the field of profession and position. This quality is connected with the high responsibility of the person for the results of work, for the quality of all process of the activity. Thus, business activity is closely related to business awareness as the possession of information in the field of labor and professional field of activity. The author emphasizes that the success of the enterprise and the organization of the event mostly depends on the presence of people with business activity (Fundamentals of spiritual culture, 2000). Thus, in this approach, economic activity is also limited to only one type of economic behavior – work (or business). The third approach to understanding economic activity considers it as entrepreneurial activity and personal qualities necessary for its implementation. Indicative of this approach is the definition presented in the Dictionary of business terms (2001): economic activity is the organization and development of production or rendering of services, and also properties of the human person consisting of

enterprise, initiative, activity, mobility. That is, economic activity is considered as a necessary condition for the implementation of successful entrepreneurial activity, as well as this activity itself. In Western literature, works in which the concept of economic activity appears are rarely found. However, for the most part, they are limited to the study of entrepreneurial activity. In particular, the perception of economic activity in Eastern and Western European countries was studied (Veldscholte et al.,1998). As a criterion characterizing economic activity, the authors distinguish between professional activity (hired work) and private entrepreneurial activity. That is, economic activity is directly related to entrepreneurial activity or self-employment. The fourth approach to the study of economic activity is offered by psychologists. However, there is no single coherent concept of economic activity within this approach. A.L. Zhuravlev and A.B. Kupreychenko (2003) studied the moral and psychological regulation of economic activity, distinguish between business activity and economic activity. Without giving an explicit definition of economic activity, the authors designate its subjects - entrepreneurs, managers, employees, and organizations. In the same monograph there is a definition of business activity, given through the concept of behavior: "Business activity – economic behavior aimed at increasing income" (Zhuravlev, Kupreichenko, 2003, p. 88). In the study of conditions for the development of the economic activity of youth (Paramonova, 2017), economic activity is understood very broadly and is identified with such psychological phenomena as motivation to achieve, purposefulness, etc. There are attempts to identify the levels of economic activity, and the degree of its intensity is the main criterion (Vasilyeva, 2016). S.L. Vershinina, O.V. Viktorova and I.N. Vorobyova (2013) give their definition of socio-economic activity: "Socio-economic activity is the active attitude of a person to the life, in which he acts as an initiator in the social and economic spheres of life, striving for socially useful actions" (Vershinina et al., 2013, p. 26). In the composition of socio-economic activity, the authors distinguish labor activity. "Speaking about labor activity, it is necessary to take into account the degree of importance of the process for the individual and the results of labor. Activities aimed solely at making a profit will not indicate a person's interest in the labor process may be due to external circumstances and have no internal motivation" (Vershinina et al., 2013, p. 27). In this thesis, we can observe a certain contradiction with the understanding of the economic activity that A. L. Zhuravleva and A.B. Kupreychenko (2003) understand the desire of a person to increase their income as the main criterion of economic activity. N.A. Kurdyukova and T.V. Korostelova (Kurdyukova and Korostelova, 2015) give the following definition: economic activity is "one of the forms of activity realized situationally, reflecting the internal readiness of a person for action, launching a decision-making program with an external stimulus" (p. 218). Understanding economic activity as the internal program of the interaction of the person with society on a choice of ways of resource use, authors connect the concept of activity and efficiency in the use of resources (p. 209). As part of the study of the economic activity of young people, the authors identify 4 "action programs" concerning money spending. Furthermore, they see economic activity as a strategy to enhance personal potential: "the personality grows with those degrees of freedom which are connected with the extremely significant social and subject experience and a way of the actual representation of young people in a social matrix of a postmodern" (p. 212). One of the most elaborated concepts of economic activity in the framework of the fourth approach can be considered the definition of N.A. Rotmanova (2009). Understanding the activity after V.A. Petrovskiy (1992) and I.A. Dzhidaryan (1988) as the "combination of the individual moments of the movement, which ensure the establishment, implementation, development and modification activities", it defines economic activity as "a complex multi-component phenomenon, a measure of interaction of the subject with objects of economic reality; the intensity and quality of managing limited resources, the way of self-expression and self-realization of personality in life, embedded in economic relations of production, exchange, and distribution, but also savings and

consumption" (Rotmanova, 2009, 2011). This definition has a certain degree of broad meaning, covering various types of economic behavior and activities. N.A. Rotmanova points out two basic vectors (kinds) of economic activity: "consumption activity" (using available resources for one's one-time benefit) and "investment activity" (using available resources to maximize long-term economic benefits). The researcher proposes to use the concept of individual styles of economic activity as a combination of the distribution of various resources available for a person (money, time, intellectual potential, experience and skills, physical and psychological efforts). Rotmanova similarly separates the objective and subjective efficiency of economic activity. Objective efficiency in this interpretation is the level of income measured in monetary terms of one invested ruble. Subjective efficiency is the feeling of satisfaction from the economic results of one's activity (Rotmanova, 2009). The analysis of the above approaches allowed us to formulate our definition of economic activity. Economic activity is a quality of the subject, manifested in the level of intensity and initiative in the interaction of the individual with the objects of economic reality (as a consumer, entrepreneur, employee, borrower, investor, etc.). In the structure of economic activity, we can distinguish cognitive component (activity in the search for new information to make decisions in the economic sphere), motivational-volitional (confidence in their ability to manage the economic situation, the international locus of control in the economy) and behavioral component (exercise initiative in everyday economic behavior). The main psychological function of economic activity is that it allows a person to resolve contradictions in the economic sphere that arise in his way.

3. DEVELOPMENT OF QUESTIONNAIRE STATEMENTS

Depending on our definition of economic activity, we assumed that the mandatory manifestations of activity in economic behavior will be associated with the initiation of behavior aimed at finding the necessary information in this area for decision-making. In other words, one of the indicators of human activity in the economic sphere is his "indifference", interest and purposeful activity on self-initiated (occurring at his inner desire) search for information in this area (about what is happening in the market of goods, services, companies, and their shares, price changes, etc.). This construct reflects the cognitive component of economic activity, "activity in the search for information in the economic sphere", and is expressed in six statements and represents the first scale of the questionnaire. The activity of a person occurs at the level of consciousness from the belief that he can influence the surrounding reality by transforming it, that is, to be the subject of economic activity (Vyatkin, 2002, 2005). According to this statement, the second scale of the questionnaire was proposed. It reflects the construct of "international locus of control in the economic sphere" or the motivational-volitional component of economic activity. People who are convinced that they can influence the situation, change it to suit their own economic needs, are more likely to be active in this area – to enter into negotiations, organize meetings, invest or save money, start their own business, etc. Thus, we believe that the international economic locus of control is one of the indicators of economic activity, acting as its motivational-volitional component. Since we started from the position that economic activity (activity in the sphere of economy) is one of the types of human activity, and human, in turn, is a complete self-organized system, it would be logical to assume that a person with a high degree of general activity is likely to manifest it in various spheres of economic life (as a consumer of goods and services, as a borrower, investor, employee, etc.). That is why it was necessary to include a scale reflecting the behavioral component of economic activity in the questionnaire. We can identify the business activity as a separate type (level) of economic activity (Zhuravlev and Pozdnyakov, 1995; Zhuravlev and Kupreychenko, 2003), which manifests in the entrepreneurial activity engagement of a person. However, statements related to business activities did not gain the necessary weight, so they were not included in a separate factor and were excluded from the

final version of the questionnaire. At the stage of development of the questionnaire, 25 statements were formulated, which should express the degree of agreement (disagreement) on the 7-point Likert scale (where "7" means “completely agree” and "1" - "absolutely disagree"). After the pilot phase of the study and the factorization of the data, some of the statements that were not reflecting in the factor structure of the data were removed. The final version of the questionnaire contains 12 statements, which are evenly distributed in three factors. To verify the reliability and validity of the "Economic activity questionnaire", a study was carried out, in which 489 people participated – full-time and part-time students on bachelor's programs (faculties of psychology, pedagogy, management, linguistics, mathematics) aged 18 to 26 years, 36% of them are young men. 43% of students have experience of being hired for work. Respondents were presented with a printed form, which was required to be filled out. The behavior of respondents, clarifying questions they asked, the time of filling (the average time of filling the questionnaire – 4 minutes) was recorded.

4. RESULTS

Our next step was to conduct a test of the reliability and validity of the questionnaire. The statistical package SPSS 24.0 was used in the processing of the obtained data. To substantiate the factor validity, exploratory factor analysis was performed by the method of principal components with Varimax rotation. The results of the factorization are given in Table 1.

	Statements	Factor analysis		
		1	2	3
EA7	When something changes in the economic life of the country, I would like to be one of the first to know about it	**0.804**	0.087	0.132
EA5	I try to stay informed about the national and international events of economic and financial life	**0.803**	0.082	0.180
EA13	I like to analyze the situation in the market - to know what is happening in different companies	**0.775**	0.004	0.148
EA11	I will never miss the opportunity to discuss the economic news with my friends	**0.755**	-0.043	0.173
EA1	I am eager to improve my knowledge in the field of economics.	**0.667**	0.136	0.203
EA9	I believe that any person is obliged to monitor national and international economic events	**0.662**	0.189	0.069
EA3	I do not care much about the economic life of the country and the world	-0.354	-0.042	0.014
EA6	I am sure that the level of income is dependent entirely on the activity of the person	0.055	**0.879**	0.170
EA4	I believe that success in financial matters is directly related to the activity of a person	0.060	**0.804**	0.138
EA8	I think that financial success comes only to active people	0.155	**0.671**	0.278
EA10	There is an opinion about me that I am a person who does not sit around.	0.129	0.174	**0.731**
EA12	I am considered as an active person who can change the situation	0.112	0,130	**0.730**
EA2	I like to bring something new to my activities	0.172	0.230	**0.475**
The proportion of explained variance, %		27.38	15.70	12.04

Table 1: Factor structure of the economic activity questionnaire

Exploratory factor analysis of the questionnaire statements by the maximum likelihood method with Varimax rotation allowed us to identify 3 factors that together explain 55.12 % of the total variance. The only statement that is not included in any factor with a weight of more than 0.4, "I do not care much about the economic life of the country and the world" (EA3). Perhaps this result is since the statement differs from the other statements of the questionnaire in the negative formulation and is associated with social desirability. The first factor, called "Activity in the search for economic information", included 6 statements reflecting the degree of human activity in the collection of economic news, the degree of interest in events occurring in the economic sphere, as well as the desire to obtain new information in this area through reading literature and talking with experts. It can be concluded that this factor reflects the cognitive component of economic activity. The second factor is "Internal economic locus of control". It brought together three statements with the highest weights. This factor reflects the respondents' belief in a direct link between personal activity and financial success, the person's confidence that he can influence his financial situation, that is, the motivational and volitional component of economic activity. The third-factor "Activity in behavior" demonstrates the willingness (or unwillingness) of respondents to change behavior in response to external challenges, to be active (as opposed to passivity), that is, reflects the behavioral component of economic activity. This factor combined 3 statements with sufficiently high loads. Thus, the empirical structure of the questionnaire confirmed the theoretical construct. At the next stage, we carried out a confirmatory factor analysis using the IBM SPSS AMOS 22 structural equation modeling program which helped us to verify and correct the factor validity of the method scales (Byrne, 2010). The use of CFA allows obtaining answers to three questions, which play a fundamental role in the development of a multi-scale questionnaire. 1. Is it true that each item of the questionnaire is statistically significant with this scale? 2. Is it true that the relationship of each item to other scales to which this item does not apply is negligibly small (equal to zero)? 3. Does the variance of each factor (scale) differ statistically reliably from zero (otherwise it is a fictitious scale, with zero discrimination) (Nasledov, 2013, Nasledov, Kiselyova, 2016). The final (a posteriori) model consists of three factors (Fig.1) and is well-matched to the original data on the indices of consent: CMIN = 110.522; df = 41; p = 0.000; GFI = 0.965; CFI = 0.975; RMSEA = 0.059. All estimated parameters of the model are statistically reliable: regression coefficients ($p < 0.001$), variance of latent variables (scales) ($p < 0.001$) and covariances (correlations) between errors ($p < 0.01$). The correlations between the scales: 2 and 3 ($p < 0.001$), 3 and 1 ($p < 0.001$), 1 and 2 ($p < 0.001$) are statistically significant. Our next step was to check the reliability of the scales by the internal consistency of the points included in them using the Cronbach alpha method, with the calculation of the total alpha index for each scale. Cronbach alpha values for the scale "Activity in search of economic knowledge" (0.893), the scale "Subjective economic locus of control" (0.850) and for the scale "Activity in behavior" (0.717). Overall, for the final index of the questionnaire, the Cronbach alpha value was 0.827. Thus, the questionnaire shows an acceptable level of reliability. To verify the convergent validity of the method on the part of the sample (339 people), we applied a correlation analysis with the scales of the Economic Attitudes Questionnaire (Deineka and Zabelina, 2018) and Furnham's questionnaire "Money Beliefs and Behavior Scale" (Furnham, 1984) in the adaptation of O.S. Deyneka (Deyneka, 1999), as well as with the scale of subjective income (Deineka, 1999). The results of the correlation analysis show positive correlations at a high level of significance of the integral indicator of economic activity and subjectively estimated personal income ($r=0.379$, $p <0.001$). The higher the level of economic activity of students, the more highly they estimate their income level. This relationship seems logical to interpret because systematic activity to increase income level gives positive results. The economic activity measured by the developed tool is positively correlated with almost all diagnosed economic attitudes: satisfaction in the sphere of consumption ($R=0.220$, $p < 0.001$), tandency

to saving (R=0.207, p < 0.001), confidence in the future due to savings (R=0.271, p < 0.001), financial literacy (R=0.259, p < 0.001), consumer proactivity (R=0.221, p < 0.001), willingness to invest (R=0.217, p < 0.001), activity and rationality in the banking sector (R=0.154, p = 0.004), cognitive economic activity (R=0.477, p < 0.001), financial optimism (R=0.408, p < 0.001), social responsibility of wealth (R=0.229, p < 0.001) and negative correlation with the parameter of the investment illiteracy (R=-0.200, p < 0.001). The results suggest that economic activity is manifested in various spheres of economic life and economic behavior (financial, consumer). Furthermore, economic activity is stimulated by the desire to improve financial literacy, create savings for the future and the willingness to distribute income fairly, share their income with others. Also, the integral indicator of economic activity recorded a correlation with some aspects of the attitude to money. For example, there is a positive relationship between economic activity and the measure of agreement with the following statements: "I think that person's income depends on his/her abilities and efforts" (R=0.374, p < 0.001), "I carefully examine the design of banknotes and coins" (R=0.288, p < 0.001), "I am proud of my ability to save money" (5) (R=0.158, p < 0.0321), "I always know how much I have saved" (R=0.171, p = 0.020), "My financial situation is better than most of my friends think" (R=0.257, p < 0.001), "I often use money to influence rivals or enemies" (R=0.278, p < 0.001), "I usually feel better than those people who have less money" (R=0.161, p = 0.030), "I keep records of my expenses and income" (R=0.201, p = 0.006), "I try to bring the price down when shopping if there is such an opportunity" (R=0.231, p = 0.003), "I always know exactly how much money I have with me" (R=0.217, p = 0.003), "I think about money more often than others" (R=0.155, p = 0.039). The results of correlation analysis show that economic activity is associated with increased interest and attention to money, a conscious and rational attitude to them, as well as the desire to accumulate and financial satisfaction. On the next step, we calculated descriptive statistics (minimum, maximum, average, standard deviation) separately on samples of young men and women. The data is given in Table 2.

Scales of the economic activity questionnaire	Male				Female			
	Min.	Max.	Avg.	SD.	Min.	Max.	Avg.	SD.
Cognitive component	1.00	6.83	4.30	1.40	1.00	6.67	3.22	1.30
Motivational-volitional component	1.33	7.00	5.18	1.35	1.00	7.00	5.06	1.41
Behavioral component	2.00	7.00	4.60	1.18	1.00	7.00	4.36	1.31
The outcome indicator of economic activity	3.08	6.58	4.70	0,77	1.54	6.46	3.97	0.959

Table 2: Descriptive statistics

5. CONCLUSION

The analysis of the obtained data allows us to conclude sufficient constructive and convergent validity, as well as about the reliability (internal consistency) of the developed economic activity questionnaire. The understanding of economic activity as a level of intensity and initiative in the interaction of the individual with the objects of economic reality, including cognitive motivational-volitional and behavioral components, was empirically confirmed. The application of this method opens up opportunities for the rapid diagnosis of the economic activity of youth. The main advantage of the developed tool is its compactness, ease of filling and data processing, which makes it possible to use it in large-scale studies. The next stage of our work with the questionnaire will be further validation procedures with the expansion of the sample of subjects, including representatives of different groups of the population (entrepreneurs, civil servants, workers, employees of commercial enterprises and state organizations, unemployed people, pensioners, etc.).

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A SIMPLE MODEL OF WIND ENERGY PLANT OUTPUT

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ABSTRACT
Strategic planning, development, and operation of renewables-based msart grid require accurate modelling of grid components in regard to prediction of power or energy output in relation to renewable resources. Here we contribute to the subject with development and validation of methodology for a wind energy plant output prediction model development based on experimental observations of renewables (wind parameters) and deployment of machine elarning techniques. Model development methodology does not require component-based models. We developed successfully a model that encompass more than 90% of original variability of data from wind power plant observations in northern Spain. The model is intended to be expanded and deployed as a component in the over-all renewables-based smart grid operation model for remote and isolated communities.
Keywords: *Renewable, Prediction model, Wind power, Smart grid, Machine learning, Remote community*

1. INTRODUCTION

Research in introduction and deployment of renewable power systems gains importance after raising concerns of the climate change impact on environment and sustainable development of the modern civilisation. Further to this, natural effects to power generation and distribution facilities, such as those space weather-related, and challenges of power generation and distribution to closed communities, such as those in remote ocean islands, require the introduction of new power generation and distribution concepts, such as those aggregated under the term smart grid. Strategy, planning, construction and operations of renewable energy-based smart grids require systematic approach in understanding and modelling the processes encompasses in such novel structures (Acevedo, 2018). Understanding the relation between the power generation, as the outcome, and availability of natural renewables, as predictors, emerges essential for designing the robust and reliable smart grid of renewable energy for closed, isolated communities (Žigman, Meštrović, and Tomiša, 2018).

Here we provide an experimental data-and machine learning-based outlook into the process of power generation at a wind-power facility, therefore contributing to understanding of the underlying processes revealed with a machine learning production model.

2. WIND ENERGY PLANT OUTPUT PREDICTION MODEL

Smart grid for an isolated community requires self-sufficiency reached by sources of renewable power (Acevedo, 2018). Good understanding of the processes behind the self-sufficiency may be embedded in the over-all smart grid operation system for isolated communities, allowing for accurate prediction of its power and energy supply budgets based on the available renewable resources (Vakilabadi *et al*, 2019). In traditional development approach, prediction models are burdened with the complexity of the underlying processes, which are complex, and particularly hard to be described with simple analytical models. Our contribution with the study presented here addresses the problem of wind power facility output prediction using power generation predictors, without the need to recognise and analyse the constituents of a plant (Žigman, Meštrović, and Tomiša, 2018). Our approach presented in this manuscript relies on encompassing the internal variability caused by particular equipment engaged with the methods of statistical learning. Statistical learning methods are developed in bespoke manner to encounter and absorb as much as possible of the variance caused by complex systems through the supervised learning process. Approaching the problem in that manner, we were able to develop an accurate and reliable prediction model without the need for the internal architecture analysis and analytical modelling.

2.1. Data

We examined data from the Sotavento wind plant database (historical data available at: http://www.sotaventogalicia.com/en/real-time-data/historical), taken between 1st July, 2019 at 00:00 GMT and 31st July, 2019, 24:00 GMT, in 10 min intervals. Sotavento plant is situated at (43,354377°N, 7,881213°W) close to Santiago de Compostela, Galicia, Spain. Records consists of the variables, as follows: (i) time of recording in GMT , (ii) wind speed in [m/s], (iii) wind direction in [° from geographic North direction], and (iv) produced energy in [kWh]. We took a pragmatic and logical approach in presumption the generated energy as the output (response), and wind speed (wsp) and wind direction (wdr) as inputs (predictors) of the prediction model. Initial exploratory analysis of the data set in consideration reveals the insight needed for a suitable model predictive model development methodology. Scatter plots of the candidate predictors vs the response (Figure 1) reveal potential relation between the generated energy and wind speed (Figure 1 right), but with a large variance contained in data. This suggested dropping linear regression as a potential model development method candidate.

Figure following on the next page

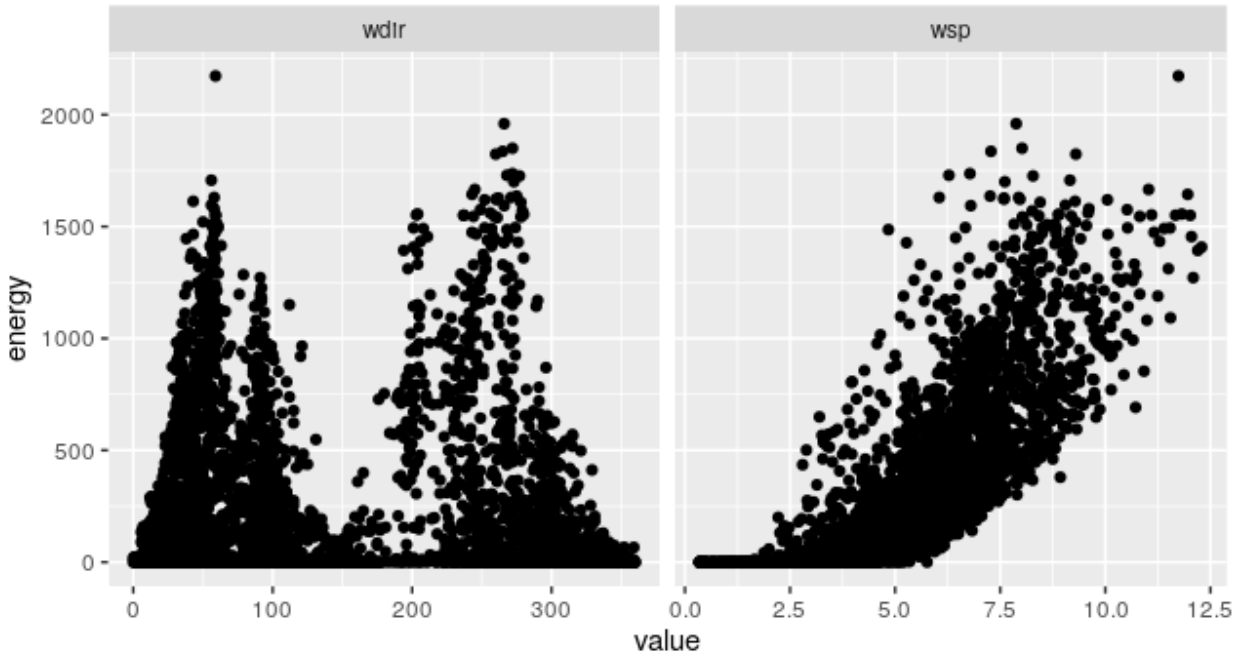

Figure 1: Scatter plots of generated energy vs wind direction (left) and scatter plot vs wind speed (right)

Correlation diagram (Figure 2) examination reveals potentially usufeul linear correlation (relationship) between the generated energy and wind speed, and a lack of linear association between the generated energy and wind direction. Still, we decided to keep the wind direction parameter in the process of the prediction model development to account for potential variations caused by wind direction. Finally, we examined the equivalence of variances using the two-sample F-test. The F-test reveals the variances of the generated energy and wind speed, respectively, are equal ($p = 1$), while those of the generated energy and wind direction are not ($p < 2.2E\text{-}16$).In preparation of the prediction model development, the original data set was split into training (80%) and test (20%) sub-sets, respectively, using randomised selection of observations. We did not use any data preparation in this research.

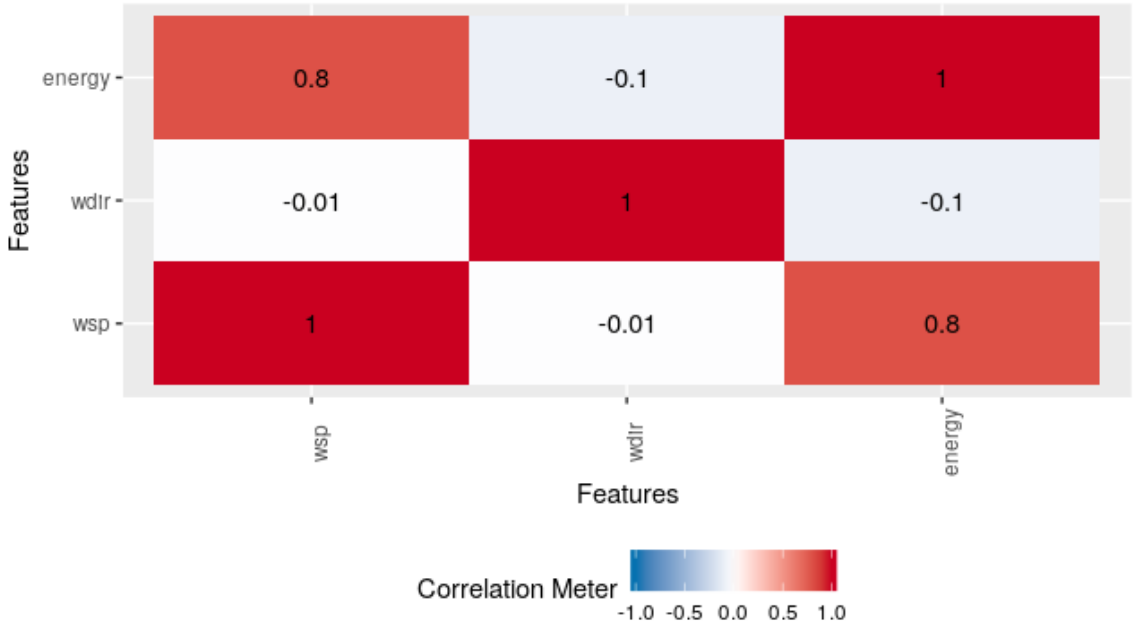

Figure 2: Correlation diagram of predictors and response

2.2. Model development

Results of exploratory data analysis and the presumed complexity of the chain in observation led to examination of a number of model development approaches (Gonzalez-Apparicio *et al*, 2017). Linear regression performed poorly, as expected. Tree-based models offered far more promising results, leading us to selection of Random Forest model development approach. Random Forest is developed as an ensemble of Decision Tree models, each of them built on a different sub-set of original training data set (Efron, and Hastie, 2016). Every new case to be resolved is then offered to every Decision Tree model, and decisions are being collected. The response of the Random Forest model is then equal to the average of the individual Decision Tree models responses. We deployed the Random Forest method with 500 Decision Trees in the open-source framework for statistical computing R (R-project team, 2019), after analysing methodology presented in (Efron, and Hastie, 2016). Additionally, we examined deployment of Random Forest prediction model development using R environment for statistical computing in another discipline, as presented in (Filić, and Filjar, 2018). Utilisation of machine learning model development methods encompasses variation caused by complexity of a system (smart grid, or a plant, or a smart grid component), without the need for identification of the plant architecture and analytical component modelling.

2.3. Model validation

A common practice of prediction model validation requires utilisation of the independent (test) set for examination of prediction model performance. In this research, we used the Prediction vs Observed (P-O) diagram, and the adjusted R2 parameter, as a measure of coverage of the original data variance.

2.4. Results

We developed a dedicated R script in the R environment for statistical computing in which we deployed the development methodology for the wind energy plant output predictive model, as selected in Section 2.2. Random selection of observations for training and testing sets caused variability in performance of different prediction models. In due course, we applied the 10-fold cross-validation resampling method (Efron, and Hastie, 2016) to stabilise and optimise the prediction model performance. The prediction model of wind energy plant outcome based on the Random Forest machine learning method performs well. It covers more than 90% of the original variance held in data (adjR2 = 0.9055016). Additionally, its P-O diagram (Figure 3) shows strong linear trend, with only several outliers.

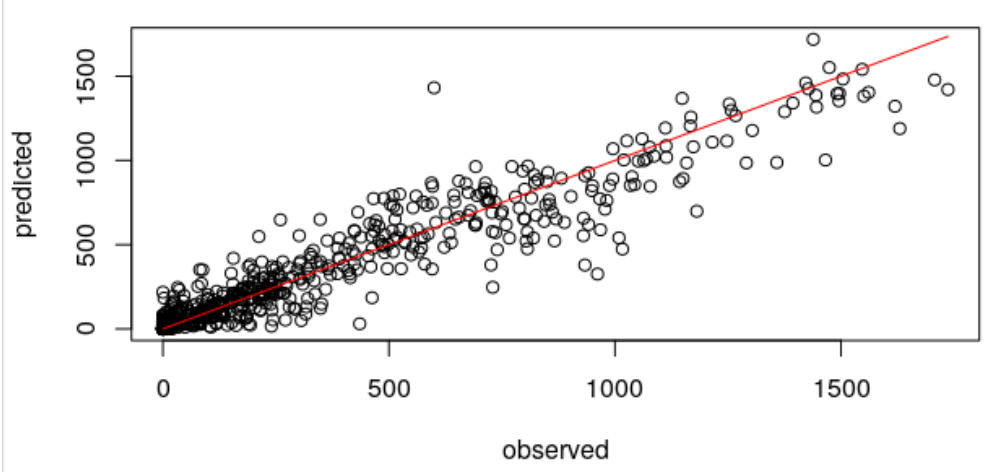

Figure 3: Predicted vs Observed (P-O) diagram of the Random Forest wind energy plant output predictive model

3. CONCLUSION

As a contribution to understanding of processes related to operation of a renewables-based smart grid for remote communities, we examined the case of modelling a wind energy plant output based on historical experimental observations, and the machine learning approach. We demonstrated a successful development of the Random Forest wind energy plant output prediction based on machine learning without requirements for understanding or modelling the plant internal structure. Our model is based on a month-long observations, and returns successful coverage of more than 90% of original variance. Our research will continue with the wind energy plant output prediction model development that will grow on the whole year data set, distilling the patterns and knowledge using machine learning techniques. The predictive model is to become a component of a larger model of renewables-based smart grid operation for remote and isolated communities.

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INFLUENCE OF FAMILY SOCIAL-ECONOMIC FACTORS ON THE DEVELOPMENT OF HIGHER MENTAL FUNCTIONS OF PRESCHOOLERS

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ABSTRACT

In the article the results of empirical research on the distinctive features of higher mental functions of preschoolers are considered, depending on such social-economic factors of a family as parents' education and income. The specific impact of the father's and mother's education is discussed. A recent neuropsychological study of 180 children showed that the most significant social-economic factor in the family, determining the formation of higher mental functions of preschoolers, is income. The higher psychological functions of children are successful in the families whose income level is high. Such functions are most vulnerable to unfavourable economic conditions and also conditions of processing heard and spoken information and analytical components of visual identity. The article provides the analysis, which demonstrates that for preschoolers raised by a mother and a father with different educational levels, the facts differ according to characteristics of the functions with lengthy time of formation, indirectly the anterior and left-hemispheres of the brain. On the whole the effect of the mother's educational attainment on daughters and sons is more powerful than the father's. The results show that the main differences in the characteristics of higher mental processes of children raised by a mother and a father with different educational levels are shown by the children of the same sex as the parent. For daughters raised by a mother with different educational level the state of higher mental processes have an essential difference on their indicators as a whole. For sons, the status of their fathers is important for the development of processes of programming and control, the serial organization of speech and motion. It is significant for transforming information. Such processes are formed the most satisfactorily where the father has a higher education and the least – where father has only a general secondary education. There are different views on the mechanisms and the reasons for cognitive distinctions of the children from the families with different social-economic status. Despite the diversity of views in this sphere, there is a main opinion, found with the help of the empirical approach; the lower the financial and educational level of the parents, the less successful the development of the children. The children, therefore, who are being raised by families with a low financial and low educational level, are in a risk group.

Keywords: *higher mental functions, family, social- economic status, preschoolers*

1. INTRODUCTION

The problem of the influence of the family social-economic status on the children's education is being actively studied in economic and social sciences, where it is also given a political meaning as generating inequality of opportunities in children's development. The results of the analysis of the data collected in various studies demonstrate that the quality of development conditions in an early childhood allows us to accurately predict the future performance of employees (Chetty et al., 2011; Borghans et al., 2008; Duckworth and Gross, 2014). An early childhood experience has a powerful impact on the development of spiritual and moral,

intellectual and personal abilities, which are prerequisites for the high economic efficiency of an adult. Economist Heckman's works are considered to be one of the recognized contributions for the development and popularization of the topic of an early child development over the past decade. Heckman's main thesis says: investing in an early childhood is much more effective than all subsequent programs for later life (Heckman, 2012). The most reliable and successful public strategy to improve the quality of the population, including labor, in any country will be improving the quality of the life of the children living in adverse conditions - the earlier these investments are made in the childhood, the more effective their financial and social return in 30—40 years will be (Knudsen et al., 2006). This means that the primary task of a modern society is to consider such an approach to teaching and raising children that maximally takes into account the individual psychological characteristics of the child. Numerous studies of the relationship of the morphofunctional state of the children with the influence of various factors, conducted both in our country and abroad, convincingly show the significant contribution of social factors to the process of lifetime morphological and functional brain maturation (Noble, Norman, Farah, 2005). Taking into account the fact that the surrounding social environment of an early childhood is, first of all, the family, it is necessary to know which family factors are of paramount importance in the functional development of the child and what nature of their impact on cognitive development is. At the same time, the literature notes that the influence of various variables of the family environment can be either favorable or, on the contrary, not conducive to the development (Lipina and Posner, 2012), which is due to the presence of many different characteristics of the family environment: wealth, education, parents' occupation, housing conditions, food. The combination of these differences creates unequal conditions for raising children. Based on the foregoing, the aim of the study was to identify the influence of social-economic factors of the family, such as wealth and parents' education, on the development of higher mental functions preschoolers.

2. MECHANISMS AND REGULATIONS OF THE IMPACT OF THE FAMILY SOCIAL-ECONOMIC FACTORS ON THE CHILD'S DEVELOPMENT

For a long time the main attention of the researchers has been focused on the development of intelligence. What are the mechanisms of the relationship between social-economic status and the child's mental development slowdown? The American Psychological Association, led by S. C. Saegert in 2006, presented a report in which social-economic factors are considered as «fundamental determinants of mental development, well-being and mental and psychological health throughout a person's life» (Saegert, 2006). Considering the problems associated with the social-economic status of the family, you can find two opposing strategies for studying it in foreign studies. The first approach refers a social-economic status to a set of several interrelated factors combined in a common index (education, parents' occupation, financial well-being) (Ensminger, Fothergill, 2010). In the second approach, scientists insist on considering the problem of the unequal effect of various social-economic parameters on the child's development and suggest analyzing the factors related to the social class (income, parents' education, etc.) as separate variables (Graetz et al., 1995). Many scientists consider the level of family income as the most important aspect of social-economic status (Korupp et al.,2002). Another research strategy is presented by the authors who insist that the parents' educational level is a more reliable predictor of the child's intelligence than a family income (Björklund, Salvanes, 2011). However, with all the variety of the points of view there is already a common opinion in this field of research - the lower the level of parents' income and education is, the less successful the child's development is. The representatives of the social sciences find a relationship between these two variables (income and education), but this relationship is not strictly determined. Thus, for example, a higher level of education is associated with more favorable economic opportunities, including through a higher income, more extensive social

and psychological resources (higher social support, higher control level) (Davis-Kean, 2005). At the same time**,** there are known examples of educated, but relatively low-earning people, there are also reverse examples - uneducated people who have achieved financial well-being. Consequently, different indicators of social-economic status are not interchangeable, therefore, there is a need to measure the individual components of social-economic status and separately assess the contribution of each of them - this approach gives a more detailed picture of the social status of a particular individual. A number of research papers consider unequal access to material and cultural resources stimulating children's cognitive development as the main mechanism of influence of the family social-economic status (Korupp et al., 2002). For example, families with a low status are characterized by a lack of books and educational toys, they have less opportunity to spend and organize various leisure activities (visiting a theater, a museum, libraries, exhibitions, traveling), and getting additional education. Among other things in such families due to financial difficulties, there is a lack of living conditions, a lack of facilities for recreation and study, poor quality of nutrition associated with a shortage of minerals and vitamins. There are the studies that prove that the family financial instability leads to an emotional stress, less sensitivity to the child's needs and to a lower quality of parents' behavior. As it turned out, in the early childhood parental practices have the greatest impact on IQ, and subsequently the effects of the mother's IQ and the social-economic status of the family come to the fore (Tong et al., 2007). An extreme case of inadequate parental practices such as neglect and child abuse is much more common in poor families than in the families with medium and high social-economic status. It is well known that maternal education is the strongest predictor of a child's school success (Haveman,Wolfe, 1995). This relationship is due to both the mother's level of education and her level of cognitive development. The research of the role of parental education in the development of children's cognitive skills confirms that an increase in the mother's educational level improves children's counting and reading skills (Carneiro et al., 2007). Researchers give an important role to the degree of saturation of the child's language environment. Children's good speech development is believed to be determined, first of all, by the high verbal intellectual development of their parents. In the study of (Noble et al., 2005), in which 168 first-graders participated, the research of the relationship between social-economic status and phonological (sound) words' analysis showed that poorly formed sound analysis is subject to the negative impact of a low status resulting in a low reading technique. A number of studies indicate the influence of social-economic status not only on cognitive development, but also on the brain function (brain activation) when performing cognitive tasks. The studies on the accomplishments of parents and their children suggest that early childhood caring experiences can contribute to the physical and psychological vulnerability (Lipina, Posner, 2012). Therefore, social distress in childhood can be considered as the first sign of an unfavorable stress history. Chronic stress caused by a social and financial status has a modifying effect on neuroendocrine and vegetative functions, as a result of which the risk of health disorders, functional condition and development changes. The main mechanisms of the neuroendocrine response, the sympatho-adrenal and hypothalamic-pituitary systems coordinate many metabolic and physiological changes. The rapid release of adrenaline from the brain of the adrenal glands and norepinephrine from the sympathetic synapses can activate cognitive functions, increase the sensitivity of sensory systems, bronchodilation, raise blood pressure, and increase the concentration of nutrients in the blood and energy metabolism (Brady-Smith et al., 2002). Thus, the parents' low educational level can indirectly affect the functional maturation of the child's body. The obtained results indicate the presence of a pronounced effect of a social-economic status on the children's development. At the same time the children from the families with a higher status have more opportunities for compensation in a developing environment. There are similar differences of the children with different social-economic status not only at the behavioral but also at the brain level manifesting both in the

brain activation difference and in the anatomical formation of individual brain regions. Consequently it is not the very low social-economic status that has a negative impact on the child's developing body but the surrounding it circumstances.

3. ORGANIZATION AND RESEARCH METHODS

Traditional neuropsychological tests developed by A. R. Luria were used in the study and were adapted in the laboratory of neuropsychology of the psychology department of Moscow State University named after M.V. Lomonosov (Akhutina et al., 2012). Statistical data processing was performed using descriptive statistics, one-factor analysis of variance ANOVA, and posterior criteria, regression analysis. Data processing was carried out using the software package IBM SPSS Statistics 20. The study involved 6-7 year-old preschoolers. A total of 180 preschoolers were examined. The distribution of children into groups was carried out through a strategy of stratometric modeling of the sample - using a specially designed questionnaire. The strata were: 1. mother's education - general secondary, secondary special (vocational), higher; 2. father's education - general secondary, secondary special (vocational), higher; family financial level - a high income (more than two living wages per a family member), an average income (one to two living wages per a family member), a low income (less than one living wage per a family member). All the children lived in a complete family, where they were the only ones or had one or less than two siblings. The ratio of boys and girls corresponds to 50% and 50%. The analysis of the stratification of the family financial level, the mothers' and fathers' educational status showed that: 84 children are brought up by the mother having a higher education; 65 mothers have a secondary special (vocational) education; 31 mothers have a secondary education; 57 children are raised by a father having a higher education; 76 fathers have a secondary special (vocational) education; 47 fathers have a secondary education; 46 children are from high-income families; 64 children are from middle-income families; 70 children are from low-income families. Neuropsychological diagnostics was carried out individually with each subject. The examination lasted from 50 to 75 minutes. During processing quantitative characteristics of the performance of individual neuropsychological samples were examined. We also used the method of relative total indicators calculating, combining predominantly one-factor performance parameters for various tasks. Such indices make it possible to analyze higher mental functions based on a generalized and enlarged approach based on the model of three functional brain blocks of A.R. Luria (1963) taking into account the interhemispheric asymmetry. Three such aggregated indicators are discussed in the article. The state of the functions of programming, regulation, control and serial organization of movements and speech is expressed by the value of the index III of the brain block. To evaluate the functions of the block II which is functionally lateralized, two indicators were taken: the information processing index according to the left hemisphere type and the information processing index according to the right hemisphere type. The brain block index III includes the grades for performing tests on the selection reaction, reciprocal and graphomotor coordination, dynamic praxis, rhythms according to the instructions, syllabic word structure, retelling of the text (criteria of semantic adequacy, programming and grammatical structure of the statement). The information processing index for the left hemisphere type consists of evaluations of praxis of the right hand finger pose, oral praxis, lexical structure of the text, and understanding of the logical and grammatical structure, the volume of short-term and long-term auditory-speech memory. The cerebral hemisphere type information processing index is the normalized sum of praxis indexes of the left hand fingers poses, table copy ratings, recognition of under-qualified images, and the volume of involuntary auditory and visual-spatial memory. The ratio of these indicators allows you to get a neuropsychological profile that reflects the state of higher mental functions.

4. RESEARCH RESULTS

The results of our study made it possible to state differences in the state of higher mental functions between the groups of preschoolers brought up in the families with different levels of parental education. In addition, we found that the influence of the parents' educational level has specific features and depending on the children's gender. Besides, our data indicate that the family financial situation is an important factor affecting the level of formation of all the higher mental functions of preschoolers. In particular, as the results of one-factor analysis of variance show, the level of formation of the functions of the brain block III depends on both parents' level of education (table 1).

Table 1: Group-average indices of function indices of brain block III

Indicators based on father's or mother's educational level	Educational level *						Level of differences			ANOVA	
	1		2		3						
	Mean	off average std	Mean	off average std	Mean	off average std	1-2	1-3	2-3	Sig	F
Indices of the functions of the brain block III (mother's education)	0,19	0,11	0,03	0,11	-0,45	0,16		0,002*	0,05*	0,007	5,13
Indices of the functions of the brain block III (father's education)	2,59	0,12	2,36	0,13	1,71	0,17		0,000**	0,007*	0,001	7,21

** Note –1 – higher education, 2– special secondary, 3 – general secondary*

Both mother's and father's high educational status has a positive effect on the development of the functions of the brain block III, and, on the contrary, the preschoolers raised by less educated parents experience a functional deficit both in the serial organization of movements and speech and in the programming and control of arbitrary forms of activity (figure 1).

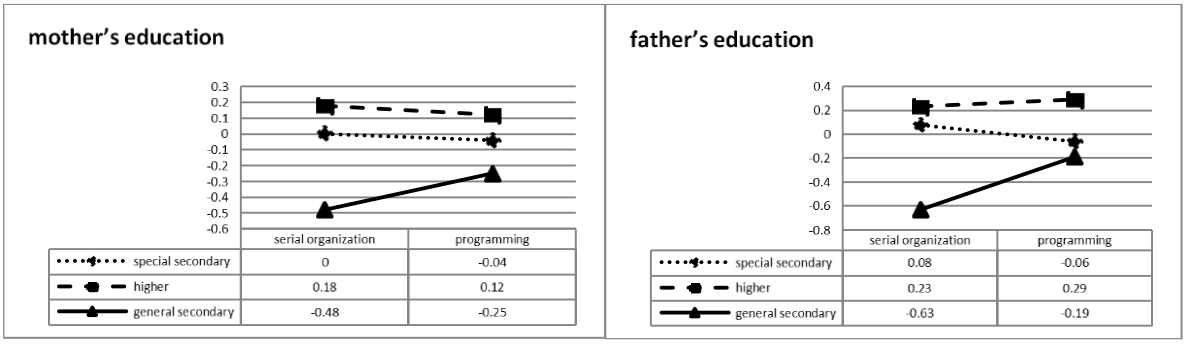


Figure 1: Indices of serial organization, programming, and control

In this case, mother's and father's education has a similar effect on the development of the serial organization of movements and speech. the With a decrease of parents' level of education, the serial organization of movements in children deteriorates which primarily manifests itself in the difficulty of mastering the motor program, poor formation of kinetic mechanisms for organizing movements, and difficulties in automating motor skills. The serial organization of movements and speech has a long period of formation in ontogenetic development. So, according to the data of Semenovich A. V., the kinetic factor is intensively formed only at the age of 7. This fact, in turn, allows us to make the assumption that well-educated parents have a longer temporary possibility of a qualitative impact on the development of the child's kinetic factor (Semenovich, 2002). The maturation of the prefrontal areas of the cortex, providing the activity of the programming and control functions, according to D. A. Farber and employees, occurs by the age of 16-17, therefore, these functional capabilities are also subject to prolonged

environmental impact in the process of formation (Farber, 1991), which is confirmed by the results of our study. The analysis of the obtained data allows us to conclude that in the process of these functions formation the effect of the father's education is more pronounced than the effect of the mother's one. The father's level of education primarily affects the ability to semantically program the statement, i.e. on verbal components. The shortage of programming and control functions of preschoolers brought up by less educated fathers is clearly manifested in the shortcomings of semantic programming of the text, the building its basic semantic links in the correct sequence. Davies's research provides evidence that the involvement of the father in raising a child positively influences the formation of such qualities as self-control, self-respect, social competence, responsibility and obedience (Davies, 1994). Accordingly, the higher the cultural capital of the father is, the more meaningful the speech instructions addressed to the child are. A different distribution of the contribution of maternal and paternal education to the development of higher mental functions of preschoolers can be observed when analyzing the state of the functions of storing and processing information (brain block II) (table 2).

Table 2: Group-average indicators of brain block II functions indices

Indicators based on father's or mother's educational level	Educational level *						Level of differences			ANOVA	
	1		2		3						
	Mean	off average std	Mean	off average std	Mean	off average std	1-2	1-3	2-3	Sig	F
Indices of the functions of the II block of the brain (maternal education)	0,18	0,14	0,06	0,15	-0,36	0,24		0,002*	0,036*	0,007	5,13
Left hemisphere function indices (maternal education)	0,28	0,14	0,08	0,15	-0,56	0,24		0,000**	0,003*	0,002	9,28
Indices of the functions of the II block of the brain (paternal education)	-0,04	0,12	0,03	0,13	-0,038	0,17				0,18	7,21
Left hemisphere function indices (paternal education)	0,14	0,11	0,12	0,17	-0,47	0,19		0,000**	0,007*	0,001	8,32

** Note –1 – higher education, 2– special secondary, 3 – general secondary*

The state of the left hemisphere, i.e., mainly speech, opportunities depends most of all on both parents' level of education. A decrease in the educational status of parents is accompanied by the weakening of the children's verbal functions. A number of papers demonstrated that well educated parents speak more, their speech is more lexically and syntactically diverse, less focused on regulating the child's behavior and more often devoted to the language itself (Hoff-Ginsberg, 1991). E. Tow expressed the idea that families of well educated parents, unlike low-educated ones, use speech for more complex purposes (to analyze and describe, reason and prove, predict and propose alternative hypotheses).

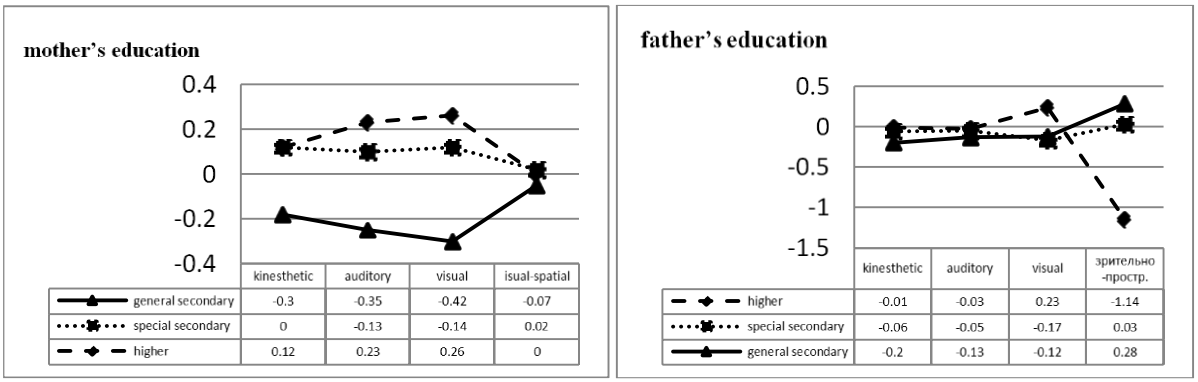


Figure 2: Brain block II function indexes

A certain effect of the father's educational status was also found on speech-mediated analytical components of visual perception (Figure 2). Children of well educated fathers put forward more adequate perceptual hypotheses; they have a better formed connection between the visual image and its verbal designation. For example, there are the studies that present the evidence that fathers are less likely than mothers to adjust their speech to the level of the child's understanding. In particular, fathers use less familiar vocabulary and more complex grammar constructions. Thus, the father plays the role of a "bridge" between the narrow family circle and the outside world, expanding the child's language and practical experience. According to our research, father's educational status contributes to the development of functions of the posterior parts of the brain. The processing functions of auditory information and kinesthetic praxis turned out to be freer from the influence of the level of paternal education, in contrast to the maternal one (figure 2). An increase of maternal education leads to improved visual perception of children and kinesthetic praxis. A well educated mother is especially favorable for the formation of the auditory-speech functions of preschoolers, mainly for the processes of auditory-speech memory. Children brought up by the mothers having secondary vocational education differ by the heterogeneity of the group, in many respects they are close to the children of the mothers having higher education; however, they have some difficulties indicating a functional deficit of processing information on the left hemisphere type. The multimodal functions mediated by the activity of the tertiary cortex of the second block of the brain, which is morphologically and functionally long-forming, turned out to be insensitive to the educational status of both parents (figure 2). In general, most preschoolers are characterized by a low level of their formation. Many authors note that preschool age is not a sensitive period for the formation of visual-spatial functions, an intensive jump in their development occurs at a later age. In her studies T. A. Fotekova indicates the heterochronism of the formation of spatial perception and spatial representations during ontogenesis (Fotekova, 2004). However, there is the fact established in our study that projection representations are worse formed in the children of well educated mothers and fathers: for example, they often had difficulties with drawing a table in a three-dimensional image. The lack of development of projection ideas in the children from the families of well-educated parents can be explained by "robbing" non-verbal functions due to the rapid development of speech ones. Since projection representations are mainly provided by the work of the right hemisphere, which, according to many authors, matures in ontogenesis earlier than the left one, then, apparently, the speech load provided by well educated parents leads to an early manifestation of left hemisphere dominance of children and inhibition of the development of some components of the right hemisphere functions. In general, parents' higher education eliminates the effect of early dominance of the left hemisphere and inter-indicators of children of the compared groups in the level of formation of the right hemisphere capabilities - there are no significant differences (table 2, figure 2). Thus, the level of parents' education exerts a predominant influence on the formation of functions with a long period of formation - these are functions of the anterior and left hemisphere parts of the brain. The effect of maternal education is stronger than the effect of paternal one, except for the functions of programming and control of arbitrary forms of activity. The data obtained in our study allowed to reveal the specific features of the influence of parental education on the development of higher mental functions of preschoolers, depending on their gender. The effect of the educational level of the mother on daughters and sons is stronger than the paternal one. Moreover, it manifests itself in a greater degree in relation to the higher mental functions of girls, and the father's education affects sons. Thus, we can summarize: the influence of the educational level of the parent is stronger for a child of the same sex with a parent. A step-by-step regression selection determined that the level of financial well-being of the family is the most important predictor that affects the formation of the higher mental functions of

preschoolers, and the higher the family financial level is, the more successfully the functions of the third block of the children's brain are developed (table 3).

Table 3: Predictors of brain block II functions

R	R^2	F	p	Predictor	Beta	p
0,298	0,089	15,10	0,000	Level of family financial welfare	0,298	0,000

When comparing the indicators of the functions of the third block of the brain, significant differences were found between the indices of preschoolers in all 3 groups. As you can see in figure 3, children from financially well-off families have the highest profile.

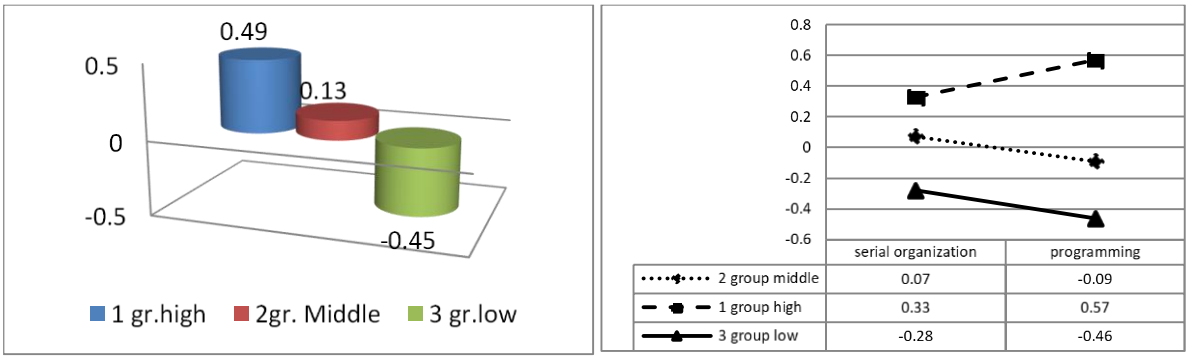


Figure 3: Indices of the functions of the children's brain block III

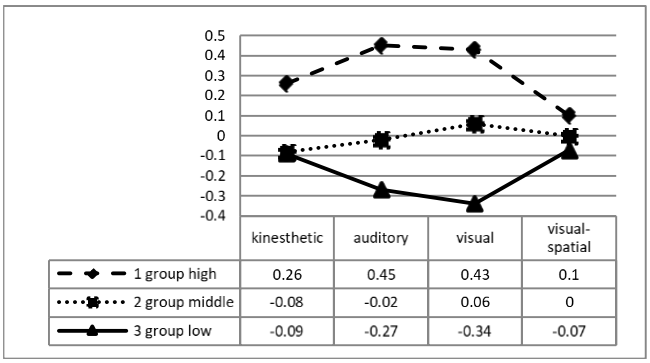
These differences are manifested in the ability to slow down their immediate reactions, in a better ability to program text, in the ability to actively update words, in the success of switching from one word to another, of the children from financially successful families: the value of their index is higher than that of the subjects of the 2nd group and significantly higher than that of preschoolers of the 3d group. The results are consistent with the data from the field of neurophysiological studies, which revealed that the parent's low financial status leads to delayed maturation of the prefrontal region of the cerebral cortex of children, which leads to impulsive decision-making, lack of selective attention and changes in brain activation (Lipina and Posner, 2012). The differences in the state of serial organization of children's movements and speech from the families of different financial levels are confirmed. Moreover, the higher the financial situation of the family is, the better serial organization of movements is (figure 3). Family financial status also turned out to be a predictor that determines the level of formation of the brain block II functions of preschoolers (table 4).

Table 4: Predictors of brain block II functions

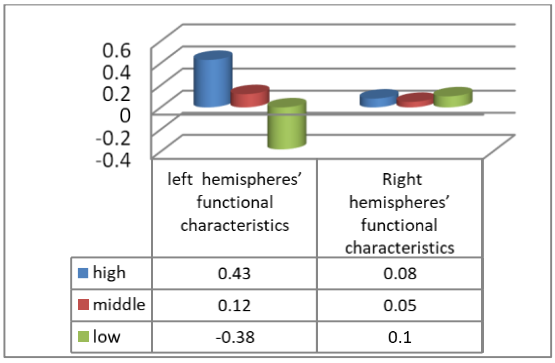
R	R^2	F	p	Predictor	Beta	p
0,298	0,089	15,10	0,000	Level of family financial welfare	0,298	0,000

As the results of one-factor analysis of variance show, the functions of the posterior parts of the brain are formed more optimally in the preschoolers from financially well-off families (figure 4).

Figure following on the next page



	kinesthetic	auditory	visual	visual-spatial
1 group high	0.26	0.45	0.43	0.1
2 group middle	-0.08	-0.02	0.06	0
3 group low	-0.09	-0.27	-0.34	-0.07



	left hemispheres' functional characteristics	Right hemispheres' functional characteristics
high	0.43	0.08
middle	0.12	0.05
low	-0.38	0.1

Figure 4: Indices of children's brain block II functions

The maximum differences in the functional state of the second block of the brain are achieved in terms of auditory and visual gnosis of preschoolers. Children from the families with a low financial level, compared with the peers from the first two groups, have less successful indicators of processing auditory information, due to lower volume of auditory-speech memory, less productive understanding of similar names of actions, difficulty in assessing and reproducing non-speech auditory stimuli. The indicators of the functions of kinesthetic praxis of the children of the selected groups are slightly differentiable. As for visual spatial functions, pair wise comparison of the corresponding indices did not reveal intergroup differences. The results obtained further allow us to evaluate the functional characteristics of the left and right hemispheres of the preschoolers' brain (figure 4). One-factor analysis of variance revealed that statistically significant differences exist in the indices of left hemisphere functions between the results of children from the most and least affluent families, as well as between the indicators of preschoolers from middle and low prosper families. The indicators of the right hemisphere indices of the children of the compared groups have no statistical differences. The results obtained indicate differences in the characteristics of higher mental functions of the children brought up in the families with different levels of financial income.

5. CONCLUSION

Taking into account all the data obtained, it can be summarized that various factors of the social-economic factors of the family are most closely related to the state of the left hemisphere functions (auditory-speech functions and the speech-mediated analytical components of visual perception) and the functions of the anterior parts of the brain (voluntary regulation of activity and serial organization of movements). The most influential family predictor can be considered the financial situation of the family. Dependence is linear - the higher the affluence is, the better the higher mental functions of the children are formed. The influence of both maternal and paternal educational level is manifested mainly in relation to the functions of the anterior parts of the brain and the left hemisphere. A decrease in the parents' educational status is accompanied by a weakening of self-regulation, the serial organization of movements and auditory-speech functions of children. The mother' and father' educational level affects the development of higher mental functions of preschoolers, mostly of the same sex. Thus, it should be noted that the early exposure to unfavorable factors of the family environment, such as its low financial level and the educational status of parents, impede the development of higher mental functions of preschoolers. Deficit of sensory-motor stimuli, depletion of the cultural environment, including speech, has a negative effect on the functions of the anterior and left hemisphere parts of the brain that are long-formed in ontogenetic development, while bypassing some of the possibilities provided by the right hemisphere, including visual-spatial functions.

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THE DEVELOPMENT OF AGRICULTURAL COOPERATION IN THE CHELYABINSK REGION: CONDITIONS AND PROSPECTS

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ABSTRACT

This paper discusses problems of further development of farms in agricultural sector of the region, and also highlights the main approaches and mechanisms for increasing efficiency of their functioning. The relevance of the research is determined by the necessity to form effectively functioning farmers in Russian regions, which in conditions of high uncertainty and risks can (1) ensure the successful development of agricultural sector and food security in countries and regions, (2) create socio-economic conditions for sustainable development of rural communities and territories. Based on the relevance, the proposed project aims to elaborate the particular methodological approach to the development of private farmers, taking into account, first, organizational and technological features of their activities, and secondly, the state of formed environment (political, institutional, socio-economic, technological) and its mobility (on the materials of traditional agricultural region – the Chelyabinsk region).

Keywords: *farms, formal and informal institutions, organizational and technological conditions, efficiency*

1. INTRODUCTION

One of the directions of fundamental socio-economic transformations and formation of market relations in the countryside is the organization of peasant (farming) facilities. Farms are subjects of small and medium enterprises. Farming in the Russian Federation was developed in conditions of land ownership forms and development of a market economy, including the agricultural sector. The intensive development of agriculture is impossible without increasing the share of the presence of farms and rural cooperatives, which are a universally recognized factor in the conservation of rural areas.

At the state level, there is a constant dialogue with representatives of small and medium-sized agricultural enterprises. As a result, support measures have been selected and they continue to improve. Since 2015, grant support has been provided to cooperatives as part of the State Agricultural Development Program. Since 2017, the mechanism of preferential lending has been launched. In 2019, the federal project "Creating a Support System for Farmers and Developing Rural Cooperation" was adopted within the framework of the May decrees of the President according to which promising young people can start their business in agriculture from scratch. In 2019 53 billion rubles will be additionally allocated in the framework of the federal project. It will increase the total state support of farmers and cooperatives by one and a half times. All these measures give a significant incentive, first of all, to creation of new industries and to the development of small and medium-sized farms.

2. DATA AND METHODS

The theoretical and methodological basis of this study will be the works of domestic and foreign scientists (representatives of both the institutional direction and other modern areas of economic science), the subject of study of which are various aspects of the functioning of agricultural enterprises, methodology and tools for modeling their behavior in a complex dynamic environment. The postulates of a new institutional theory represented by the theory of property rights, transaction costs and contracts will be used as a general methodological approach.

3. METHODS OR MODEL

Formation of efficiently functioning and competitive peasant (farming) facilities that are able to ensure food security of the country and regions, make a significant contribution to creating favorable social and environmental conditions for development of rural areas, is an urgent problem for Russian regions that have received new impetus due to increasing importance of the agricultural sector for welfare of the country, activation of the policy of import substitution, wide support for agriculture by the state. In modern reality, when, on the one hand, the demand for agricultural products continues to grow, and on the other, there are even new difficulties in the functioning of farms (adverse climate change, a decrease in the growth rate of agricultural resources productivity, relatively low profitability and efficiency of their activities), a prerequisite for survival and development of farms is development of a special integrated economic and technological approach to their achievement, sustainability, flexibility of their activities (simultaneously). Significant changes observed in the markets of agricultural products and food products, modification of consumer preferences and the demand formed by the population, rapid development of technologies of production and processing of agricultural products, application of new approaches and tools to support agriculture require a certain transformation of activities of farms, for the specification of the content of which require an adequate methodology. Despite an insignificant share in the sectoral structure, agriculture represented by small and medium-sized businesses is not only a powerful foundation of food security, which allows to solve the current import substitution problem, but also provides a significant improvement in the standard of living in rural settlements. Scientific publications, monographs, textbooks and articles in journals are devoted to problems associated with the organizational, economic and legal support of farming development in Russia [1, 2, 3]. Despite active theoretical research, the problem of sustainable economic development of peasant (farming) facilities has not yet been solved, and for this reason scientific research is still relevant and in demand. The purpose of the study is to present the advisory opportunities in the process of linking education and the needs of farmers, with regard to innovative knowledge.

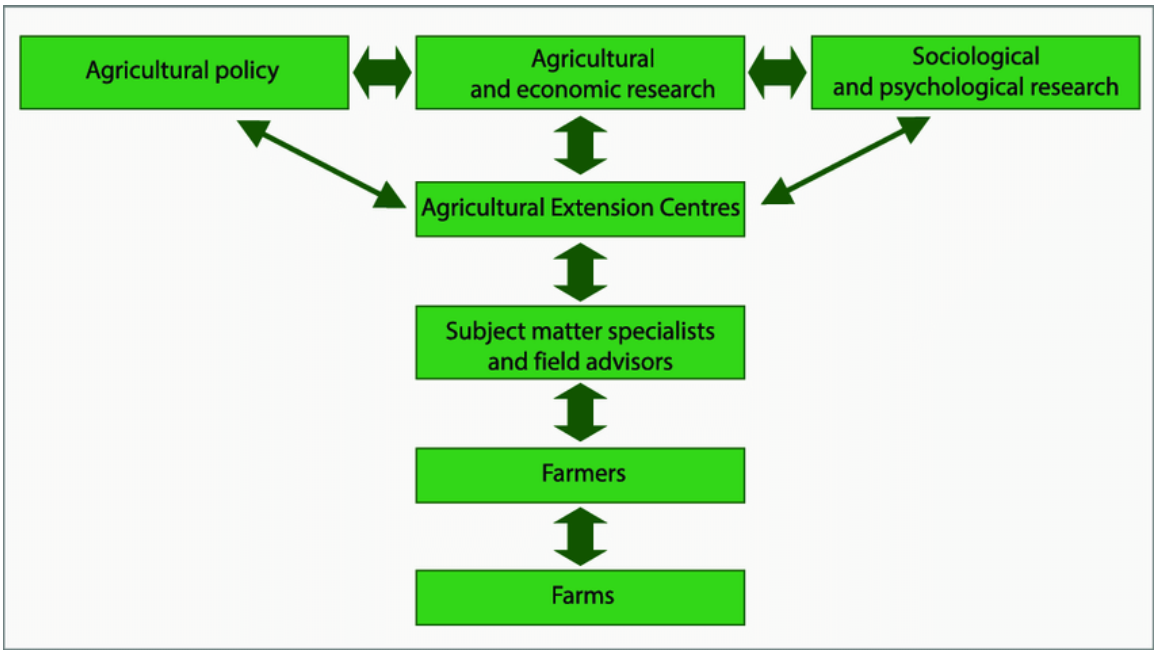

Figure 1: Simplified scheme of knowledge and information flow in the social interaction model Source

The purpose of this study is a scientific analysis of the development of farming in the Urals Federal District and in particular in Chelyabinsk region. Creation of peasant (farming) facilities in the Ural Federal District began in 1990. This process was intensified after adoption of the laws "On Peasant (Farming) Facilities" and "Land Reform" [4,5]. Currently, in all areas of the region there are applications for establishment of peasant (farming) facilities, which indicate the existence of a social base for formation of the peasantry. Under the current economic conditions, it is important to understand how farming is developing in the Urals Federal District (table 1).

Table 1: The number and size of peasant (farmer) farms in the Ural Federal District in 2016

Region	The number of peasant (farming) facilities, units The area of land provided, hectare Average size of land, hectare	The number of peasant (farming) facilities, units The area of land provided hectare Average size of land, hectare	The number of peasant (farming) facilities, units The area of land provided, hectare Average size of land, hectare
Ural federal district	7349	1829104,2	248,9
Kurgan region	1097	659251,3	601,0
Sverdlovsk region	1004	139961,6	139,4
Tyumen region	1011	303777,5	300,5
Chelyabinsk region	4237	726113,8	171,4

According to the 2016 All-Russian Agricultural Census, 7349 peasant (farming) facilities operate in agriculture in the Ural Federal District. Peasant (farming) facilities currently firmly occupy their niche in the region's agriculture, both in crop production and in livestock farming. In recent years, there has been a steady trend towards an increase in production of agricultural products in small forms of farming in the Urals Federal District. This occurs mainly due to enlargement of peasant (farming) facilities themselves, increasing their equipment, improving

technologies in production of agricultural products, creating new agricultural units SPOK, SKPK. Chelyabinsk region is one of the main agricultural areas of the Ural Federal District. Its share in the gross production of plant products in the Ural region is the following: grain - 35%, potato and vegetables - 30%. Chelyabinsk region specializes in grain production. In 2016, 4237 peasant (farming) faciities carry out economic activities in Chelyabinsk region. The state statistics for Chelyabinsk region for 2017 clearly demonstrate the contribution of peasant (farming) facilities to the total production of the main agricultural products in the region (table 2). Statistics shows the fact that farmers of the region have stable results in production and economic activities. Moreover, for most indicators taken into account by Rosstat, there is a positive trend, which indicates a relatively stable development of the farming sector in Chelyabinsk region in the context of modern changes in the economy of the country and the region.

Table 2: Dynamics of agricultural production in Chelyabinsk region.

Indicator	Farms of all categories			Peasant (farming) facilities			Percentage
	2000 г.	2010 г.	2017 г.	2000 г.	2010 г.	2017 г.	
Agricultural output, thousand tons							
Grain (weight after refinement)	1351,5	691,8	2307,3	227,6	166,2	1082,7	46,9
potatoes	588,0	563,3	674,8	9,1	22,0	51,0	7,6
open field vegetables	190,7	258,8	214,3	1,5	4,4	17,8	8,3
milk	578,5	584,9	455,3	13,5	18,2	21,7	4,8
eggs million pcs.	1042,9	1305,6	1679,6	2,6	2,2	1,2	0,17
wool(physical weight)	328	416	369	13	37	29	7,9
Produced (grown) in live weight, thousand tons							
Total livestock and poultry	166,9	214,1	539,8	3,3	4,7	5,8	1,1
including							
cattle	71,4	37,3	42,5	0,8	1,6	4,1	3,6
pigs	55,2	48,4	138,6	2,2	2,7	1,1	0,8
sheep and goats	3,0	1,9	4,2	0,2	0,2	0,4	9,5
poultry	34,5	124,3	351,2	0,1	0,1	0,1	0,03

The share of crop and livestock production in peasant (farming) facilities in the total volume of production is the following: grain - 46.9%, potatoes - 7.6%, open ground vegetables - 8.3%, livestock and poultry in live weight - 1, 1%, including cattle - 3.6%, sheep and goats - 9.5%. Comparing the indicators of agricultural production in the peasant (farming) facilities of the region with the level achieved by the collective public sector, we can draw certain conclusions that despite the low level of organization of production, poor supply of tractors and agricultural machines compared to the public sector, and the need to solve many organizational issues in addition to production, all this did not prevent peasant (farming) facilities from producing almost half (46.9%) of grain in the region, which indicates their high potential in providing them with appropriate support [6]. Although peasant (farming) facilities are mainly oriented towards crop production, in 2017, in comparison with previous years, the role of animal husbandry increased significantly (table 3).

Table 3: Livestock by categories of farms in Chelyabinsk region, thousand livestock

Indicator	Farms of all categories			Peasant (farming) facilities			Percentage
	2000 г.	2010 г.	2017 г.	2000 г.	2010 г.	2017 г.	
cattle	557,5	380,4	242,3	11,7	13,3	32,1	13,2
including cows	249,5	177,3	117,4	5,3	6,3	14,2	12,1
pigs	386,2	389,8	790,1	12,3	11,3	8,1	1,0
sheep and goats	136,5	143,6	152,0	5,1	12,1	17,9	11,8
horses	31,1	23,5	25,7	1,0	2,7	4,8	18,7

Today, the proportion of livestock in peasant (farming) facilities in relation to the total number of cattle in Chelyabinsk region is the following: cattle - 13.2%, cows - 12.1%, sheep and goats - 11.8%, horses - 18.7%. Effective development of peasant (farming) facilities faces organizational, economic and social problems. The most significant factor adversely affecting functioning of peasant farms is difficulty in selling manufactured products. Moreover, the main constraint is not the lack of demand for agricultural products and food, but the lack of demand for agricultural products. Therefore, farmers are forced to sell their products to intermediaries at cost. Another, no less negative factor holding back the development of farms is inaccessibility of financial resources [9,10]. The lack of sufficient financial resources makes it possible for farmers to use primitive technologies, morally and physically obsolete equipment, which reduces efficiency of agricultural production and the competitiveness of the small-scale agricultural sector. The solution to most of the above problems lies with the implementation of the regional targeted programs "Development of agriculture in Chelyabinsk region for 2016-2020" and "Sustainable development of rural territories of Chelyabinsk region for 2014-2020." These programs should become an instrument for implementing the state strategy for sustainable development of peasant (farming) facilities.

4. RESULTS

Improving the efficiency of peasant (farming) facilities, as well as their sustainable development will allow to do the following:

- increase the share of cultivated agricultural land;
- increase agricultural production;
- increase the standard of living of the rural population;
- ensure growth of rural employment and the reduction of hidden unemployment;
- solve the socio-economic problems of rural development related to the priority objectives of the agricultural sector development.

Obviously, one of the most significant problems of peasant (farming) facilities is their financing. Currently, state support is provided as part of the national project “Small and medium-sized enterprises and support for individual entrepreneurial initiatives”. One of the objectives of the national project is to create a system of support for farmers and development of rural cooperation. In 2018, total support to farms increased in comparison with 2017 by 70% and amounted to 750 million rubles. 697 farmers and individual entrepreneurs were able to use various subsidies and grants. At the same time, grant support for novice farmers, family livestock farms and agricultural consumer cooperatives increased two and a half times. Grants for development of production were received by 31 beginner farmers, three family livestock farms and two cooperatives involved in the processing of meat and dairy products. In 2019, 90 million rubles was aimed at financing grants for beginner farmers [7,8]. Up to 30 million rubles. support for family livestock farms will increase to 20 million rubles for cooperatives.

In 2018, it amounted to 28.2 and 13.4 million rubles, respectively. In 2019, within the framework of the new regional project "Creating a system for supporting farmers and developing rural cooperation", new grants for small forms of farming called "Agrostarn" were established. Agrostarn grants are designed to support entrepreneurs registered as farmers for subsidies or the farmers who made a commitment to formally open a farm after receiving funds. The grant amount 3 million rubles was determined. A prerequisite is the availability of own funds in the amount of 10% of the cost estimate. An indicator is set for the region. For each issued 3 million rubles. grant support is necessary to ensure creation of two jobs. The project also establishes subsidies to the regional center of competence for provision of information, methodological and advisory services to rural entrepreneurs. This role will be played by a multifunctional center for support of rural entrepreneurs "Business Territory". 84.2 million rubles were allocated for these purposes, with 96% of the funds being raised from the federal budget.

5. CONCLUSIONS

Thus, the increase in the effectiveness of state support to farms, implementation of targeted programs are important conditions for progressive development of the agricultural sector of Chelyabinsk region, increase of agricultural production, strengthening of food security, increase of rural employment and income, and solving to other social problems in rural areas. Models of peasant (farmer) farms were proposed that were specified by various parameters of activity (specialization, size, targets, etc.) that have the prospect of successful functioning in the Chelyabinsk region (in the mobile macroeconomic and institutional environment)

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INBOUND TOURISM TO INDIA: FEATURES AND PERSPECTIVES

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ABSTRACT
The topic of this research paper is to explore India as an important tourist destination in Asia. The tourism potential in India is enormous but still not fully utilized, especially by foreign tourists and travelers. Although the tourism potential is still to be more commercialized and improved, it is obvious that the tourism in India is increasing in comparison to the average World's growth. The aim of the research is to find out and describe the main tourist regions in India and to identify the resources and tourist attractions of each. Further on, the goal is to analyze and recommend the types of tourism and their characteristic features in eight tourist regions: Western, South-Eastern, Himalayan Northern, North-Western, Northern, Central, North-Eastern, Andaman, Nicobar and Laccadive islands. The methods used in this paper are historical, descriptive, analysis and synthesis. The research results indicate the preference of foreign tourists is towards Western, Northern, Himalayan Northern regions while Central, North-Eastern regions are still not visited sufficiently when it comes to their tourist potential. Contribution of the research is seen in providing the deeper insight in Indian tourism, development potential but also in rising awareness of its possibilities to improve less visited regions and the overall tourism perception to foreign tourists.
Keywords: *Asia, India, Indian tourism, tourist destination, tourism development*

1. INTRODUCTION

International tourism is continuing to be growing worldwide. The United Nations World Tourism Organization (UNWTO) estimates that international tourist arrivals grew by 7% in 2017 to 1323 million and international tourism generated 1,6 trillion in export earnings. In the first part of the year 2018 a growth in international tourist arrivals was 6% [6]. India is a growing tourist destination with a very high potential. India accommodates natural beauties: beaches, high mountains, natural parks and at the same time has deficit of lakes, deforestation, polluted rivers, badlands. India shows a great variety of religions, cultures, languages (about 1652 with 18 alphabets), regional features and diversity. Simultaneously there is growing number of communal tensions and conflicts especially in relations between Hindus and Muslims. This country having gone through millennia of very intensive historic events and changes possesses numerous cultural resources including thousands of Hindu, Buddhist, Sikh, Jain, Christian, Muslim, Bahai temples, numerous fortresses, forts, palaces, mansions, ruins. By the end of the year 2019 there were 38 objects of UNESCO World heritage list (30 cultural, 7 natural sites and 1 mixed (cultural-natural)) [5].

Needless to say that Indian culture is very popular in the Western world: different types of yoga and Indian dance, films, cuisine, clothes. The words "karma", "mantra", "dharma" seem to enter the vocabulary of many people worldwide. Indian or of Indian origin spiritual leaders, scientists, politicians, human activists, people of art show growing influence worldwide. For example the very popular Indian spiritual teacher Sadhguru was making a speech at Crocus city hall in Moscow (where many world celebrities do) and he was conducting master-classes to the team of Russian Sberbank. Regardless the growing popularity of India it has not yet become mass tourist destination in contrast to neighboring China, Thailand, Malaysia. India accumulates only 0,80% of international tourist arrivals (though the government's aim is 1% and more). In the meantime the inner tourism is growing at a very high speed. The reasons for the relatively low numbers of international tourist arrivals to India are:

- hot and humid climate (except Himalayan region) from March till September,
- relatively low quality of services, pour tourist infrastructure in many places,
- poverty of many, often deplorable sanitation especially in densely-populated areas and poor communities,
- slow driving speed on most of the automobile roads,
- existing tensions and border conflicts with Pakistan, the problem of Kashmir, the news about growing numbers of rape, etc.

Indian government is working to improve tourist attractivity of the country: Incredible India program is being implemented, the sanitation in big cities is improving, the middle class living standards are rising which brings about growing demand on better environment conditions. Also Indian competitive advantage – relatively low prices on many goods and services in comparison with China, Thailand, Shri-Lanka.

2. INTERNATIONAL TOURIST ARRIVALS STATISTICS

The table 1 shows the dynamics of international tourist arrivals to India during last 20 years. As shown in the table the number of tourist arrivals is growing almost every year. In the years 2014th, 2016th and 2017th the growth was 2-2,5 times higher than that of the world as a whole.

Table following on the next page

Table 1: Statistics of ITA to India

The year	ITA (mln)	The annual tourist flow growth (%)
1997	2,37	3,8
1998	2,36	-0,7
1999	2,48	5,2
2000	2,65	6,7
2001	2,54	-4,2
2002	2,38	-6,0
2003	2,73	14,3
2004	3,46	26,8
2005	3,92	13,3
2006	4,45	13,5
2007	5,08	14,3
2008	5,28	4,0
2009	5,17	-2,2
2010	5,78	11,8
2011	6,31	9,2
2012	6,58	4,3
2013	6,97	5,9
2014	7,68	10,2
2015	8,03	4,5
2016	8,80	9,7
2017	10,04	14,0
2018	10,55	5,2

Source: Alexandrova, A., Khristov, T. at al. (2018). Geography of tourism. Moscow: KnoRus.

The decline in 1998 was due to the financial crisis in South-East and East Asia. As we remember the market indices plummeted in the second part of the year which brought about currencies devaluation, industrial production and business activities decline, growth of unemployment and much more in these countries which have intense relations with India (in Singapore and Malaysia 7-8% of population are of Indian origin, mostly Tamils). So, that crisis have cut short the trips to India from these countries. The set back in the years 2001-2002 was due to other reasons. In January, 2001 there was the strongest-within-200-eyars devastating earthquake of 7,7 magnitude in Gujarat. September was marked by the terrorist attacks in New York which resulted in reducing the numbers of passengers travelling by air. In December 2001 there was terrorist fighting near Indian parliament in Delhi which brought about tenser relations between India and Pakistan. In the beginning of the year 2000 there were Hindu-Muslim clashes in Gujarat resulting in about 2000 dead. [1,2]. After these tumultuous years India witnessed the stable growth of inbound tourism which was not blurred by the terrorist attacks in Mumbai in 2006 (several suburban trains were blown up) and 2008 (the assault on the famous Taj hotel and fighting on the streets and near Victoria rail terminal). But the financial crisis of late 2008-2009 brought about the fall. Last decade the inbound tourism to India has been showing robust growth. The table 2 shows arrivals to India from 15 leading destinations in the year 2014.

Table following on the next page

Table 2: Top 15 countries visiting India (2014)

№	Country	ITA (thousand)	Market share (%)
1.	USA	1119	14,57
2.	Bangladesh	943	12,27
3.	The UK	839	10,92
4.	Shri-Lanka	302	3,93
5.	Russia	270	3,51
6.	Canada	268	3,50
7.	Malaysia	262	3,41
8.	France	246	3,20
9.	Australia	240	3,12
10.	Germany	239	3,11
11.	Japan	220	2,86
12.	China	181	2,36
13.	Singapore	151	1,96
14.	Nepal	126	1,65
15.	Thailand	121	1,58
	These countries (total)	5526	71,97
	Other countries	2152	28,03
	Total	7678	100

Source: India Tourism Statistics. Ministry of Tourism Government of India. India, New Delhi, (2019)

As can be seen from the table, USA provided largest numbers of tourists in the year 2014th, (14,57% of their total amount). Bangladesh and the UK were on second and third positions. Some part of visitors from USA and the UK were people of Indian origin, and from Bangladesh and Shri-Lanka - Bengalis and Tamils correspondingly.

3. SELECTIVE TYPES OF TOURISM IN INDIA

As a tourist destination, India can offer different types of selective forms of tourism. The major types are: cultural, religious, wellness, medical, ecological and business tourism.

3.1. Cultural tourism in India

Numerous tourist objects are located all over the country. In the North (Ganges valley, Kashmir) and Center of India different Muslim invaders in the Middle ages were destroying Hindu, Buddhist, Jain temples constructing mosques, minaretes, tombs, bazaars, royal capitals in their own way. That is why cultural resources of Northern India often resemble those of Iran, Uzbekistan, etc. South-West and South-East (the states of Tamilnadu, Karnataka, Telangana, Andhra-Pradesh, Kerala) are more originally and authentically Indian. Among tourists visiting cultural places especially popular are the Golden Triangle (Delhi with its seven forts including the Red Fort, Kutab Minar, Humayun's tomb) – Agra (Taj-Mahal mausoleum, Agra fort) – Jaipur (Jantar-Mantar palace, the observatory), and Fatehpur-Sikri (the so called «Dead city»). The above-mentioned monuments are in UNESCO World Heritage list. Among thousands of other places of interest are the Gwalior fort, Khajuraho temples with erotic sculpture, the medieval capital of Hampi ruins, Catholic churches of Goa, numerous forts and fortresses (Bikala, Janjira). Indian museums (National archaeological in Delhi, Chattrapati Shivaji in Mumbai) display rich exposition of artefacts.

3.2. Religious tourism potential in India

India is probably the richest in the world in regards to religious tourist attractions. First of all India is the motherland of Buddhism. In the state of Bihar Bodhgaya is Buddha's Enlightenment venue. In the neighboring Uttar-Pradesh Sarnath – is the place of His first Sermon. Buddhists from all over the world come on pilgrimage here, The Dalai-Lama often presents His teachings. In many places all over the country Tibetan refugees have rebuilt their towns and temples in exile. Buddhism enriches India with its affluent cultural heritage: ancient stupa in Sanchi, ancient temples and monasteries of Ajanta and Ellora in the state of Maharashtra, many ancient ruins of temples, monasteries, universities (Nalanda). Hindu temples and ashrams (spiritual centers) are spread all over India. We may mention Gangotri (here holy Ganges starts), Varanasi (ritual washing in Ganges), Madurai (famous Meenakshi temple), Rameshvaram (ritual washing in the ocean), Vrindavan (the place where Krishna was growing), Gaya (ancestors worshiping rituals), Kumbakonam (very popular to perform religious weddings) and many more. Ashram in Thiravannamalai is popular among followers of Shri Ramana Maharshi while Puttaparthi - Satya Sai Baba's and Nemam – Shri Amma Bhagavan's disciples. There are also holy places of Jains (Pavapuri, Palitana), Sikhs (Amritsar), Christians (Francis Xavier tomb).

3.3. Medical tourism potential in India

Majority of thousands of kilometers of Indian beaches are not used for recreational needs. On the Western coast organized beach tourism is present in the state of Goa, also in Daman and Diu and partly in the state of Kerala (Kovalam and Varkala), while in the Eastern coast – in Mamallapuram. Kerala is also popular for Ayurveda treatment (Somathiram, Manalthiram and other resorts). Kerala was struck by severe rains and floodings in summers of 2018 and 2019. Hill resort Darjiling is located in the state of West Bengal.

3.4. Ecological tourism

Its possibilities are limited by agriculture and deforestation. Many traditional Indian mammals are extinct outside of Natural parks and Nature reserves. India offers visiting national parks Jim Corbett (Uttarakhand), Periyar (Kerala), Kaziranga (Assam).

3.5. Business tourism

Business tourism is picking up momentum in Mumbai, Delhi and Kolkata. The cities of Pune (Maharashtra), Bengaluru (the capital of Karnataka), Haiderabad (the capital of Telangana) and Noida (near Delhi) with their booming IT production demonstrate growing number of business events and visits [1,3]. Other types of tourism are showing progress as well for example event-tourism, mountain skiing, mountain tracking, etc.

4. TOURIST REGIONALIZATION (ZONATION) OF INDIA

The authors are proposing their own tourist geographic demarcation of Indian territory. Of course the borders between the tourist regions are relative. The ensuing division into districts is based on basic research into geography of tourism of modern India. We may outline several tourist regions of India.

1. Western region - includes the states of Kerala, Karnataka, Goa, Gujarat, Maharashtra (Western part), Daman and Diu union territories. The population here is better off than in India in general. The natural resorces are relatively rich especially in Kerala and Karnataka between the Arabian sea and the Western Ghat mountains. The Malabar coast is also called the «The spices coast», there are rich jungles in Periyar national park. Tourists should mind torrential monsoon rains which happen here in summer months.

The specialization of the region:

- primary wellness tourism - beach resorts Kovalam, Varkallai (Kerala), Anjuna, Kalangut, Dabolim and others (Goa) + Ayurvedic treatment;
- religious – numerous Hindu, Jain, Christian, Muslim temples, Buddhist cave temples and monasteries of Ajanta, Ellora (also Hindu and Jain), Karla, Bhaja, Kanheri;
- cultural – ancient towns of Hampi (UNESCO World heritaje list), Mysore, Bidar, Bijapur;
- ecological – national parks and backwaters of Kerala, hill stations in the Western Ghat mountains.

2. South-Eastern region - encompasses the states of Tamilnadu, Andhra-Pradesh, Telangana. In comparison with the Western region the weather here is hotter, natural diversity – smaller, the summer monsoon is weaker, but there is a North-Eastern monsoon here in October and November. The main types of tourism are cultural and religious to temple towns (Madurai, Rameshwaram, Shri Kalahasti, Thiruvannamalai, Chidambaram, Trichy) + numerous ashrams and business (Chennai, Haiderabad). The region is visited by Tamil people from Shri-Lanka, Malaysia, Singapore.

3. The Himalayan northern region - includes Himachal-Pradesh, Uttarakhand and Sikkim states, the north of West Bengal as well as Jammu and Kashmir state (being cancelled and transferred into 2 union territories - Ladakh and Kashmir). These are mountain areas, unique ecosystems and special climate. In contrast to other parts of India where generally the high tourist season lasts from October till February, here – May, June and September. The types of tourism are mountain tracking (Gangotri, Kashmir), extreme, ecological (Jim Corbett national park), pilgrimages to Hindu holy sites in Himalayas (Gangotri, Yamunotri, Badrinath, Kedarnath).

4. North-Western region - embraces the states of Punjab, Rajasthan, Haryana, union territory of Delhi. Thar – the only desert is located here as well as some lakes (Pichola). Punjab is a relatively wealthy state with predominantly Sikh population. Types of tourism:
   - cultural – Jaipur, rajput palaces, mosques, tombs;
   - religious – holy places of Hindus, Jains, Sikhs;
   - adventurous (a rail trip on a popular royal express train),
   - Business (Delhi, Noida).

5. Northern region consists of the states Uttar-Pradesh, Bihar, most part of West Bengal, north of Madhya-Pradesh. The Ganges valley is extremely densely populated so there are almost no places with original nature left. In winter it is often cold here at nights, and very hot in April, May and June. Many types of tourism are present here, but we should outline cultural one on Golden triangle and Buddhist pilgrimages to Bodhgaya, Sarnath, Shravasti, Vaishali, Nalanda, Rajgir and Kushinagara.

6. Central region comprises center and east of Maharashtra, south of Madhya-Pradesh, Chattisgarh, Odisha, Jharkhand states. This region is relatively poor with tourist resources. Beaches of Odisha are not fit for taking rest on. The incoming tourism from abroad is poorly developed here.

7. Notrh-Eastern region conists of the states of Meghalaya, Assam, Arunachal-Pradesh, Mizoram, Tripura, Manipur, Nagalend. There is strong potential of nature-oriented types of tourism. These states looking like «North-Eastern appendix» are relatively far from the

«mainland» of India. There have been terrorism and separate movements here, possibilities to visit many places remain limited. The inbound tourism is relatively feeble but it is growing rather fast in Assam.

8. Andaman, Nicobar and Laccadive islands – beach (sun, sea and sand) tourism, diving and surfing are actively developing here. Andaman and Nicobar islands suffered strongly from tsunami of 2004. This territory is becoming more and more popular among foreign tourists [3].

5. CONCLUSION

India is an important tourist destination in Asia, and its tourist potential is not fully used by foreign tourists. On the other hand, the tourism in India is stably growing faster than in the World in general. This research allowed to lay out 8 tourist regions with different tourist resources, types of tourism and their characteristic features which are: Western, South-Eastern, Himalayan Northern, North-Western, Northern, Central, North-Eastern, Andaman, Nicobar and Laccadive islands. Foreign tourists mostly visit Western, Northern, Himalayan Northern while Central, North-Eastern regions – to much smaller extent. Therefore it is to recommend to the destination management companies and authorities in India to analyze and utilize the potential of Central and North-Eastern regions and increase promotion but also other marketing activities especially, tourism product development.

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DIGITAL CENTURY: NEW APPROACHES TO EMPLOYMENT IN AZERBAIJAN

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ABSTRACT

In order to use people's intellectual and creative potential more effectively in the modern development level of the world there is a need for an application of a new economic development model. This model is aimed at increasing the economic and social effects of cooperation among the enterprises and institutions. The large-scale changes are expected in the fields of labor and employment. It means the classic labor organization and the usual forms of employment are slowly assigned to robotic and intellectual computers. It is seen that in the future the profession work and its results will be the motivation and responsibility of each employee. The expected radical changes in social and labor spheres attract the public attention, economists and politicians. That is why, the main goal for us is to estimate the objective changes in the labor market and the employment system along with the adaptation of Azerbaijani science to this model.

Keywords: *Digital and innovative governance, employment, Information and communication technology, knowledge based economy, competitive economy*

1. INTRODUCTION

The theme actuality of this article is related to the modern technological changing the structure of life and public relations radically. In the article it is said about the negative and positive aspects of the impact of the digital economy on the international labor market. At the same time the main advantages of the introducing digital technologies into the international labor markets and determining the perspectives, the main directions of state support for the labor market for the country's economic growth have been analyzed. Today, in almost all areas of public relations, digital technologies are widely used which greatly simplifies life, saves time, receives more information, and makes more informed decisions. Ensuring long-term economic development is directly related to the digital development. In the conditions of restructuring the national economy in the country, from the structural point of view, in the area of digital development, certain tasks are solved, such as ensuring scientific and technological development, increasing employment and profit, etc. Economic growth of business in Azerbaijan is an important factor affecting the growth of the welfare of the population. The most significant tasks are the followings: to ensure socio-economic and financial stability, to improve the legal framework and mechanism for implementing laws, to develop competitive industries and qualified personnel, to change the education system, as whole, taking into account the factors that affect the development of business in the country. The use of modern technology creates specific conditions for those employed on digital platforms. Thus, the introduction of digital technologies in the activities of the employment service, the conversion of their services to electronic form will help diversify the opportunities for interaction between employers and job seekers in the labor market. The digital revolution is a long sequence of innovative surges and changes in tools and techniques of the economic management.

This is primarily due to the introduction of microprocessors and microchips - universal technologies, which significantly reduced production costs and at the same time increased production capabilities. As a result a number of new products and industries with wide investment opportunities have led to the emergence of the new socioeconomic imbalances.

2. FACTORS AFFECTING THE DEVELOPMENT OF EMPLOYMENT IN THE DIGITAL AGE

In 2019 every second inhabitant of the world got access to the Internet, it means the digitalization will soon change existing human activities and will have a great influence on the structure of the world economy. According to the considerations of McKinsey Global Institute (MGI), it is possible to automate up to 50% of worldwide business operations over the next 20 years [7]. First of all, it includes jobs requiring the performance of routine physical transactions, as well as occupations related to data collection and analysis. As a result, automation will lead to a decrease in jobs requiring a medium-sized degree of expertise and an increase in wages. The development of artificial intelligence will lead to increased inequality in the labor market and a decline in jobs. The artificial intelligence represented by self-learning principles develops faster than expected and necessitates reducing the impact of new technologies on the labor market. In spite of all, the digital technologies have positive influences on the labor market. Especially because of the social or geographical constraints, it helps to develop additional skills and abilities for people who do not have such opportunities. The employers and employees meet gradually often on the Internet. Similar to goods and services markets, P2P networks (P2P payments or card-to-card transfers) emerge in the same labor market. As in goods and services markets, P2P networks (P2P payments or card-to-card transfers) appear in the same labor market as in the same form. The high-paid new professions related to digitization also appear. As the boundaries of innovations expand and education improves, the quality of the workforce increases, the employee profile and requirements for it change. This is not only a qualitatively new type of quality and interactive consumption, but it also helps to form a new model of employment and career development. It is important to have professional knowledge, systematic and creative abilities, abstract capabilities, data processing and selection in the professional profile of a modern employee. The digital literacy is an important part of the digital economy. The future labor market is a growing generation of “digital technologies” during the active growth period [6]. By 2025 “Millennium generation” and its component “digital aborigines” will form about 75% of global workforce [8]. In the digital economy the modern labor market has a number of features. Today the new generation comes into the labor market after the year 2000. The main feature of this generation is its adaptation to high technology. The priority for the next generation is the target behavior model, the availability of career values, the desire to know the outcomes and the high income. The modern job seekers have the opportunity to find a job that will help them realize their interests and create an active model of consumer behavior. In contrast to older generations being afraid of the beginning of the digital economy, the new generation accepts new information and network technologies positively. That is why the companies wishing to attract and maintain new types of employees should develop new tools to maximize their capabilities. The International Labor Organization notes that there are 190 million unemployed in the world, it means about 30-35% of employed people are looking for work, about 75 million young people are officially unemployed [10]. The total number of unemployed people in our country is 257,000 [2]. The research carried out in 2011 shows that over the past 15 years, the development of the Internet has put an end to 500,000 job places, at the same time it has led to about 1.2 million job vacancies [7]. In the United States, LinkedIn more than 130 million people have registered and it forms the great part of the working population in US. More than 3 million CVs have been posted on the boss.az, jobsearch.az, job.az platforms in Azerbaijan – it is one-third of the Azerbaijan’s working

population. Besides, a vacancy bank is created in our country on unemployment. Creation of a vacancy bank has been reflected in Article 7 of the draft "Employment Act". The employers who are not included in the electronic information system within the specified period will bear responsibility in the definite form. This situation, of course, reducing unemployment can reduce shadow employment and the period of job search. One of the priorities for improving business is the issue of the regulatory framework. In recent years, purposely strengthen the regulatory framework for improving business performance, measures have been implemented, in particular, a law has been adopted and an operational mechanism for action has been created. In general the development of business relations between employers and employees depends on the situation in the labor market. The digital platforms such as Uber and You Do based on the effective correlation of demand and supply levels in the labor market are the clear example to it. The application of modern digital tools in all aspects of life helps the formation of un-existing occupations and jobs, for example, large-scale data analysis and personal data protection, digital marketing and promotion in social networks are rapidly growing new specialties. The main result of new technologies in the labor market was the creation of remote employment opportunities. So, the employee's corporate connection with the employer disappeared (freelancer, outsourcing). Notwithstanding, the ability to work remotely thanks to modern technologies allows increasing the work efficiency of the regions where local demand is limited. According to the information of World Labor Organization, the number of remote workers in the world is 17%, Japan and the US reach 40%, but for Azerbaijan there is no information about independent and freelancer employees. According to the American Authoring Institution, 89% of establishments in the United States transmit a part of their business processes to external providers. This number is 87% in Germany, 88% in France and 83% in Europe. For example, the US Company General Electric has set the goal of joining the world's top 10 software development companies by 2020 and is already attracting qualified professionals in digital technology. In particular, GE plans to increase the number of its staff to 20,000. It is an unprecedented goal for a revolutionary strategy and a company in the engineering industry.

3. INVESTING IN DIGITAL DEVELOPMENT

Digitalization is expected to play a leading role in diversifying the economy of Azerbaijan and reducing its reliance on hydrocarbons, current goals of the Government of Azerbaijan. The national development plan, Azerbaijan 2020, envisions creating a high-income economy by reaching a per capital income of $13,000 [11]. ICT is viewed as essential to the plan, given its cross-cutting scope of economic diversification and transitioning the nation to the knowledge society. This report reflects status ICT sector as of September 2018 and legislative status as of December 2018. In different periods, the development priorities of the countries differ from each other. As a rule, the lower the level of development and specialization of the economy, the greater is the dependence on natural advantages. The existence of such advantages is favorable for economic development opportunities. However, scientific and technological development in the long term does not get rapid development, and there are no significant changes in social needs. So, the definition of priority directions of investment is important in the preparation and conduct of training methods of trade policy. Investment priorities of business development in the national economy and developing socio-economic spheres are considered from the point of view of their impact on poverty and reduction of regional inequality. However, in order to pursue a policy of globalization of capital investments in the state, a special methodology is needed that takes into account the certain priorities. It is necessary to develop decision-making procedures related to the direct participation of investments in the development of the country. Investment projects are co-financed from the state budget, supported by the investment program of projects, financed by the National Entrepreneurship Support Fund, the Azerbaijan

Investment Company, and have preferential financing terms. In addition, business development is stimulated by leasing activities that provide preferential terms for leasing of machinery and equipment. In this case, it is important to have alternatives in the distribution of limited resources. Investment decisions on the proposed criteria for prioritizing projects depend on assessing the level of various indicators, in particular, on the level of project profitability, the level of risk, the impact on employment of the population in a particular territory, etc [5]. Today, Azerbaijan is concentrated on the progress of its digital sector. The administration aims to turn the country into an ICT hub for the Caucasus, a goal intensified by the State Program on the Implementation of the National Strategy for the Development of Information Society in Azerbaijan for 2016-2020, a edict signed by the President declaring 2013 the year of ICT in Azerbaijan; and the effect plan consisting of 52 measures for this goal. Further, the Strategic Roadmap for Development of Telecommunications and Information Technologies in Azerbaijan Republic has been under realization since 2016 [4] (Table 1).

Table 1: Strategic Roadmap for Telecommunications and Information Technologies in Azerbaijan Republic

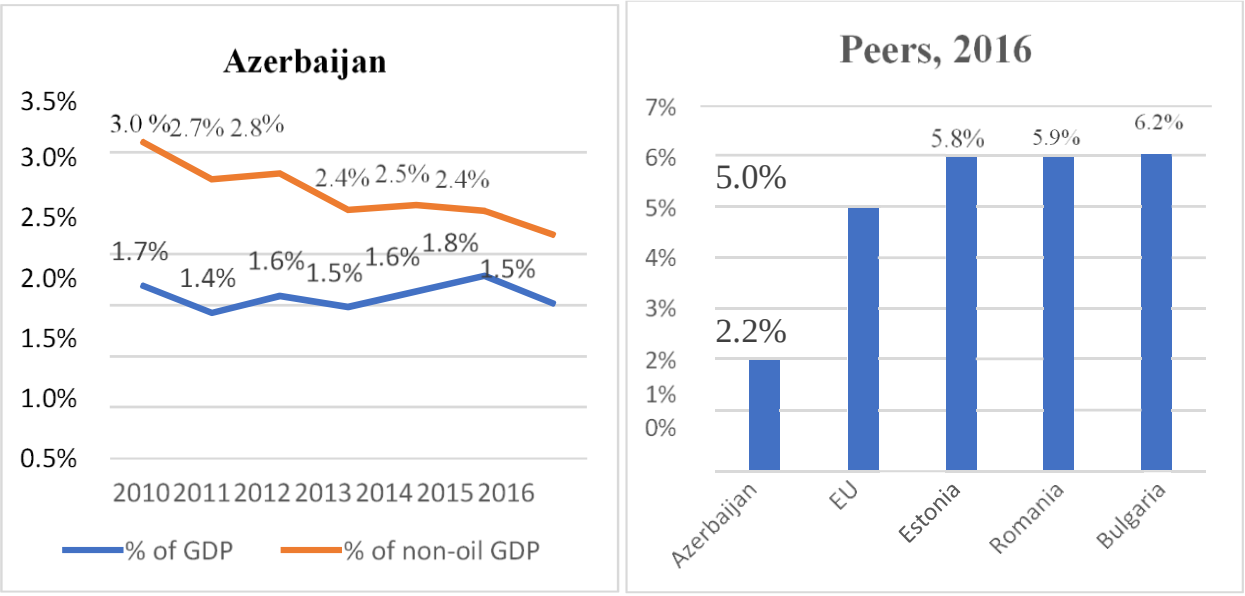
Strategic Target	**Priorities**
1. Improve governance structures, and strengthen ICT	1.1. Establish an independent regulatory body 1.2. Liberalize the telecommunication market 1.3. Increase mobile infrastructure investments
2. Increase productivity and operational efficiency of the business environment	2.1. Extend digital payments 2.2. Extend technology-based operations in business environment 2.3. Upgrade technology education with the involvement of businesses 2.4. Improve the electronic systems of government institutions 2.5. Increase knowledge and skills in the ICT sector, and apply ICT in education system
3. Digitize government and social environment	3.1. Improve the information systems of government institutions 3.2. Create an end-to-end integrated e-health infrastructure

Source: Government of Azerbaijan. 2016. Strategic Roadmap for Development of Telecommunications and Information Technologies in Azerbaijan Republic. Baku

Azerbaijani is focused on supporting the development of the non-oil sector in the country by means of immediate, investment. In financing the submitted investment projects, the Azerbaijan Investment Company participates as a shareholder, and its share in the authorized capital can't exceed the total amount of financing of investment projects. Value added of the ICT sector, which includes publishing, broadcasting, telecommunication, and computer and information services, made up 2.2% of GDP, less than its peer countries with available data and significantly smaller than the European Union and members such as Bulgaria and Romania [1] (Figure 1).

Figure following on the next page

Figure 1: Information and Communication Technology Sector (% of gross domestic product)



Source: EU = European Union, GDP = gross domestic product, ICT = information and communication technology. Source: The State Statistical Committee of the Republic of Azerbaijan (SSC) and Statistical Office of the European Union (Eurostat).

In modern period in our country there is no report about "bulud" ("cloud") and "Processing and saving information" services considered the maintenance direction in IT section, the dynamics of data processing and in the IT sector in our country. As the operator of the AzInTelecom National Data Center (DM) has not published any information about this segment during its 3-year activity, it is difficult to give a concrete idea about the growth rate and future prospects of this sector. For example, the increase in this sector from year to year is unlikely to make any conclusions on which principles and criteria are being formulated in the Republic of Azerbaijan. However, the geographical location of Azerbaijan, cheap and affordable electricity has created a real potential for the creation of a large competitive MES sector. But our goal should be to turn this potential into a real socio-economic advantage for Azerbaijan.

4. CONCLUSION AND RECOMMENDATIONS

The development of digital platforms creates opportunity to rebuild the labor market and changing employment mechanisms. Digitalization of different sectors of Azerbaijani society should be one of the country's development priorities. Digitalization means saving for businesses and speeding up processes, while maintaining transparency and protection for workforce. In order to adapt the labor market to these revolutionary changes, it is important for our state to respond the challenges of the digital age in a correct time. There are several important solutions that can help to avoid problems with the increased impact of the digital economy on the labor market:

- *STEM (Science technology, engineering and math) the application of education systems and the development of the principles of continuous education.* STEM education system has been developed to train technical personnel, including engineering, technology and mathematics, with the application of full-fledged education, including the study of natural sciences. Here the special attention is paid to the development of creativity, as well as critical and systematic thinking to promote adaptation and sustained learning. So, the countries that have succeeded in adapting education infrastructure to new needs will significantly enhance their economic position in the transition to digital economy.

- *Cooperation of employers with the educational and research organizations, as well as with the high-tech companies.* Companies cannot find suitable employees in high technology production projects. That is why, by participating in the development of the educational standards, they can maximize the use of those employees who will be able to get full information about the skills of the employees and the improvement of the education system.
- *Human capital development with investment in private sector.* Using the state tax concessions and other incentives, companies may encourage investments in human capital, including creating high-paying jobs. In this direction, Baku Expo 2025 can be noted. They create important conditions for the injury, exploitation of the new technology sector to human intelligence and the application of the knowledge gained.
- *Supervision of high technology application.* In order to measure the benefits and harms of introducing new technologies, the state should control their influence on the overall labor market.
- *Development of digital economy at state level.* Today when technological innovations in the world penetrate all areas of the economy, there is a need for a new program concept in Azerbaijan. Start-up and SME support for the development and implementation of digital technologies should be expanded, because the most active participants in this sector are business segments.
- *Strong development of the Internet.* The age group from the ages of 16 and 35 is clearly visible among the people who actively use the Internet, and it is proof that a new population group appears and of course it requires a new approach for job formation and job creation in the economy.

As a result of the analysis, the digital phenomenon is an economic activity aimed at the active use of new technologies in all sectors of the economy through the growth of the share of the transaction sector in GDP. Automation will help to reduce the negative effects of this system. In such situations “the digital” frameworks are strategic assets. Its inevitability will lead to the weakening of the digital economy and the country’s economy as a whole. Thus, the provision of the sufficient number of strong digital cadres should be one of the main state priorities. This task should be carried out with the help of a modern, high-quality education system. Digital labor, digital society, digital economies are growing, digital business is expanding, and digital skills are emerging. The digital person will become the main working capital thanks to their digital skills. The employer should manage the geographically distributed project groups through the information technology and move from classical hierarchical to matrix management. In addition, the new employment relationships should be adjusted to prevent social pressure in the labor market legislation. It is necessary to develop a concrete strategy for the development of the digital economy, which is designed to ensure the competitiveness, economic efficiency and employment of the country. Some occupations have become the historical part of the past. In this regard, the sustainable development of our country will depend on each of us with new approaches, new knowledge, new specialties and the ability to learn openly and continuously.

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SMALL AND MEDIUM-SIZED BUSINESS AS KEY PRODUCER OF LOCAL GOODS

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ABSTRACT

A large number of researches are devoted to small and medium business. Nevertheless, in Russia such enterprises play a special role. The state doesn't place emphasis on small and medium business, when it says about development of national economy. In a number of the countries small and medium business is fundamentals of national economy. But in Russia there are absolutely other situation. About 80% of GDP are formed by the large enterprises. As for a share of small business it is only 20% of GDP. According to some experts production of medium-sized enterprises makes lower than 1% of GDP. In article we focus attention that small and medium business is necessary not so much for national economy, but for residents of Russian regions. The influence of small and medium business can be seen, at least on the following channels: 1) increase in employment rate in the region; 2) creation of the comfortable environment for life of the regional population; 3) satisfaction of local demand and specific needs for specialized production and services; 4) development of the regional markets as subjects of SME are responsible for formation of local infrastructure; 5) growth of gross regional product; 6) growth of tax revenues in the regional budget.

Keywords: *small-sized enterprise, medium-sized enterprise, local goods, regional development*

1. INTRODUCTION

Many researches are devoted to importance of small and medium business and its role in the regional development. It's not a secret that large business is a key source of budget incomes (as federal, so often and local budgets). Therefore any state economic policy, as a rule, considers the interests of large business, laying aside the interests of average and small. If we speak about growth of regions welfare, we have a question: for what business it is easier and simpler "to supply" the region with local needs? Most likely, it will be small and medium-sized enterprises. The purpose of the research is the analysis of small and medium business potential and assessment of its contribution to development of Russian regions. Influence of small and medium business needs to be estimated taking into account the importance for ensuring

sustainable development of the region. The paramount value for strengthening of economic capacity of the region has increase in employment rate. The significant role is assigned to small and medium business in providing the comfortable habitat for the population of the region. Besides, the important value has ability of small and medium business to satisfy local demand due to narrow specialization and flexibility. Creation and maintenance in operating state of local infrastructure also belongs to the potential of small and medium business. The effective solution of economic regional problems is made with its opportunity and ability to reproduce resources, to produce so-called "local goods" and to involve them from outside. Because of non-uniform distribution of resources between center and peripheries the regional capacity and the role of small and medium business in creation of the local benefits become relevance. Small and medium business plays especially important role in development of economic capacity of Russian regions. Small and medium business participates as in formation of drivers of the balanced social and economic growth, and in creation of conditions for the optimum competitive environment. Key indicators of its development for the last five years are presented in the Table 1.

Table 1: Key indicators of the sector "small business"

Indicator	2014	2015	2016	2017
Sales, mln. doll*.	401,948.87	321,928.25	408,543.79	458,1928.53
Share of small enterprises in GDP of the Russian Federation, %	13.0	12.5	12.3	12.1
Number of small-sized enterprises, thnd.	1,836.4	2,003.0	2,063.1	2,103.8
Share of small-sized enterprises in the total number of the enterprises, %	37.5	40.9	42.5	44.0
Number of employees in small-sized enterprises, thnd. people	11,480.5	11,683.9	11,695.7	11,744.2
Share of employees in the small-sized enterprises in total number of occupied people, %	16.9	17.2	17.4	17.6

Source: Ministry of Economic Development of the Russian Federation, 2017
***according to the Central Bank of Russia rate for December 31 of the corresponding year. Accessed at: http://www.cbr.ru/currency_base/daily/?date_req=31.12.2015*

The number of small enterprises grows — for 24% in 2017 in comparison with data for the end of 2014. Nevertheless, the share of small business in GDP, on the contrary, falls. As for medium enterprises its share in GDP of the Russian Federation is significantly lower than 1%. The reasons of unsatisfactory dynamics of SME development and closing of small and medium-sized enterprises have system character, however the greatest impact on business is made by tax policy. Increase in number of small-sized enterprises restrains, in particular, regular increase in the property tax. At the same time some growth of number of workers in small business and their share in total number of occupied people, in our opinion, demonstrates strengthening of certain SME subjects. In 2017 the contribution of small business enterprises to GDP has made about 12% that is much lower than indicators in other countries for the same period where the share of small and medium business makes 46–78%. The analysis such countries as the USA, Japan, Great Britain, Germany, China, allows to define the role of small and medium business in national and regional economy. SME allows to solve problems, namely: competition formation; creation of the effective market environment; improvement of service quality; increase in the range of goods; approach of goods and services production to consumers; giving to economy of mobility and flexibility; creation of jobs, decline in unemployment and

improvement of life quality; formation of the middle class; acceleration of scientific and technical progress; service of large business; development of the new markets and so on.

2. LITERARY REVIEW

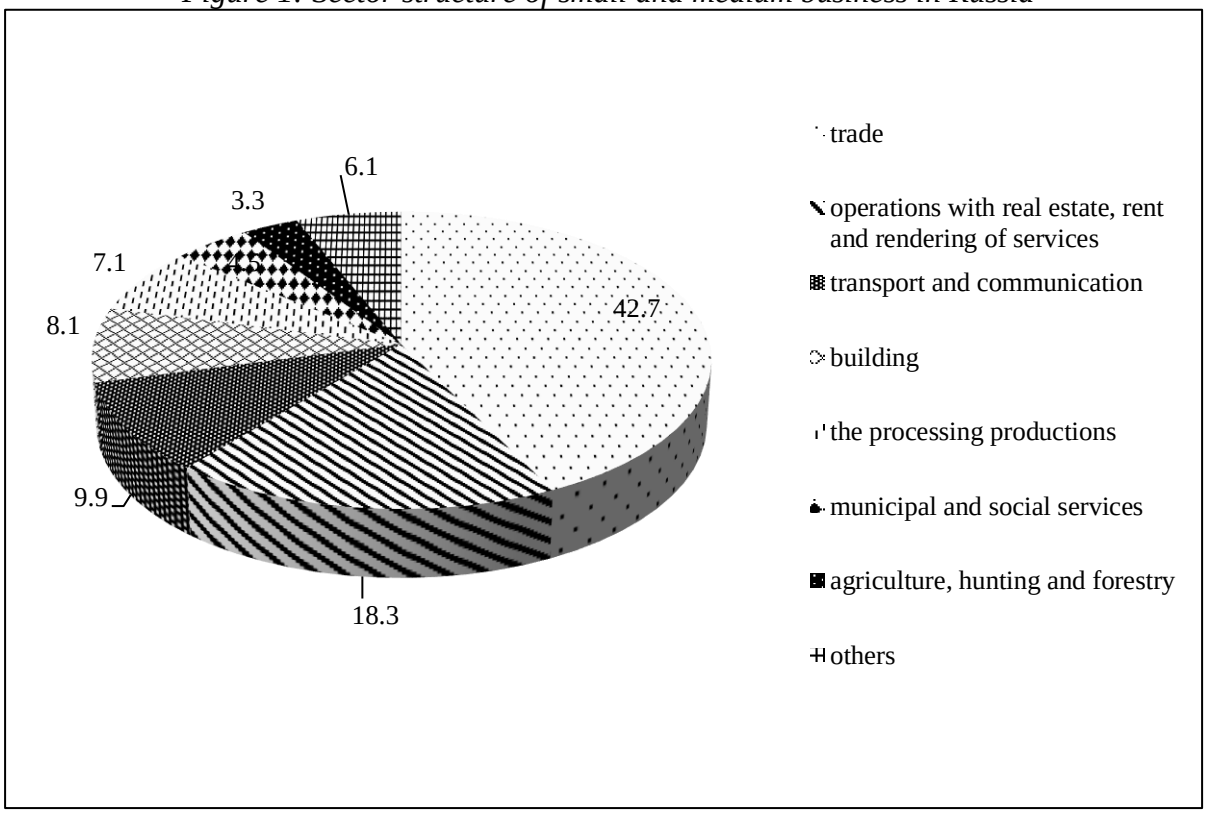
Small and medium business is a subject of many scientific researches around the world. Many scientists pay attention to sources of growth and development of small and medium business. So, for example, group of researchers of the University St. Gallen (Hodgson, G. 2000), studying features of small and medium business in Switzerland, has revealed that small business makes the most significant contribution to creation of the local goods and formation of economic potential. These scientists study factors, positively and negatively influencing the enterprise environment. Among the first they call professional qualities of workers, infrastructure, availability of financial resources and high social responsibility. Among negatively influencing factors they focus attention on the crisis phenomena in the country and the world, inefficient state policy (unreasonable intervention of the state in work of enterprises). In 2011 the group of authors (Jasra et al, 2011) has presented a detailed research of success factors for subjects of small and medium business in national economy of Pakistan. The group of authors defined seven criteria by which it is possible to define success of business and to predict a further vector of development. Authors referred to them financial and technological resources, enterprise skills, state support, marketing strategy, quality of business planning and access to information. Scientists noted that subjects of small and medium business are the main drivers of economy development, and the local goods which they are capable to generate differ in big economic effect. The local goods have been defined as the benefits generated by subjects of small and medium business within the certain territory, the effect of which concentrates in this territory.

The important value in formation of economic capacity of the territory is played by the institutional environment. In this situation the economic capacity of the region can be treated as total synergetic effect which is formed from private economic effect of each small and medium-sized enterprise. Such interpretation of regional economic capacity considered in works of such authors as Coase (2005), Greif (2005), Joskow (2008), Menard (2004), Miller (2014). Authors call as fundamental factors the high administrative barriers, artificial barriers compelled at a stage of entry into sector, limited access to financial and information resources during creation of the local goods and formation of economic potential. Existence of the specified obstacles and need of their overcoming are caused by considerable financial expenses which it is called as transactional costs. According to a number of the Russian scientists (Barkhatov, Pletnev, Campa, 2016) economic capacity of the region consists of set of historically developed, traditional kinds of activity separate the taken economic system (territory). These scientists study specifics of small and medium-sized enterprise activity in separately regions of the world and define key barriers of its development. If we say that food are often local goods, then we should focus our attention on agricultural sector. E. Silova and D. Benz (2015, 2017) study a problem of food security. These authors lift a current problem of contractual chain length in agrarian sector. Repeated rise in price of food turns out to be consequence of contractual relations imperfection. In the agrarian chain there are as representatives of small business (as a rule, these are farmers), and representatives of large business (these are wholesale distributors). Often the last monopolize the market, dictating obviously cut prices to farmers. Not only rise in food product price, but also redistribution of transactional costs of farmers in an excess profit of wholesale distributors is result of such imperfection. Authors called such phenomenon as "a transactional rent". The production efficiency of the local goods is a relevant subject for the countries with the big territory. Besides territories can be qualitatively diverse and have different economic potential. Two features – the huge diverse territory and also low (in comparison with other countries) number of small and medium-sized enterprises, are characteristic of the Russian economy.

3. DATA AND METHODS

The share of small and medium business in the Russian economy is significantly lower, than in other countries. Nevertheless, in Russia there are such sectors where the SME is presented by a share over 60%. It is building, agriculture, information technologies and household services. Let's call such sector as "the local goods". At the Figure 1 the structure of MSE by types of economic activity is shown.

Figure 1: Sector structure of small and medium business in Russia

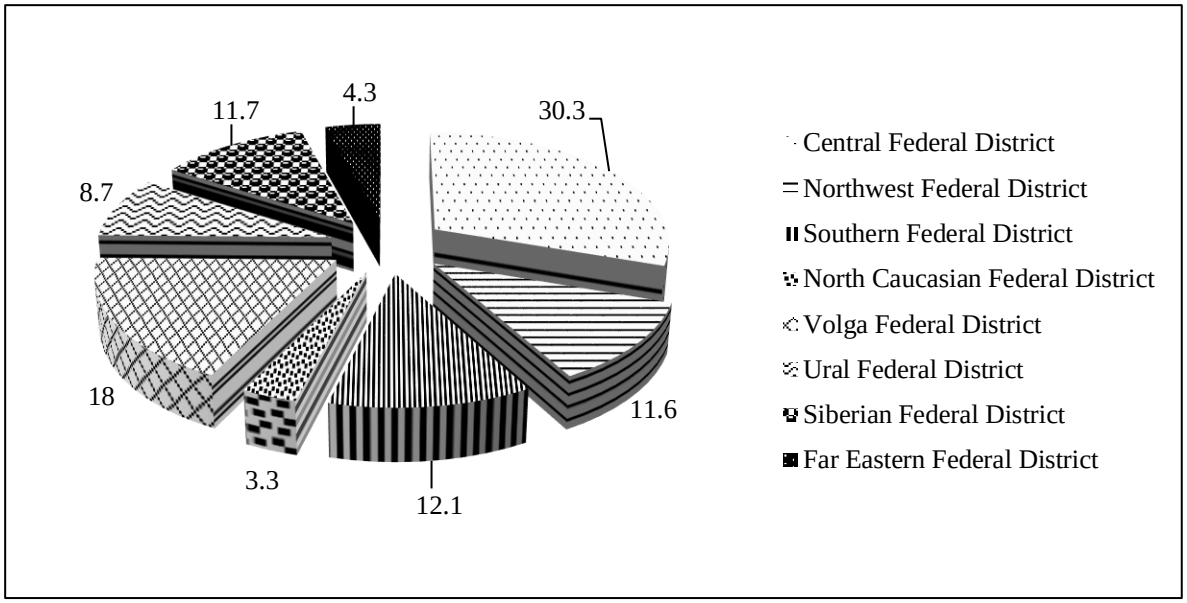


Source: Rosstat, 2017

Small and medium business is unevenly placed in the territory of Russia. Territorial distribution of SME is shown at the Figure 2.

Figure following on the next page

Figure 2: Territorial location of SME



Source: Rosstat, 2017

For definition of SME role in formation of regional economic capacity and creation of the local benefits it is necessary to investigate the quantitative methods of assessment. Despite considerable foreign and domestic experience, the uniform technique of assessment doesn't exist. In foreign practice there are following methods of assessment of territories economic capacity:

1) The Development Report Card for the States, DRC has three blocks: "economic climate for consumer", "economic climate for business", "potential of future development" (Available at: http://cred.org/knowledge_center/research/DRC/).
2) The concept of the territorial capital used by the Organization for Economic Cooperation and Development (OECD) contains complex assessment of assets of various types and origin and a possibility of the analysis and assessment of their interaction (OECD How regions grow, 2009).
3) EU Regional Competitives Index contains 11 blocks of indicators which, in turn, are grouped in factors: groups of basic, effective and innovative factors (Available at: https://ec.europa.eu/jrc/en/publication/eur-scientifi c-and-technical-research-reports/eu-regional-competitiveness-indexrci-2013)

Among the Russian approaches we call the following:

1) Technique of the Ministry of Economic Development of the Russian Federation. It is technique of complex assessment of social and economic development of Russian territorial subjects. This technique includes the analysis of indicators: gross regional product, investments into fixed capital, financial security, etc. (Available at: http://economy.gov.ru/minec/activity/sections/econreg/monprog/doc20131118_21)
2) Rating of Russian regions made by the expert agency "Expert RA". The purpose of a technique is assessment of investment potential of the region (Available at: http://www.raexpert.ru/ratings/regions/concept)
3) The technique of assessment of economic and social situation of Russian regions developed in 2011 in Council for studying of productive forces by request of the Ministry of Economic Development of the Russian Federation (Kirilich, Shpak, 2013). According to this technique the complex is formed of 16 factorial characteristics (basic representative

indicators) which are distributed on four functional blocks - reproduction, innovative infrastructure, investment financially and social potential.

Foreign and domestic techniques have something the general. All of it contain Indicators of natural and resource potential, development of business and regional market, human resources of the region, etc. Despite a large number of indicators, the existing assessment techniques relying, as a rule, on system approach, nevertheless, don't consider a role of small and medium business. Therefore speaking about interrelation of SME and economic capacity of the region, we offer a set of the following indicators. They are shown in the Table 2.

Table 2: Main criteria of formation of regional economic capacity

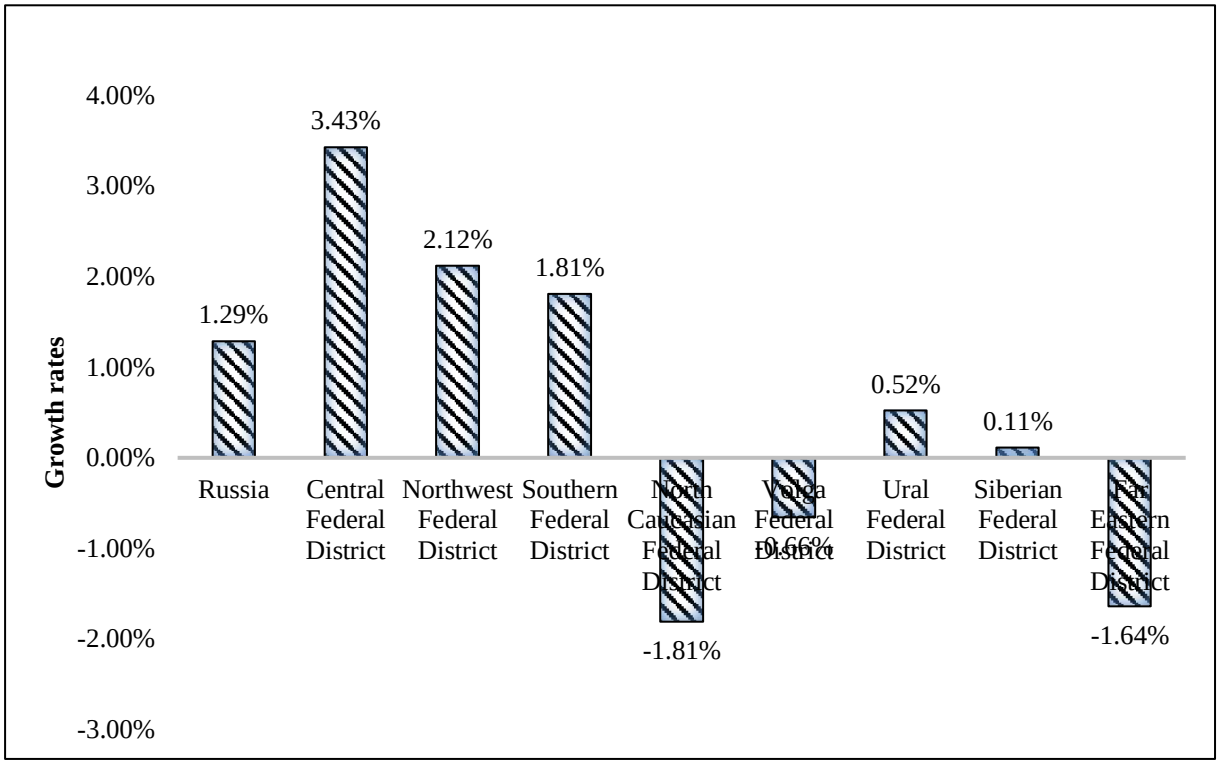
Criteria	Indicators
Social and labor potential (P_{SL})	1. Growth rate of number of employees in small and medium-sized enterprises (SL_1) 2. Growth rate of the salary of employees in small and medium-sized enterprises (SL_2) 3. Share of employees in small and medium-sized enterprises in total economically active population (SL_3) 4. Share of labor costs and social expels of workers in the total amount of expenses of small and medium-sized enterprises (SL_4)
Innovative potential (P_{INN}) (readiness of the small and medium-sized enterprises for innovative development)	1. Growth rate of number of the small and medium-sized innovative enterprises in the region (INN_1) 2. Share of the small and medium-sized innovative enterprises in total of the small and medium-sized enterprises (INN_2) 3. Growth rate of innovative production quantity of small and medium-sized enterprises (INN_3) 4. Share of innovative production of small and medium-sized enterprises in a gross regional product (INN_4)
Investment potential (P_{INV}) (ability of the small and medium-sized enterprises to attraction and use of investments)	1. Growth rate of small and medium-sized enterprises investments (INV_1) 2. Share of investments of small and medium-sized enterprises in the total amount of investments for the region (INV_2) 3. A share of investments of small and medium-sized enterprises of the products sold by them (INV_3) 4. Relation of cumulative profit of small and medium-sized enterprises to the total volume of investments (INV_4)
Financial potential (P_F)	1. Growth rate of cumulative profit of the small and medium-sized enterprises in the region (F_1) 2. Share of the profitable small and medium-sized enterprises in the region (F_2) 3. Growth rate of tax revenues from the small and medium-sized enterprises (F_3) 4. Share of tax revenues from the small and medium-sized enterprises in the total budget revenues of the region (F_4)
Potential production (P_{PR}) (characterizes a condition of business assets)	1. Growth rate of the output of the small and medium-sized enterprises (P_1) 2. Wear of the fixed business assets of the small and medium-sized enterprises (P_2) 3. Growth rate of investments into business assets (updating of business assets) of the small and medium-sized enterprises (P_3) 4. Average profitability of business assets of the small and medium-sized enterprises (P_4)

Source: Authors

4. RESULTS

Many indicators are presented in Table 2. We show some of them. The number of small and medium-sized enterprises in general as for Russia grows every year. We collected regional statistics and calculated the growth rate in regional section. At the Figure 3 the growth rates of number of small and medium-sized enterprises in Russian regions are presented.

Figure 3: Growth rates of number of small and medium-sized enterprises in Russian regions, 2017

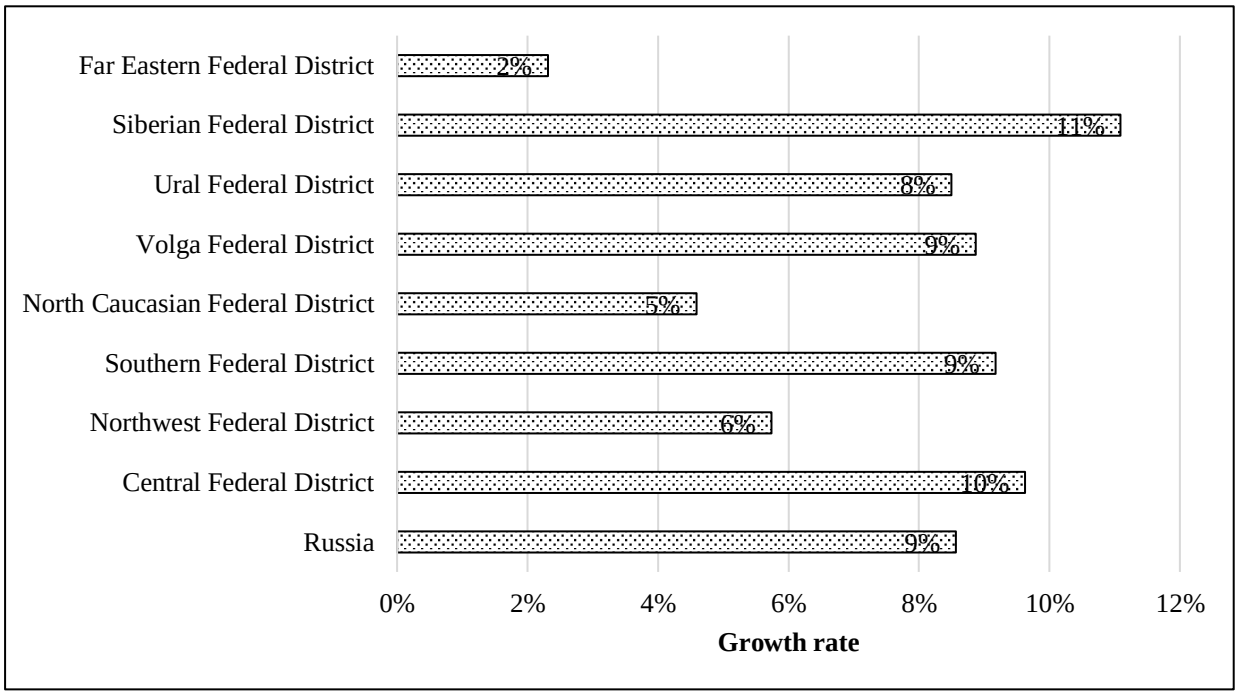


Source: Calculated by Authors with data provided by the First Independent Rating Agency, 2017

We can see that in the majority of Russian regions the number of small and medium-sized enterprises increases. The average growth rate across Russia has made 1.29%. We observe a similar situation concerning the growth rate of number of the workers occupied at such enterprises. It is shown at the Figure 4.

Figure following on the next page

Figure 4: Growth rates of number of the workers occupied at small and medium-sized enterprises in Russian regions, 2017



Source: Calculated by Authors with data provided by the First Independent Rating Agency, 2017

Growth of workers number significantly exceeds growth of enterprises number. It means that the increasing number of the population makes the decision on employment in small and medium business, than in large one. Also financial side of the studied question is positive. We are inhabitants of Chelyabinsk region and we observe growth of the enterprises which make profit, and falling of number of the enterprises which work with losses. It is shown in Table 3.

Table 3: Financial results of SME activity in Chelyabinsk region, 2015 – 2017

Indicator	2015	2016	2017
Sum of profit, mln. rubles	70,327	132,778	208,043
Share of the profitable enterprises, %	67.9	67.3	69.0
Sum of losses, mln. rubles	44,583	46,150	29,398
Share of the unprofitable enterprises, %	32.1	32.7	31.0

Source: Calculated by Authors with data provided by the First Independent Rating Agency, 2017

From the Table 3 we can see that the profit quanity aggregated by small and medium-sized enterprises in Chelyabinsk region significantly grows at the period 2015 - 2017. It also demonstrates that small and medium business grows and develops in our region.

5. CONCLUSION

We've come to a conclusion that small and medium business is necessary not so much for national economy, how many for regions of Russia. The fact that there is no systematized statistics indirectly demonstrates it also. Russian State Committee of Statistics systemically accumulates statistics about large business. If it is about employment of the population, taxes, financial results – all statistics is devoted to large business.

Surveys of businessmen conducted by official services often are held among the enterprises of large business. Small and medium business often stands aside. Therefore it is extremely difficult to analyze results of small and medium business in view of simple lack of statistics. Earlier our colleagues have conducted the large research devoted to success factors of small and medium business. These scientists have almost manually collected information obout small and medium-sized enterprises in Chelyabinsk region. They held meetings with heads of the enterprises and questioned several hundreds of representatives of small and medium business in the region. On the basis of our research and the research of our colleagues we can make following conclusion. Small and medium business plays a special role for regions. Taxes to the Federal budget from small and medium business are extremely insignificant. Small and medium business plays a special role for regions. Taxes to the Federal budget from small and medium business are extremely insignificant. Small and medium business creates the local goods. Usually in Russian regions small and medium business is presented by the enterprises of transport, agricultural, building sectors, household services. Nevertheless, small and medium-sized enterprises creates considerable quantity of jobs. About a quarter of Russian population are engaged in such business. Besides, small and medium business is extremely important as service elements for large business. Often large business is a customer of the goods made by small business. It is often observed in the processing productions, including the building sphere. Small and medium business plays not the last role for national economy. However, it has no special preferences. Many tax and other benefits in practice aren't always implemented. Nevertheless, the number of the enterprises grows, and the volume of the created production also grows. So, it is impossible to exclude a role of such enterprises.

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SALARY AS ONE OF THE BASIC COMPONENTS OF LABOUR COSTS IN TERRITORIAL SELF-GOVERNMENT UNITS

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ABSTRACT

The concept of labour costs was introduced to Polish literature in 1962 by H. Halama, who defined them as „the total costs that an enterprise incurs in relation to the employment of office and manual workers"[1]. J. Kordaszewski was another Polish economist, who initiated research into employment costs in the early 1970s. He argued that „labour costs are the total expenses that an enterprise contributes towards its employees, their families and apprentices"[2]. K. Górka and S. Chomątowski, on the other hand, understand labour costs as total financial outlays and emplyment-related costs in an economic entity. Compensation costs are one of the basic components of labor costs. Compensation has four basic functions, which include: the income function, the incentive function of compensation, the social function of compensation, the cost function of compensation.

Keywords: *Labor cost, salar, function of compensation*

1. INTRODUCTION

Labor costs are defined by both international and national organizations. Eurostat defines labor costs as an employer's total costs related to maintaining employees, such as gross employee compensation (including social security contributions), vocational training costs, and other other expenditure, for example, recruitment costs, spending on working clothes and employment taxes regarded as labour costs. Statistics Poland, the country's central statistical office, identifies labor costs as the sum of gross employee compensation and other expenditure, including tax and contributions to social security, the Labor Fund, the Guaranteed Employee Benefits Fund, incurred by the employer in order to recruit, maintain, retrain and develop staff, regardless of whether they are deducted from gross compensation or calculated as a percentage of compensation. Thus, according to the definition of Statistics Poland, data related to employment costs included in the statistics comprise the costs incurred by the employer to recruit, use, maintain and develop labor resources. The breakdown of labor costs for statistical purposes distinguishes three categories:

1. costs of employee compensation and benefits:
   - payroll and supplemental payroll,
   - agency- and commission-based compensation,
   - fees,
   - bonuses from an enterprise's bonus fund,
   - payments not included in payroll.

2. Costs of indirect employee benefits:
   - social security,
   - social benefits,
   - company health care costs.

[1] H. Halama, *Koszty pracy ludzkiej* w *przedsiębiorstwie przemysłowym,* [in:] *Człowiek w przedsiębiorstwie,* PWE, Warszawa 1962.
[2] Z. Miśkiewicz, *Koszty pracy w rachunku ekonomicznym produkcji maszynowej*, JOPM, Warszawa 1976.

3. Personnel policy costs:
   - recruitment costs,
   - employee training and development,
   - maintaining the personnel department,
   - employee transport.

The first study on labor cost in Poland was carried out by the Central Statistical Office in 1993. It was incomplete because it covered only manufacturing and construction. Sunsequently, however, other industries of the national economy were included. In 1996, only membership-based organizations, international organizations and households employing workers were excluded from the study. Poland's integration with the European Union caused that labor cost studies were carried out in compliance with the recommendations of the Eurostat. Since 1997, they have been conducted based on the representative method, every four years using the F-02 form. While labor costs were not addressed in Polish balance sheet law, they were regulated in IAS 19 „Employee benefits". Instead of the concept of 'labor costs', IAS 19 applied the term 'employee benefits'. IAS 19 breaks down employee benefits into four groups:

1. Short-term benefits:
   - wages and salaries, social security contributions,
   - paid vacation and sick leave,
   - non-monetary benefits for current employees,
   - profit-sharing and bonusem.

2. Post-employment benefits:
   - retirement benefits,
   - other benefits.

3. Other long-term benefits:
   - long-term paid leave,
   - jubilee benefits,
   - long-termn invalidity allowances.

4. Termination benefits.

The summary of all the definitions indicates that labor costs include:

- Work compensation,
- Paid sick leave,
- Paid vacatio leave,
- Social security,
- Health insurance,
- Labour Fund contributions,
- Guaranteed Employee Benefits Fund contributions,
- Income tax,
- Allowances,
- Company Social Benefits Fund contributions,
- contributions to the State Fund for Rehabilitation of Disabled Persons,
- Employee recruitment costs,
- Training,
- Spending on working clothes,

- Medical check-ups,
- Preventive meals,
- Retirement benefits,
- Business travel expenses,
- Costs of transport and accommodation of employees,
- Profit-sahring.

2. FUNCTIONS OF COMPENSATION

Compensation costs are one of the basic components of labor costs. Compensation has four basic functions, which include:

- the income function of compensation indicates that compensation is the basic source of income for employees and their families. Earning compenstion, an employee can provide livelihood for the family, therefore he is interested in earning as high compensation as possible. Insufficiently remunerated, employees will leave work in order to seek a better paid job. In addition, the level of pay has a significant impact both on an emplyee's work-related and social status, hence the saying „as the pay, so the work".
- the incentive function of compensation is the equivalent and reward for the work done. In any organization, the incentive function is very important because pay should encourage personal development, which will – to a considerable degree – translate into organizational growth. Education institutions, for example, draw up regulations for incentive bonuses for teachers.
- the social function of compensation involves creating good work climate and prevents conflict. Ensuring the adequate level of pay has social significance and is manifested as a desire to prevent income inequalities, which could, for example, lead to social exclusion and a rise in poverty.
- the cost function of compensation is particulalry important for the employer, but it is also of significance for the employee. The employer sees pay as a cost and, as a result, is interested in maximizing the return on costs incurred, while the employee treats pay as income that covers the costs of living for himself and his family.

3. LEGAL ACTS REGULATING COMPENSATION

The Labor Code is the primary legal act regulating compensation related issues. Article 13 stipulates that every employee has the right to fair compensation for work, which is determined by labor law provisions and the government policy setting the minimum pay. The minimum pay for the work of a full-time employee cannot be lower in 2020 than PLN 2,600.

Year	PLN	Year	PLN
2004	824	2012	1,500
2005	849	2013	1,600
2006	899.1	2014	1,680
2007	936	2015	1,750
2008	1,136	2016	1,850
2009	1,276	2017	2,000
2010	1,317	2018	2,010
2011	1,386	2019	2,250
		2020	2,600

Table 1: Minimum pay in Poland from 2004 to 2020 year

Minimum pay means the lowest pay a full-time employee can be paid for a full month. In a situation when an employee's compensation would be lower in a given month, it must be supplemented to ensure that the employee receives the right amount. If the employee is employed on a part-time basis, minimum pay is calculated in an amount proportional to the number of working hours required from the employee in a given month, based on minimum

pay. The issues relating to compensation, its calculation method and its components are set out in the legal regulations of entities conducting economic activity. This can be exemplified by a collective pay agreement, which is negotiated and concluded by the employer and a trade union organization operating in the enterprise. The provisions of the collective agreement embrace all the workers hired by the employer, unless they are excluded from the provisions of such an agreement. The Labor Code, however, contains only a subjective exclusion. Art. 239 § 3 stipulates that the collective pay agreement is not concluded for:

- members of the civil service corps,
- employees of government offices employed based on appointment and nomination,
- local government employees employed based on selection, appointment and nomination in:
  - marshal's offices,
  - poviat starosty offices,
  - municipal offices,
  - offices of the unions of self-government units,
  - offices of administrative units of territorial self-government units,
- judges and prosecutors.

Another example is the Compensation Regulations, which are drawn up by the employer hiring a minimum of 50 workers who not subject to the collective agreement. The Regulations primarily specify:

- the type of the compensation system applied by a given employer (e.g. temporary, piece- or commission-based),
- basic rates (e.g. a payroll table which categorised groups of employees),
- types, amounts and rules for the payment of other components of compensation (including supplements to basic pay, bonuses, etc.),
- pay rise rules,
- rules for non-pay benefits,
- bonus rules.

The principles for drawing up remuneration rules are set out in the Labor Code. Pursuant to Art. 772 §1, „an employer who hires at least 50 employees not covered by the collective labour agreement or a multi-employer collective labour agreement fixes the conditions of remuneration for work in the rules relating to remuneration." Accordingly, organizations with 50 or more employees are obliged to have such a document. The employer who does not have to specify the remuneration rules is nonetheless obliged to inform employees about the pay practice that he adopted. Thus, in each case, the supreme legal act regulating remuneration for work is the Labor Code. For example, in the case of employees employed in education institutions (budgetary entities), the legal regulations overriding the Labor Code will be universally binding legal acts, collective agreements and applicable remuneration regulations. The most important act on the remuneration of teachers is the Teachers' Charter, which is a legal act overriding the Labor Code and it regulates the rights and obligations imposed on teachers. The Charter stipulates:

- what requirements and qualifications a teacher should have hold a teaching position,
- how an employment relationship is established, amended and terminated
- how jubilee bonuses and performance-related bonusem are awarded,
- retirement and special entitlements, vacation,
- disciplinary responsibility,
- professional advancement and the rules and regulations for obtaining each level of professional advancement.

4.ELEMENTS OF THE REMUNERATION SYSTEM

The remuneration system consists of:

- basic salary,
- salary supplements,
- bonuses,
- jubilee benefits,
- benefits in kind.

The most common remunaretion systems include time-, piecework- and commission-based systems.

- the time-based system: the amount of remuneration depends on the number of hours worked in a given month. The application of the time-based system is particularly suitable when working time can be recorded and work outcomes cannot be measured. The example is the remuneration system for office workers or teachers. This system is insufficiently motivating for employees.
- The piecework-based system: the amount of remuneration depends on the amount of work done and the piecework rate, i.e. the monetary rate per unit of work. The amount of work can be measured by the number of products made, not by the time worked. The piecework-based system can be used e.g. in manufacturing. It creates competitive atmosphere, while at the same time motivating employees to work more efficiently. This system also has disadvantages, for example, to increa the number of products mande, an employee may produce inferior quality products. In addition, pursuit of quantity in manufacturing can cause excessive effort and distraction on the side of the employee, resulting in his fatigue and making him more acccident-prone. Currently, piecework-based systems are used less and less frequently, although they are still in operation in large manufacturing plants.
- the commission-based system: the amount of remuneration depends on the quantity and quality of work performed. The employer sets the percentage rate (commission) for the work performed. The commission-based system is usually used for employees employed as sales representatives or insurance agents.

Example ad.1:
The employee is paid an hourly rate of PLN 30 / hour. In May 2020, the employee rendered work for 21 days, 8 hours / day, i.e. 168 hours. Therefore, he is paid the remuneration of PLN 5,040.

Example ad. 2:
The employee has a work standard of 1,000 items of a product per month. The rate per item was set at 3 PLN. Therefore, if he makes 900 units, he will receive PLN 2,700, and if He makes 1,100 units, He will be paid PLN 3,300.

Example ad. 3:
The employee is entitled to a monthly remuneration of PLN 2,000 + a 5% commission on each concluded contract.

5. FORMS OF EMPLOYMENT

An employment contract is the most common form of employment. This is enforced by labor law provisions, which aim to identify the highest possibile number of employment relationships as employment contracts and, as a result, provide employees with adequate legal protection. The employment contract is a bilateral legal act. As a result of its conclusion, the employee undertakes to perform a specific type of work for the employer under his supervision at the

place and time designated by the employer, while the employer undertakes to employ the employee for remuneration. Types of employment contracts:

- Contracts concluded for an indefinite period of time,
- Contracts for a definite period of time:
- for not more than 33 months,
- for a trial period,
- for the time of the completion of a specified task,
- for employee substitution.

In practice, however, the pursuit of additional benefits causes that, instead of an employment contract, the following forms tend to be selected:

- temporary work,
- a commission contract,
- a works contract,
- home work under contract
- a management contract,
- self-employment,
- copyright agreements.

6. COMPONENTS OF THE REMUNERATION OF EMPLOYEES HIRED UNDER THE EMPLOYEMNT CONTRACT

The basic component of the remuneration of employees hired under the employment contract is the basic salary, which can be determined as:

- a fixed monthly amount,
- a fixed hourly rate,
- variable remuneration.

In the case of entities in the public finance sector, the basic salary is increased by salary supplements. Salary supplements can be divided into two main groups:

a) Universal supplements – they must be paid by each employer if particular situations specified in legal provisions arise.
b) Non-universal supplements – the obligation to pay them is stipulated in the provisions concerning specific professional groups, and not every entity in an employer's capacity is obliged to pay them.

Universal supplements include:

1. Overtime supplements
   An employee is entitled to the basic salary and the salary supplement for overtime work. The supplement for overtime work is paid in the amount of 100% or 50% of the basic remuneration. An employee who does overtime at night, on Sundays and public holidays that are not working days for the employee or on a non-working day granted to the employee in exchange for work on a Sunday or holiday may be entitled to a higher supplement. The supplement of 100% is also granted after the weekly working time is exceeded. This can only happen if work is carried out on the day when the employee was not to provide work under the adopted working time schedule. Such work, not compensated with free time during the settlement period, causes the average weekly working time to be exceeded. The lower supplement of 50% can be granted to an employee who does overtime at any other time.

2. A night shift supplement

An employee who performs work at night is entitled to additional pay for each hour of work at night in the amount of 20% of the hourly rate resulting from the minimum remuneration for work in a given year. The rates of the night shift supplement in 2020 are presented in the table below.

Month	Number of days	Amount in PLN
January	2600 / 168 x 20%	3.10
February	2600 / 160 x 20%	3.25
March	2600 / 176 x 20%	2.95
April	2600 / 168 x 20%	3.10
May	2600 / 160 x 20%	3.25
June	2600 / 168 x 20%	3.10
July	2600 / 184 x 20%	2.83
August	2600 / 160 x 20%	3.25
September	2600 / 176 x 20%	2.95
October	2600 / 176 x 20%	2.95
November	2600 / 160 x 20%	3.25
December	2600 / 168 x 20%	3.10

Tabele 2: The rates of the night shift supplement in 2020

3. Compensatory supplement

   Pursuant to the Labour Code, the compensatory supplement is granted in three main cases. The first one regulates the situation of pregnant and breast-feeding women. They are under special protection. Accordingly, the employee is often transferred to a different position, assigned other duties or has her working time reduced. However, a different position may be associated with lower pay. This calls for Art. 179. §4. „In the event that a change in working conditions in the previous position, reduced working time or an employee's transfer to another position causes a reduction in remuneration, the employee shall be entitled to a compensatory supplement". Under the Labor Code, the compensatory supplement is also granted to employees who are diagnosed with occupational disease symptoms. *This is stipulated in Art. 230: „§1. If an employee finds symptoms indicating an occupational disease, the employer is obliged, on the basis of a medical certificate, within a period and for a period specified in that judgment, to transfer the employee to another job that does not expose him to the factor that caused these symptoms. § 2. If the transfer to another position results in a reduction of remuneration, the employee is entitled to a supplementary bonus for a period not exceeding 6 months."* The next article also regulates the cases when an occupational disease actually developed and the inability to work as a result of an accident at work occurs. Art. 231 stipulates that „if an employee has a doctor's certificate stating that the employee is not able to perform the current work as a result of an accident at work or an occupational disease, but is not incapable of performing work in the meaning of the provisions on retirement pensions and pensions from the Social Insurance Fund, then the employer must transfer the employee to an appropriate position. The provision of Art. 230 § 2 applies accordingly."[3]

Non-universal supplements include:

1. Special duty supplement

   The special duty supplement is intended for workers employed in independent positions. The amount of the special duty supplement, e.g. for the chief financial officer, depends on

[3] https://www.praca.pl/poradniki/rynek-pracy/dodatek-wyrownawczy-co-to-jest-i-kiedy-przysluguje_pr-2755.html 3.01.2020

the number of depatments in the entity and the number of teaching posts in a given institution. The decision to grant a given amount of remuneration to a particular employee is made by the manager. On the other hand, the list of positions and rates of basic remuneration and special duty supplements, together with detailed qualification requirements for the categories of the basic salary, despite the fact that they are stipulated in the 15 May 2018 Regulation of the Council of Minister on the remuneration of local government employees, they are actually determined at the level of the governing body and constitute an appendix to the remuneration regulations.

2. The length-of-service supplement
   Local government employees are entitled to the length-of-service supplement after 5 years in the amount of 1% for each year of work and up to 20% of the basic salary. The supplement is payable for days for which the employee receives remuneration as well as for days of absence from work due to illness or care for a sick family member.

3. The supplement for work in harmful conditions
   The supplement for work in harmful conditions is not an obligatory benefit. This means that the employer has no statutory obligation to pay it to employees; he can do it only on a voluntary basis. Whether the supplement is granted at a given position for performing a particular job should be regulated by company regulations. An appropriate provision may also be included in the employment contract. The definition of harmful working conditions is provided by the Regulation of the Minister of Labor and Social Policy of 26 September 1997 on general health and safety regulations. The regulations specify how an employer should protect employees against harmful factors. This may involve protective clothing or the adequate preparation of a work station. An example would be paragraph 15 item 2: „In the work rooms where there are factors harmful to health (high temperature, noise, vibrations, radiation, gases, dusts, steam, etc.) technical solutions should be applied to prevent these factors from getting into other work rooms as well as welfare space."

Thus, the legislator listed several examples of factors harmful to health in the regulation. However, these are only examples and the list is open. Work in harmful conditions will also involve, for example, the work where the employee has to interact with harmful biological agents. The supplement for work in harmful conditions may be a temporary or periodic benefit. The rate of the supplement is usually determined as fixe amount, less often as a percentage of the lowest salary, but it depends on the employer's decision. Another component of the remuneration of self-government employees is the bonus. The rules for remuneration and bonuses, in addition to the Act on self-government employees, are laid out in the Regulations on the Remuneration of Self-Government Employees, which must be agreed on with trade union organizations. The remuneration regulations specify the amount of the bonus, which currently amounts to 20% of the basic salary. Inorder to receive the bonus, an employee has to meet certain conditions stipulated in the regulations, such as:

- duties resulting from his job discription must be performed in a diligent and timely manner,
- resources must be taken care of,
- initiative and an active attitude must be adopted, etc.

Self-government employees are also entitled to the jubilee benefit, which is paid in percentage terms and depends on the lenth of service and the remuneration. For the first time the jubilee benefit is paid after 20 years of work. Further benefits are paid every five years. The percentage rates are presented in the table below.

Length of service	Percentage of the monthly salary
20 years	75 %
25 years	100 %
30 years	150 %
35 years	200 %
40 years	300 %
45 years	400%

Tabele 3: Jubilee benfits in percentage terms and in the lenth of service

The addition of the basic salary and the supllements results in gross remuneration. Gross remuneration is the basis for calculating social security contributions. If an employee is hired based on an employment contract, the employer has to calculate and pay social security contributions financed by both the employer and the employee.

	employee	employer	total social contribution
retirement	9.76%	9.76%	19.52%
invalidity	1.50%	6.50%	8%
sick leave	2.45%		2.45%
accident		proportional to the number of employees and accidents in a company	
Labour Fund		2.45%	2.45%
Guaranteed Employee Benefits Fund		0.10%	0.10%
Health care	9%		9%

Table 4: Social contributions

The employee and the employer jointly and severally pay pension insurance contributions. Similarly, disability insurance contributions are the employee's and employer's obligation. The employee contributes 1.5%, while the employer – 6.5%. Heath insurance is financed only by the employee. The accident insurance contribution varies among budgetary entities. Its amount depends on the number of employees and accidents at work. It is amended every year at the beginning of April upon submission of IWA information to the Social Insurance Institution. On this basis, the Social Security Institution sets a separate rate for each entity. The IWA document discloses such information as the number of insurees and the data on accidents at work. For example, in one of the budgetary entities the rate was 0.84% to March 2019, while starting from April 1, 2019, it is 0.94%. Another component of social insurance contributions financed by the employer is the labor fund. Its rate is fixed and specified by the Budget Act. The employer does not have to pay it for all employees, as there are some exceptions concnring the exemptions from paying this contribution. These exceptions include employees who:

- are on parental leave,
- receive maternity allowance,
- are more than 55 years of age (women) or 60 years of age (men),

- return from parental, maternity, parental leave – dismissed up to 36 months, starting from the first day of the month after returning from leave,
- are under 30 years of age and have been referred to work by local labor offices
- who have turned 50 and in the period of 30 days before employment remained registered as unemployed in the poviat labor office (12-month exemption).

As regards health insurance, the payer, i.e. the employer, is obliged to:
- calculate the health insurance contribution, currently at 9%,
- deduct the contribution from the employee's income,
- reduce the income tax advance by the amount of the health insurance contribution, currently at 7.75%,
- pay the contribution to the Social Security Institution in a timely manner.

7. TAX DEDUCTIBLE COSTS FOR THE EMPLOYEE

In October 2019, the amount of tax deductible costs for employees employed under an employment contract was changed. Tax deductible costs depend on whether the employee is employed in the place of residence and whether he is employed in one or several full-time positions. Until 30 September 2019, tax deductible costs were as follows:
1. an employee employed in on full-time position in the place of residence – PLN 111.25
2. an employee employed in on full-time position outside the place of residence – PLN 139.06
3. an employee employed in several full-time positions in the place of residence – no more than 2002.05
4. an employee employed in several full-time positions outside the place of residence – no more than 2502.56.

As from 1 October 2019, tax deductible costs are as follows:
1. an employee employed in a full-time position in the place of residence – PLN 250
2. an employee employed in a full-time position outside the place of residence – PLN 300.
3. an employee employed in several full-time positions in the place of residence – no more than PLN 4,500
4. an employee employed in several full-time position outside the place of residence – no more than PLN 5,400.

There are exceptions, e.g. when deducting tax deductible costs do not apply in such cases as:
- an employee is on unpaid leave for a whole month,
- an employee is on sick leave for a whole month and receives a sickness benefit (paid by the Social Security Institution),
- an employee receives a maternity allowance for a whole month,
- an employee performs a separate task for the employer, for which he will receive payment in addition to remuneration. Then the costs are included in the basic salary and omitted in the additional compensation in order to avoid doubling the costs in the same month and the same procedure applies to the tax credit.

8. COMPONENTS OF REMUNERATION FOR A COMMISSION CONTRACT

The employment relationship and the commission contract are contracts under which services are rendered and worki s performed. Although the same services may be provided on the basis of the employment contract and the commission contract, there are a few fundamental differences between these two forms of employment.

EMPLOYMENT CONTRACT	COMMISSION CONTRACT
Subordination in relation to work performed	Possibility of performing work in a independent manner
Work performed in person	Possibility of performing work in a independent manner
Work performed in the place and at the time specified by the employer	Possibility of determining when and where is performed

Table 5: Few fundamental differences between two forms of employment

The analysis of the employer's burden of social security contributions for the commission contract allows for the distinction of:

- a commission contract with paid social insurance
- a commission contract with a student, up to 26 years of age
- a commission contract without social security

If the employer hires an employee who is not employed in another entity and thus no social security contributions are paid on his or her behalf, the employer is obliged to charge social security contributions in the amount equal to the contributions granted by the employment contract. This situation also occurs in the case of additional employment of an entity's own employee. In this case, social security contributions are also to be paid. In the situation when the employer hires a student who is under 26 years of age, he is not obliged to pay social security contributions. A similar situation occurs when an employee who is hired is employed by another employer. The conditio, however, is the minimum wage and social security contributions paid accordingly. Here, the employer pays only health insurance contributions. The commission contract is alo connected with higher tax deductible costs, which, in this case, amount to 20% of remuneration.

9. BURDEN FOR THE EMPLOYER IN THE CASE OF THE WORKS CONTRACT

A works contract is an attractive form of employment because:

- no social security contributions are paid on this contract, the exception is the employment of an entity's own employee,
- a minimum tax deductible cost of 20% is granted, regardless of the expenses incurred by the employee.

The works contract specifies only the terms under which the creator will perform the work and the date on which he will transfer the copyright to the work done. Remuneration is paid for copyright. Industries that are entitled to 50% of tax deductible costs[4] comprise:

- creative activity in the field of architecture, interior architecture, landscape architecture, construction engineering, urban planning, literature, visual arts, industrial design, music, photography, audio and audiovisual creativity, computer programs, computer games, theater, costume design, stage design, direction, choreography , artistic violin making, folk art and journalism;
- artistic activity in the field of acting, stage, dance and circus as well as conducting, vocal and instrumental arts;
- audio and audiovisual production;
- journalism;
- museum activity in the field of exhibition, science, popularization, education and publishing;

[4] https://www.pit.pl/koszty-uzyskania-przychodu-pit/ 3.01.2020

- conservation activities;
- research and development, scientific and teaching activity, as well as teaching conducted at university.

In addition to the increased amount of tax deductible costs, the changes were also introduced in the income tax rate. The legislator reduced the first tax threshold from 18% to 17%. Due to the fact that the change was implemented during the tax year, a tax rate of 17.75% was introduced into the tax return.

9.1. Income tax rate until 30 September 2019

Income tax rate until 30/09/2019:
Up to 85,528 - 18% minus the tax-reducing amount of 556,02
Over 85,528 - 14,839.02 + 32% on the surplus over 85,528.

Another component that must be included in employee remuneration and when income tax is calculated is the tax-free allowance. The tax-free allowance is the statutory part of income on which taxpayers do not have to pay personal income tax. Importantly, even if it is not exceeded, the taxpayer is not exempt from the obligation to file a tax return for a given year. In 2018, the tax-free allowance was PLN 6,600.00, in 2019 it increased to PLN 8,000.00. Income up to PLN 8,000.00 means that the tax-free allowance is PLN 1 440.00 (PLN 8,000.00 x 18%*). Income ranging from PLN 8,000.00 to PLN 13,000.00 means that the tax-free allowance is PLN 883.89. Income ranging from PLN 13,001.00 to PLN 85,528.00 means that the tax-free allowance is PLN 556.02.

As from 1 October 2019, this was amended. Accordingly:
Income up to PLN 6,601.49 zł, means that the tax-free allowance is PLN 1,188.00. Income ranging from PLN 6,601.50 to PLN 11,000.49 means that the tax-free allowance is calculated with the following formula:
1188 – [631.98x (income – 6 601,50)/4400] from 1188 to 556.02

Income ranging from PLN 11,000.50 to PLN 85,528.00 means that the tax-free allowance is PLN 556.02;

Income ranging from PLN 85.528,50 to PLN 127,000.00 means that the tax-free allowance is calculated with the following formula:

556,02 – [556,02 x (income - 85528)/41 472] from 556.02 to 0

Income from 127,000.50 means that the tax-free allowance is not granted.

10. COST OF REMUNERATION AND SICK LEAVE

When concluding an employment contract and hiring employees, the employer, in addition to remuneration for work performed, also incurs costs related to, for example, an employee's inability to work due to illness or care for a sick family member, the so-called sickness benefit. An employee who is unable to work due to illness is entitled to sickness benefits including:

- sick pay, for 33 days (or 14 days) in total in a calendar year,
- sickness benefit, from the 34th day (or 15th day) of illness for persons who have already turned 50. The sickness benefit is paid by the Social Security Institution.

Before sickness insurance becomes effective, the employee must wait for the prescribed period of 30 days of uninterrupted sickness insurance. The following people are entitled to the sickness benefis from the first day of sickness insurance:

1) school or university graduates or people who finished the doctoral school, who were covered by sickness insurance or entered sickness insurance within 90 days from the date of graduation, or obtaining a diploma, or completing doctoral education;
2) if inability to work was caused by an accident on the way to or from work;
3) people who are compulsorily insured and have at least a 10-year period of compulsory sickness insurance;
4) parliament members and senators who have taken out sickness insurance within 90 days of completing their term of office.

Sick pay for the time of inability to work is granted:

- in the amount of 80% of the salary, if inability to work was caused by illness or isolation in connection with an infectious disease, even if the insured person was in hospital;
- in the amount of 100% of the salary, if inability to work occurs during pregnancy, has arisen as a result of an accident on the way to or from work, has arisen as a result of undergoing compulsory medical examinations of candidates for cell, tissue and organ donors, and as a consequence of cell and organ removal; [5]

Temporary inability to work due to illness is confirmed by certificates issued on a special form. Until December 1, 2018, the form was paper-based, currently doctors issue E-ZLA forms in the electronic system e_PUE ZUS. This method is more convenient for the employee, who does not have to go to the workplace in order to submit the form, while the employer or his payroll/HR specialist has the obligation to print the form out and verify its content.

11. CONCLUSION

11.1. Labour costs in Poland compared to the European Union

Eurostat data show that in 2017 unit labor costs in Poland amounted to EUR 9.4 per hour, while the EU average stood at EUR 26.8. In the EU member states, they ranged from EUR 4.9 to EUR 42.6. The data show significant discrepancies between particular EU countries. Poland belongs to a group of countries with relatively low labor costs. Bulgaria (EUR 4.9), Romania (EUR 6.3), Lithuania (EUR 8), Latvia (EUR 8.1), Hungary (EUR 9.1) and Poland (EUR 9.4) had the lowest labour costs in the EU, whereas Denmark (EUR 42.5), Belgium (EUR 39.6), Sweden (EUR 38.3), and Luxembourg (EUR 37.6) were among the countries with the highest labour costs. In 2017, remuneration costs increased by 2.4% throughout the European Union, while non-remuneration costs increased by 2.1% compared to the previous year. In terms of how dynamic the increase in remuneration costs was, Romania ranked first (17.9%). As regards non-remuneration costs, the highest growth dynamics were in Romania (17.7%) and Bulgaria (13.3%). A relatively high growth rate of this indicator also occurred in Poland (6%). In turn, the largest decrease was reported in Luxembourg (-7.8%) and Hungary (-5.1%). According to Eurostat, the cost of hiring a worker in Poland is one of the lowest in the European Union. In terms of new investments and employment, this is a positive phenomenon. Low labor costs are associated with relatively low pay in our country. Notably, labor costs should be related to labor productivity. In Poland, salaries are rising more slowly than labor productivity. According to Eurostat data, the productivity of a worker employed in Poland accounts for about 70% of that of a German worker. On the other hand, employment costs, in particular remuneration costs, are more than three times as low in Poland as in Germany.

[5] Labour Code, Art. 92 Journal of Laws 2018 item 1076

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ADAPTATION RESOURCES FOR CENTRAL ASIAN MIGRANTS IN THE CONTEXT OF ACADEMIC MOBILITY

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ABSTRACT

The formation of the international educational space and the market of educational services, the trend of globalization and internationalization of the education system, the need to prepare university graduates to work in a multicultural environment and transnational organizations are the impetus for the development of academic mobility among students. In the context of academic mobility, providing the student with the opportunity to gain access to recognized centers of education and science, special attention should be paid to the period of adaptation to new living conditions. The need to promote adaptation and integration of migrants, to establish constructive interaction between them and the host community has determined the relevance of this study, its social and practical significance. The study uses the data collected by the authors as a result of a survey of the students of the Russian university. There were interviewed 134 students. To determine the adaptation resources the authors used the Questionnaire "Types of ethnic identity" by Soldatova & Ryzhova. According study results, positive ethnic identity is an adaptation resource and contributes to the successful adaptation of migrants in the host community. Positive ethnic identity in a difficult situation, in conditions of life outside home gives a person a sense of psychological security and stability. Experiencing a feeling of helplessness in conditions of uncontrollability, an individual with a positive ethnic identity is able to feel unity with his native ethnic group, realize his belonging to a certain culture, focus on ethnic communities and is often inclined to exaggerate the positive differences of his community from others.

Keywords: *adaptation resources, academic mobility, positive ethnic identity, migrants*

1. INTRODUCTION

The changes that are taking place in the higher education system under the conditions of increased mobility are of great interest to researchers at the present time. These changes relate to increasing the flow of students and scientists, increasing the number of exchange programs, changing the relationship between universities and governments, and generally changing the nature of the educational services market. In recent years, academic mobility has been recognized as one of the most effective tools for improving the quality of human capital (Galichin, 2009). With the development of globalization, the exchange between countries in the field of science and education is growing rapidly. This contributes to the expansion and strengthening of inter-ethnic cooperation in this area, and to strengthening the competitiveness of national education systems. Academic mobility contributes to increasing knowledge accumulation, increasing academic and scientific productivity, building a network of interactions, and developing and implementing innovations.

From the point of view of the individual, mobility stimulates cultural and professional development, improves communication skills and, most importantly, affects value orientations and attitudes. Academic mobility refers to the period of study of a student in a country of which he is not a citizen (Brinev & Chuyanov, 2006). This period is limited in time, and also implies the return of the student to their home country after completing their studies abroad. For universities, academic mobility becomes an important element of their image, since the admission of students and teachers from other universities of the world, their successful studies and work are confirmation of the University's status as a qualified educational institution. Recognition of diplomas helps to increase the University's rating and increase its attractiveness. Also, academic mobility determines the interest of employers, since the development of mobility programs means the development of personal qualities of personnel and improving their skills. These elements include: dynamism and the absence of internal barriers and barriers to communication, including in foreign languages, the ability to perceive and create new things, greater openness and creativity (Mikova, 2011). Mobility programs assume that participating students and teachers are among the first to learn new competencies. Students adopt methods, approaches, academic culture, philosophy, and values peculiar to the host state. After returning home, they maintain friendly and professional ties with the residents of the country of study. Personally received representation of the country and its inhabitants eliminates fears and stereotypes formed due to lack or distortion of information (Khanmurzina, & Sinitzyn, & Kaviyev, & Burdukovskaya, & Lebedeva, & Ashmarina, 2015). Thus, academic mobility is a tool for motivating and improving the quality of education, strengthening and expanding international cooperation, and is an effective way to develop students ' educational opportunities. This form of organization of the student learning process involves moving the latter to another University for a limited time period. In terms of academic mobility, foreign students can feel like a citizen of another country, which stimulates cultural and professional development, improves communication skills and affects value orientations and attitudes. Academic mobility is an extremely important process for personal and professional development, since each of its participants is faced with the need to solve life situations and simultaneously analyze them from the position of their own and another, different culture. Migration as a complex social process is always linked to the mutual influence of the host society and migrant communities. Interaction between local residents and migrants is accompanied by adaptation of migrants to new social, cultural, economic, and legal conditions, with the possible subsequent inclusion of migrants in the cultural, social, and economic life of the country on equal terms with local residents. Thus, academic mobility of students in connection with the modernization of Russian education is becoming a common form of organization of the educational process, so the question arises how to optimally organize academic mobility. Once in a different ethno-cultural and linguistic environment, one category of migrants effectively orientates themselves in a new situation, shows independence and optimism, while the other-experiences psychological difficulties, demonstrates passivity, helplessness and indifference. The new socio-cultural environment, uncontrolled stressful events associated with moving, have an unpredictable and uncontrollable impact on migrants, causing difficulties in the adaptation process (Holtug, 2017), (Morrice, 2017). The processes of adaptation of migrants to new conditions and inclusion in the system of social relations are called, respectively, adaptation and integration (Hiemstra, & Born, & Derous, 2017). Adaptation of a migrant is the process of assimilation by a foreign citizen or a stateless person of patterns of behavior, social norms and values, knowledge and skills that allow them to exist and operate successfully in the host society. Adaptation is closely related to obtaining official status for migrants and legalizing their stay. Integration migrant – integration of the foreign citizen or the person without citizenship in the social, legal and cultural relations of the host society as full and permanent members; often associated with receiving migrant rights to

temporary or permanent residence in the country, and also with citizenship of the host country. Adaptation and integration are linked in stages: only a foreign migrant who has successfully adapted to the social, cultural, economic and legal realities of the host society can gradually integrate into the local community and become a full member of it in the course of his or her life (Yakimov, 2018). Analyzing the migration processes and features of the behavior of migrants, scientists note a number of problems associated with their inclusion in the cultural environment of the host society. Such problems include: difficulties of interaction with the indigenous population, difficulties of professional definition, housing and household disorder, the formation of negative emotional States-anxiety, stress, aggression, problems of deviant behavior of migrants, many contradictions and conflicts caused by different values and norms of behavior, etc. (Fernham, & Bochner, 2002). All these problems are the result of migrants ' lack of adaptation to their new living conditions.

2. METHODOLOGY AND DATA

The aim of the study is to identify possible adaptation resources of migrants from Central Asia in the context of academic mobility. The research methods are a theoretical review of literary sources, analysis of abstract databases on the adaptation of migrants and ethnic identity. 24 studies were analyzed. Ethnic identity was measured in 134 Russian University students using the "types of ethnic identity" method (G. U. Soldatova, S. V. Ryzhova).

3. RESULTS

Suslova presents the results of a survey of migrants and identifies the resources that are most often used by migrants in the process of adaptation to Russian conditions: motives-goals, social support and cognitive mechanisms (Suslova, 2016). Among the motives and goals identified: "have a good job", "have a good income", "financially provide children, family", "do not have the status of a migrant", "live and work freely", "have any job that makes it possible to earn and send money to the family", "hassle-free interaction with the migration service", "legal employment". Such motives and goals as establishing positive social contacts with the local population, knowledge of the host country's culture, and the Russian language were less important for migrants. Social support is another resource that enables migrants to meet their needs. All migrants singled out communication with their fellow countrymen and orientation to their help as social support. Among the cognitive mechanisms, there is a mechanism for ignoring the problems that migrants faced in the process of adapting to new living conditions, a mechanism for stereotyping that allows them to ignore the negative attitude of local residents and limit all contacts with them, and a comparison mechanism that is based on previous knowledge when Russia and the republics of Central and Central Asia were in the same Union. It is these cognitive mechanisms that support migrants ' sense of absence of serious problems in adaptation. Despite some positivity in the subjective assessment of the results of their adaptation, more than half of the migrants among the respondents noted a negative attitude to their own social status in Russia and the attitude of migration services and the local population to them, which in many ways reduces the positivity of their level of social well-being (Suslova, 2016). Since the adaptation of migrants is one of the most important directions in science and practice, there is an urgent problem-the search for effective ways to optimize adaptation processes, the formation of constructive behavior strategies for migrants, social, search and constructive activity, as well as the formation and maintenance of adaptation resources. Adaptive resources are reflected in demographic characteristics, the presence of an ethnic resource, and territorial and settlement characteristics (Ledeneva, 2013), (Evdokimov, 2019). From our point of view, one of the most effective ways to solve this problem is to develop a positive ethnic identity. Ethnic identity is a structural component of a person's social identity, which consists in the awareness of one's own belonging to a certain ethnic community.

There are two main components in the structure of ethnic identity: cognitive and affective (Stefanenko, 2006). A number of authors highlight the third component in the structure of ethnic identity-behavioral, which is expressed in the observance (or non-observance) of the traditions of one's ethnic group (Balyaev, & Nikishov, 2017). The cognitive component includes knowledge and ideas about the characteristics of one's own ethnic group and, based on ethnodifferentiating features, awareness of oneself as a member of this group. The feeling of belonging to a group and the attitude to membership in it, as well as the assessment of its qualitative characteristics, constitute an affective component of ethnic identity. The level of ethnic identity can be considered in three dimensions: an elevated level, a normal identity, and a lowered level (according to Krupnov, 2013). Soldatova G. U. identifies five levels (types) of ethnic identity: ethnonigilism, ethnic indifference, norm, ethno-egoism, ethno-isolationism, ethno-fanaticism (Soldatova, 1998). An individual with pronounced ethnonigilism prefers to move away from their own ethnic group and search for stable socio-psychological niches not by ethnic criteria. When ethnic indifference occurs, ethnic identity is blurred, which is expressed in the uncertainty of ethnicity, the irrelevance of ethnicity. The "normal" level of ethnic identity (positive ethnic identity) implies a combination of a positive attitude towards one's own people with a positive attitude towards other peoples. This type of ethnic identity is characteristic of the vast majority of people and is an important condition for peaceful intercultural interaction in a multi-ethnic world. Ethno-egoism is the result of perception of ethno-cultural interactions through the prism of the construct "my people" and "not my people". it implies tension and irritation in communication with representatives of other ethnic groups. Ethno-isolationism manifests itself in the belief in the superiority of "their" people, the recognition of the need to "purify" the national culture, a negative attitude to inter-ethnic unions and interactions. Ethno-fanaticism involves the individual's willingness to take any action in the name of ethnic interests, is to recognize the priority of the ethnic rights of the people over human rights, and justify any sacrifice in the struggle for the well-being of their people. We measured the ethnic identity of Russian University students. The results are presented in table 1.

Table 1: results of the study of ethnic identity in a sample of students, N=134

	Ethnic nihilism	Ethnic indifference	Positive identity	Ethnic selfishness	Ethnic isolationism	Ethnic fanaticism
M	21,8	11,3	8,6	22,1	23	21,6
б	3,3	3,7	2,3	2,5	2,5	2,9

Source: authors own research

The average values of ethnic identity indicators demonstrate ethnic isolationism, ethnic nihilism, and ethnic fanaticism as characterizing the study sample. We note that positive ethnic identity is not associated with the study sample. Ethnic identity is associated with a number of positive aspects of personal development, such as improved coping abilities, higher achievements, less depression and loneliness, and higher self-esteem for both majority and minority members (Daveyet al. al ., 2003;Greig, 2003;Phinney, 1989; Roberts et al ., 1999). Other studies have shown that higher self-esteem is associated with a healthier response to racial / ethnic discrimination, for Example, adolescents who reported higher levels of self-esteem were less likely to be upset when experiencing peer discrimination (Fisher et al ., 2000). In addition, when faced with stereotypes and discrimination, African-American, Japanese-American, and Mexican-American adolescents with higher self-esteem used active coping methods, while adolescents with lower self-esteem responded with verbal cues (Finney & Chavira, 1995). Because of attitudes toward self-esteem and more positive adaptation (DuBois et al ., 2002 ; Phinney, 1990), ethnic identity can encourage social integration and / or protect

children and adolescents from the negative consequences of experiencing racial / ethnic isolation and help them cope more positively. This study is intended to associate positive ethnic identity as a resource for adaptation and overcoming helplessness. Positive ethnic identity, which consists in the subject's awareness of belonging to their ethnic group, assessing the significance of ethnicity, showing interest in the history and culture of their people, a sense of national pride, forms the basis of effective socialization and professionalization, contribute to successful personal and professional development (Krupnov, & Khabaeva, & Abayeva, 2014), and, according to the authors, acts as an adaptation resource for migrants. Positive ethnic identity in a difficult situation, in conditions of life outside the home, gives a person a sense of psychological security and stability (Stefanenko, 2006). If an individual with a positive ethnic identity feels helpless under conditions of lack of control, he can feel unity with his native ethnic group, realize his belonging to a certain culture, focus on ethnic communities, and often tend to exaggerate the positive differences between his community and others. In a situation where a person is located in another country, the lack of a reference point, a sense of "We", and conditional psychological security can aggravate the adaptation process. The individual needs to feel part of the "we", and the ethnic group is one of their support groups, stable in composition and stable over time, in contrast to other groups (family, party, religious organization, etc.). Once in a crisis situation (when changing the country of residence), a person through awareness of their ethnicity seeks to find a way out of the current conditions, from a state of social restlessness, seeks to feel part of a stable community. The formation of a positive ethnic identity depends on many factors. Among the most significant are: symbols of their people, language, common historical destiny, territorial community (Kadykova, 2014). In the process of socialization, a person gets a certain idea about historical events, national heroes, gets acquainted with state symbols (national flag, national emblem, national anthem), which contributes to the formation of a sense of pride, empathy, and also ensures the coordination of the interests of the community (Kadykova, 2014). Knowledge of the native language contributes to the formation of group identity (Kadykova, 2014). It is important to note that "in modern conditions of unification of ethnic cultures, along with the steady reduction in the number todifferential factors, the role of community history as a symbol of unity of the people" (Kadykova, 2014).

4. CONCLUSION

Thus, in conditions of academic mobility, providing the student with the opportunity to get access to recognized centers of education and science, special attention should be paid to the period of adaptation to new living conditions. According to the authors, one of the effective adaptation resources can be the purposeful development of positive ethnic identity among foreign students. The organization of a multi-ethnic space in the educational environment of a University aimed at the development of cognitive, affective and behavioral components of ethnic identity can be the basis for the formation of a positive ethnic identity and as a result of successful adaptation.

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THE CORRELATION BETWEEN THE INTERNET USE AND THE ACADEMIC PERFORMANCE OF ROMANIAN YOUTH

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ABSTRACT
The rapid development and expansion of Information and Communications Technology (ICT) during the latest decades has greatly impacted all areas of society, becoming one of the most significant socio-cultural phenomena of the contemporary world. The use of new technologies, in their diverse forms, has transformed the way things are done, businesses are developed or education goals achieved. In the educational sphere, the internet use as a learning and research tool has gained significance and popularity among students, becoming a platform for learning, entertainment and social relationships. Although its benefits are highly valued (rapid access to information, networking, collaboration), the technology of the internet along with its various usages and merits is being questioned today because of its negative effects associated with internet overuse: addiction, psychological distress, social isolation etc. This study aims to investigate how the Romanian students are involved in the internet world and what the impact on their academic performances is.
Keywords: *Education, Internet, Academic Peformance, Psycholoy*

1. INTRODUCTION

The emergence of the so-called knowledge society is producing tremendous transformations in almost any aspect of life, becoming one of the most important socio-cultural phenomena of the contemporary world. This new society shaped by the technological revolution advances numerous challenges to humanity, but these radical changes are considered to be manageable by the human being (UNESCO, 2003). The rapid expansion of information and communication technologies (ICT) in schools and universities over the last decades has revealed that new technologies are becoming increasingly integrated into the educational process, having a significant impact on learning and teaching. The application of the Internet in the educational field can be defined as "the usage of Internet technologies to solve various educational tasks, namely teaching, learning and management of educational process" (UNESCO, 2003). It is well-known that the introduction of Internet in educational institutions was intended to promote learning and increase knowledge as a consequence of the easy access to information and other learning resources. In reality, besides these useful educational instruments, the Internet came along with entertainment and distraction opportunities which, incorrectly used and understood, may negatively impact the students' educational process. From this perspective, Internet in education may be considered a double-edged sword, which can either improve or diminish students' academic performances. Based on such considerations, this paper aims to determine the correlation between the Internet use and the academic performance of Romanian youth, with data showing student's purposes for Internet usage and their academic outcomes. The hypothesis is that Romanian students mostly use the Internet for entertainment (games, news, online shopping) and social networking (Facebook, Instagram) to the detriment of scientific knowledge research. In essence, I suggest that some concerns should be raised in relation to students' online activities in order to improve their academic performances by consolidating the Internet use for scientific and educational purposes and controlling its usage for distraction and entertainment. This research paper implies a secondary analysis of the database provided by the Friederich Ebert Stiftung (FES) Romania, a cultural non-profit institution, which issued

a report entitled "Romanian youth: concerns, aspirations, attitudes and lifestyle" (2014). The sample includes 1302 respondents (648 men and 654 women), aged 15-29, from different Romanian regions and residential areas (urban and rural). All participants are Romanian residents, randomly selected by the random route method. For more accuracy, I divided the sample in 3 categories based on age structure (15-19, 20-24 and 24-29) which correspond to their educational status (high-school, undergraduate or graduate). The data was collected using face-to-face interviews, questionnaires and 10 focus–groups which aimed at capturing the main challenges the Romanian youth are facing as well as their values and aspects related to their families, lifestyles, religion, socio-economic status, civic and political implication. For the present research I selected the data related to the topic, respectively data about Internet utilization (purposes, time spent on the Internet) and their academic results (for those who are enrolled in the educational system).

2. INTERNET AS AN INSTRUMENT FOR EDUCATION

There is a growing literature on the impact of Internet usage on educational achievements. The university students nowadays are part of a generation who live in a digital-rich world where the impact of new technologies on the academic performance is constantly debated. This generation is called "the net generation", "Gen Y", "digital learners" etc. Given the technological affluence of their environment, opinions differ with regard to the impact of modern technologies on their academic achievement. On the one hand, there are people who believe that technology has already transformed the way teaching and learning are conducted in higher education; on the other hand, there are people who consider these technologies as "disruptive" and highlight their negative impact on the educational process (Rashid, Ashgar, 2016).

The report issued by UNESCO in 2003 and entitled "Internet in education" underlines the most important achievements and disadvantages of the internet in the educational system and the scientific work:

- Increased accessibility to information, data and references materials;
- It has the potential to reduce the gap in quality and quantity of information in the educational sphere between developed and developing countries;
- Celerity of information retrieval and interaction between participants;
- Access to diverse and large quantities of information resources;
- Didactic effectiveness by delivering materials through electronic devices.

Despite these advantages that the Internet introduces into the learning process, there is also empirical evidence that highlights the main problems associated with access to information:

- *Unorganized material* which may impede easy retrieval of relevant information. This situation is clearly described by M. Gorman, the head of the library of the University of Fresno, California who asserts that Internet is "even worse than a vandalized library because thousands of additional unorganized fragments are added daily by the myriad of cranks, sages, and persons with time on their hands who launch their unfiltered messages into cyberspace" (Gorman, 1995 cited in UNESCO, 2003).
- *Cognitive overload* – it takes time to learn how the system functions and to browse through the rich and diverse quantity of material that the Internet provides.
- Valuable information and data is often restricted and not available to the large population, such as access to some databases, dictionaries or encyclopedias.
- New technologies are considered to have a negative impact on culture.
- There are some concerns regarding the predominance of English as a language for communication and sharing information.

It is unquestionable that the Internet plays an important role in the educational field nowadays, stimulating change of mentality, opening new opportunities for teaching and learning and enlarging the possibilities to access unlimited knowledge. From the educational perspective, the Internet is a platform for communication between teachers and students, providing access to online libraries and educational resources (literature, databases) and helping to improve study skills.

2.1. The advantages of internet in education

Supporters of technology as an instrument for education consider that the Internet makes a difference in achieving academic performance. The Internet was invented in the early 1960s as a revolutionary idea with the purpose of exchanging information on research and development in science and the military field. At present, it is the largest information infrastructure, with about 1,2 billion websites (www.internetlivestats.com, 2017) which provide information almost on any subject (Tella, 2007). The Internet provides an ocean of information, hence becoming a powerful educational tool for teaching and learning. It allows students to find out information on almost any subject of interest which would be otherwise very difficult to achieve. Moreover, having nearly instant access to the latest news and information in their field, it enables students to stay connected to the real world (Deore, 2012) and consequently make better decision for their lives. From the educational perspective, many teachers believe that the Internet has visible effects on their students. In the literature there are numerous studies dealing with the benefits and drawbacks of the Internet in education. For example, Camilla Brandsrom (2011) investigated how the Internet is used as an educational tool by focusing on the teachers' perspectives while using the Internet in their every day work. She found out that one of the positive effects is the students' increased motivation to study as learning becomes more interesting and funny. In addition, the need to keep updated and active on certain electronic platforms and social networks (for receiving instructions, notices or materials) increases their responsibility and involvement in curricular activities. Some teachers highlight the students' familiarity with the new technologies and their ability to handle them easily. This might explain the students' preference to read texts online to the detriment of books which might somehow intimidate them in terms of complexity and number of pages. Another significant advantage identified by teachers while using the Internet as an educational tool is that it makes students more active as they are being given the possibility to search for the right answers by themselves instead of waiting for the teacher to provide them with the right answer. This endeavor is rewarded with personal satisfaction as it strengthens the capacity to solve problems and to find the right answers relying on their own abilities to find solutions.

2.2. Internet in education: negative effects

Although the merits of the Internet are highly recognized in the educational sphere, there are also some negative effects associated with its misuse or overuse (students are tempted to browse irrelevant or useless information, play games or spend hours in chat with friends). Spending time on the Internet often prevents them from accomplishing their assignments, studying for exams or reading books. Students' lack of control on Internet use or, even worse, their Internet addiction, may lead to lower academic performances reflected in poor grades or even academic failure (Brady, 1996 cited in Tella, 2007). It is commonly believed that a major risk associated with having Internet access in class resides from students' temptation to use it for entertainment purposes (check Facebook, send messages, play games etc.). Even more, one of the most significant shortages of the Internet usage is the quality of information: students may find incorrect, inappropriate or even false information from untrustworthy online sources (Brandstom, 2011). Another concern regarding the Internet use in education comes from the fact that it might turn into the major teaching instrument.

Students, as well as teachers might rely too much on the Internet as a primary teaching and learning resource which would eventually lead to a negative attitude towards the traditional ways of studying, such as book reading. Some authors (Chapman, 2005 cited in Brandstom, 2011) even assert that computers might lead to a devaluation of books by students.

3. FREQUENCY OF INTERNET USAGE BY STUDENTS

Information and Communication Technologies (ICT) has penetrated students' lives in two ways: on one hand, mastering these new tools is considered an essential cognitive ability, being included in most syllabuses; on the other hand, it is used for entertainment purposes and communication with peers. A study on Spanish students revealed that 52,5% used the Internet between 0 and 2 hours per day, almost 28% 3-6 hours per day and the rest used the Internet more than 6 hours per day. Another study carried out earlier, in 2008, showed that more than 80% of students spent online between 30 minutes and 2 hours a day and roughly 8% more than 2 hours (studies cited in Cerretani, Iturrioz and Garay, 2016). It is possible that time spent on the Internet nowadays to be larger due to increased portable devices access and availability (laptops, cell phones). The frequency of Internet use among students has increased over the past years as it has become common to possess a portable device (mostly a cell phone). For example, 62% of the students interviewed in a survey carried out in 2011 (Jacobsen and Forste) reported the use of electronic devices for non-academic purposes while they are in class, study or do their homework. About 95% of students bring their mobile phones to class every day (Tindel and Bohlander, 2012) and about 30% bring their laptops (Aguilar-Roca, Williams and O'Dowd, 2012). Other researches show that laptop use in class stimulates participation (Samson, 2010) and students become more motivated to learn. Moreover, students get higher grades and test scores as compared to those who do not use laptops, but only in a controlled environment. On the contrary, laptops and cell phones (portable devices) can distract students in an uncontrolled context (Fried, 2008). In this situation, students use these devices for texting, online shopping, reading the news or mail checking (studies cited in Ravizza, Hambrick and Fenn, 2014). From this perspective, the use of electronic devices in class, for non-academic purposes, may hamper learning and lead to lower academic performances. Ravizza, Hambrick and Fenn (2014) also showed that the Internet use for non-academic purposes influences learning and overall performance and demonstrated that higher rates of internet use are related to lower exam scores. Moreover, students display poor awareness on the impact of portable device use on learning over time. It is apparent that the presence of rules as an attempt to control the Internet use by parents or educators may help mitigate some of the negative effects associated with Internet addiction or computer games.

4. GENDER DIFFERENCES IN INTERNET USAGE

Numerous studies have focused on gender differences in Internet usage. For example, Weiser (2000) identified significant gender differences in the Internet use as men are more familiar with technology and computers compared to women. Furthermore, Scherer (1997) asserted earlier that men are becoming in larger proportion Internet dependants than women, and Schumacher (2000) reported that men were more likely to become pathological users as compared to women (researches cited in Akhter, 2013). The study carried out in 2013 by Akhter on 359 university undergraduates also suggests that there are gender differences in internet addiction, with men being more addicted than women. A possible explanation of this result could reside in the fact that more family supervision is given to female students, especially in eastern cultures, context which might prevent them from spending too much time on online activities (Tsai et al., 2009 cited in Akhter, 2013). It should be noted that it is mostly the Internet that makes people addicted of computers and not the other technologies (applications such as word/office for example) which might be useful in the professional or educational field.

5. ACADEMIC PREFORMANCE IN THE INTERNET ERA

Academic performance is generally regarded as the effort involved in pursuing educational goals and it is influenced by factors such as intellectual capacities or environmental conditions. It is a multidimensional concept and it is determined by variables (personal, academic or social) which are difficult to organize in a specific model. Academic performance is a subject of utmost importance in higher education and a predictor of other performances (on other educational levels or job outcomes) (Kuncel, Cred and Thomas, 2005). It can be measured from different perspectives. Efficacy is determined by the success obtained in a course program as reflected in grades; this is an important indicator for "decision makers in educational institutions". A research carried out in 2008 by Duart et al. on universities in Catalonia (Spain) used as the main indicator the relation between the number of students matriculated and their results, establishing three categories of academic achievement: high, medium and low (Torres Diaz et al., 2016). In order to reduce disparities between social classes (rich and poor) and to lessen the "digital divide", many governments and non-governmental organizations around the world took the initiative to subsidize computer purchase in schools as well as in private households. For example, Brazil developed a plan to bring inexpensive PCs to low-income Brazilians while Uruguay provided free laptops to primary school children. In 2008, the Romanian Ministry of Education subsidized the achievement of home computers by issuing about 35,000 vouchers worth $300 in order to help Romanian low-income students in public schools to achieve a personal computer. This program was intended to help disadvantaged families to purchase a home computer and to develop computer skills among school children. However, these major governmental projects aimed at increasing computer use among students were implemented against significant evidence showing the effects of computers on students' educational achievement and behavioral outcome (Malamud, Pop-Eleches, 2011). The risks and benefits associated with excessive computer use by students constituted the subject of many scientific researches and public debates. Similar to concerns about the negative impact of television on human behavior, there were worries about the students' addiction to computers and the excessive use of Internet. Among the most common negative effects identified by the numerous researches in the field were eye strain and risk of obesity, decreased social interaction and even isolation. Furthermore, the time spent on computer games or Internet entertainment it is considered to prevent students from being involved in other valuable activities with a developmental dimension, such as studying, reading or solving specific problems. On the other hand, the use of computers as a learning technology is positively perceived as they facilitate learning and develop computer skills which may lead to better access to labor market as adults. The study carried out in 2010 on Romanian students discovered that those who benefited from a voucher to purchase a computer registered a decline in academic achievement, with significantly lower grades in Math, English and Romanian (the main subjects studied in Romanian schools), but gained computer skills and increased their cognitive abilities. The results also showed that few students installed educational software on their computers and even fewer used them for homework or other learning purposes. Instead, most students installed games on their computers and reported that they spent most of the time playing games, leaving them little time for homework, reading or social activities. These findings emphasize that, despite the government's endeavors to encourage education through technological means, most Romanian students did not use computers for educational purposes, but for entertainment (especially computer games) and this attitude was correlated with lower academic performances (Malamud, Pop-Eleches, 2011).

6. RESULTS

Among the respondents with Internet access, roughly 25% spend between 2 and 3 hours online a day, followed by those who spend 4 to 5 hours a day (22%) and only about 20% are spending

less than 2 hours a day on the Internet. One out of six Romanian youth spends about 1 hour in front of the computer while the same figure represents those who spend 6 or more hours a day on the Internet (Table 1).

Table 1: Time spent daily on th Internet

Time spent on the Internet/day	Percentage of users
Up to 1 hour	15,9%
Up to 2 hours	20,1%
Up to 3 hours	25,6%
4-5 hours	22,2%
6 hours and more	16,1%

Source: Author's selection based on FES Data

It can be noticed that more and more people tend to spend time on the Internet rather than watching the TV, a phenomenon specific to the current youth generation. On the other hand, there is an interesting relationship between the two ways of time spending (TV versus the Internet): respondents without Internet access spend on average more time on watching the TV while those who spend more than 4 hours a day online watch TV to a lesser extent (FES, 2014). Consistent with other studies (Tsai et al., 2009; Akhter, 2013), data collected on Romanian youth show that men spend more time than women in online activities (roughly 43% of men spend more than 4 hours a day on the Internet as compared to 34% of women) as presented in Table 2. Men usually browse the Internet for news or online games while women tend to use it for work activities or for social networking (FES, 2014).

Table 2: Gender difference in time spent on the Internet per day

Gender difference in time spent on the Internet/ day	Up to 1hour	Up to 2 hours	Up to 3 hours	4 hours and more
Men	12,4%	19,2%	25,7%	**42,7%**
Women	19,4%	20,9%	25,5%	**33.9%**

Source: Author's selection based on FES Data

There is also a distinction regarding the Internet use by Romanian youth based on age groups which is of great relevance to the present study. From Table 3 it can be observed that more than 50% of the Romanian youth aged 25-29 are spending spend less than 2 hours per day on the Internet while almost one third of the teenagers (15-19 years) are spending between 4 and 6 hours online and 17.6% of them more than 6 hours per day.

Table 3: Time spent on the Internet per day and age structure

Age structure	Up to 1 hour	Up to 2 hours	2-3 hours	4-5 hours	6 hours and more
15-19 years	10,5%	16,9%	**26,9%**	**27,9%**	**17,6%**
20-24 years	12,4%	20,7%	26,5%	23,0%	17,1%
25-29 years	**27,8%**	**23,4%**	22,5%	13,4%	12,8%

Source: Author's selection based on FES Data

Data on the Romanian teenagers show that they use the Internet as a main source of information, as well as for video clips and video games. When it comes to young people aged 20-24, they use the Internet for diverse purposes equally while those aged over 25 are using the Internet for

information related to their jobs, for shopping and online management of their banking accounts. Unsurprisingly, 9 out of 10 teenagers use the Internet for the social networks. Almost half (46,5%) of the Romanian youth who participated at this survey are integrated into an educational structure (school, high school, university, master or PhD). The other half left the educational system at a certain level, most of them entering the job market. Among all the undergraduates, 16% are from the urban area and only 10% are from the rural area. According to the data, more than 80% of the teenagers (aged 15-19) are enrolled in the pre-university system (high schools), 35% of those aged 20-24 are college students or enrolled in graduate courses (master, PhDs) while more than 90% the Romanian young people aged over 25 left the educational system. Among the respondents who are still enrolled in an educational form (602= 46,2%) data reveal significant differences in the total amount of time spent studying per day. As Table no.7 shows, when asked how much time do they spent studying per day, most of the students interviewed responded that they study between 1 and 2 hours per day and only 3,4% study more than 4 hours daily.

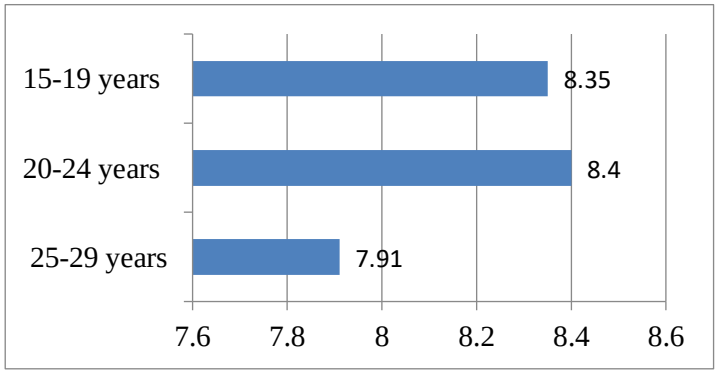
Table 4: Time spent studying per day

How many hours do you spend studying per day?	
Up to 1 hour	11,3%
1-2 hours daily on average	12,4%
2-3 hours daily on average	11,4%
3-4 hours daily on average	6,4%
More than 4 hours daily	3,4%
DK/NA	1,5%
Total	46,.2%

Source: Author's selection based on FES Data

Statistics on high school students (aged 15-24) reveal that half of them (and mostly boys) attend a Mathematics-Computer Programming (Real) and roughly 25% of them (with more girls than boys) study Humane and Social Studies Program. Only one out of 9 teenagers is enrolled in a professional school (FES, 2014). Related to the academic performance, the average score obtained in the last year by the young people who are still enrolled in the educational system is 8,35 (FES, 2014). The best average score (8.4) is obtained by the group associated to undergraduates and graduates (college and master students, aged 20-24) as presented in Figure 1. There are also differences between the educational forms (levels). Overall, postgraduate students (enrolled in master or PhD programs) have better grades than the others. However, the differences are not statistically significant because of the reduced sample of the students enrolled in post university courses (3%).

Figure 1: Grade point average on age groups



Source: Realized by the author on FES data

Figure 2 indicates that there is a negative correlation between the two variables analyzed. This value (Pearson Coefficient,-062) shows that the more time youth would spend on the Internet, the lower would be their grades. However, it cannot be established a significant correlation between the Internet use and the academic performance of Romanian youth.

Figure 2:Correlation between the time spent on the Internet and the average grade

Correlations

		How many hours a day on average do you spend on the Internet?	What was your grade point average last year?
How many hours a day on average do you spend on the Internet?	Pearson Correlation	1	-.062
	Sig. (2-tailed)		.167
	N	1181	502
What was your grade point average last year?	Pearson Correlation	-.062	1
	Sig. (2-tailed)	.167	
	N	502	518

Source: Realized by the author on FES data

On the other hand, it can be observed a positive relationship between the students' enthusiasm in participating in the educational process, the effort engaged and their academic performance as measured by their results.

7. CONCLUSION

The rapid expansion of information and communication technologies (ICT) in schools and universities over the last decades has revealed that new technologies are becoming increasingly integrated into the educational process, having a significant impact on learning and teaching. The purpose of this study was to investigate how the Romanian youth are involved in the internet world and what the impact on their academic performances is. Data on Romanian youth show that 40% of them use the Internet mainly for social networks (9 out of 10 teenagers use the Internet for the social networks, mainly Facebook and Instagram). This is not surprisingly as data from the Internet World Stats show that Facebook is the social network with an explosive growth over the past years, registering about 8 million users in March 2017 out of 19.8 million the Romania's total population. As Romanian youth mostly spend time on this social network, I draw the conclusion that they have less time for educational activities and therefore achieve lower academic performances. These results are consistent with other findings (Astin, 1984; Junco, 2011) which demonstrate that academic success is dependent upon the time and energy invested in academic work. Therefore, the time spent on Facebook might not be in itself a problem, but it prevents students from engaging more time in studying and researches show clear that engagement influences academic performance. Data on the Romanian youth show that there is a significant difference on Internet use based on age groups. Young people aged 15-19 use the Internet as a main source of information (online news), as well as for video clips and video games. Unsurprisingly, 9 out of 10 teenagers use the Internet for the social networks. When it comes to young people aged 20-24, they use the Internet for diverse purposes equally (news, social networks, information, games) while those aged over 25 are using the Internet mostly for searching information related to their jobs, for online shopping and online management of their bank accounts. These data reveal that, irrespective of age, Romanian youth do not use the Internet as an educational tool, but mostly for entertainment purposes.

This result is consistent with past researches which (Ravizza, Hambrick and Fenn, 2014) showed that the Internet use for non-academic purposes influences learning and overall performance and demonstrated that higher rates of internet use are related to lower exam scores. Data analysis indicates that there cannot be established a significant correlation between the Internet use and the academic performance of Romanian youth, although the negative correlation between the two variables may lead to the conclusion that the more time is spent on the Internet, the lower the academic results would be. This result supports other studies (Akhter, 2013) which found out that the greater the Internet use is, the higher the possibility to get lower grades as there remains too little time to study and to engage in educational activities.

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ENVIRONMENTAL FACTORS OF PROFESSIONAL MOTIVATION OF UNIVERSITY STUDENTS

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ABSTRACT

The article considers the concept of professional motivation of students in the context of the influence of environmental factors of the university. Environmental factors in the development of professional motivation were studied at the faculty of pedagogy and psychology of Chelyabinsk State University. Professional motivation is the development basis of professionalism. In this research, the authors identified environmental factors of the development of professional motivation in the educational process at the university. Differences in environmental factors of motivation among students of different courses of study are revealed. The task of the university is to ensure that the formation of professional motivation occurs during students' studies, which guarantees success in further professional activities and competitiveness in the modern labor market.

Keywords: *Educational process, Environmental factors, Professional motivation, Students, faculty of psychology and pedagogy of Chelyabinsk state University*

1. INTRODUCTION

Modern higher education and the educational environment of the university are very effective for self-development and the acquisition of professional competencies. As in other countries [9], in Russia there is a rapid increase in demand for human capital, which requires an increase in educational achievements, which depend on the professional motivation of students. In education, there is a global shift towards higher levels of educational skills and knowledge acquired by students in the process of studying at a university, as well as student mobility [12]. This contributes to the competitiveness of students [17]. The professional motivation of first-year students of the university has a significant impact on the quality of education. The success and academic performance of students depends not only on natural abilities, but also on professional motivation. The choice of a professional path, the effectiveness of professional activity, satisfaction with labor activity and the results of a profession, and the success of a student's occupational training depend on professional motivation [1]. External sources of student activity are living conditions that include requirements, opportunities, and expectations. The essence of the requirements is to comply with social norms of behavior, activity and communication. Expectations characterize the attitude of society towards learning as a norm of behavior that is accepted by a person and allows one to overcome difficulties associated with

the implementation of educational activities. Opportunities are the objective conditions which are necessary for the beginning of learning activity. The driving force of an individual's activity is the mismatch between the real level of human development and social requirements, the expectations of the society in which he operates [3]. Professional motivation is the desire and willingness of an individual to commit certain acts in order to satisfy any professional needs and to achieve goals. Professional motivation refers to the internal desire, formed from the embodiment of external and internal factors [8]. The following factors influence the development of professional motivation: needs; expectations; system of value; impetus; external conditions. E.A. Klimov in the structure of professional motivation considers such concepts as: need, labor motive, labor motivation, inducing power of motive, job satisfaction, labor incentives, professional interests, labor productivity (efficiency) [6]. The development of professional motivation is influenced by internal and external (environmental) factors. In this research, we will pay attention to environmental factors affecting the professional motivation of university students. Papadopoulos, T., T. Stamati, and P. Nopparuch consider recognition and awards as external factors in motivating students' professional activities [15]. In the work of Wang, S. and R.A. a three-dimensional structure of factors influencing the acquisition of professional competencies is presented; they considered individual characteristics, environmental and motivational conditions [16]. They attributed the characteristics of the teacher to the individual characteristics, since the intense role of the teacher in student motivation is revealed. Environmental factors include curricula design features. Features of the construction of curricula have been studied by few authors [18]. Curricula design features, such as the curriculum, content of disciplines, type of assessment, support for curators, the use of electronic forms, affect the professional motivation of students [10]. The results of the Jamal El-Den study showed that the teacher's interest, creativity and the context of the course were significant positive factors for the student's professional motivation [11]. Orsini C. and colleagues conducted a systematic review of the factors that influence motivation and divided them into five groups: 1) intrapersonal determinants, such as age and gender; 2) interpersonal determinants, such as academic conditions; 3) cognitive results, such as beliefs; 4) affective consequences, such as anxiety or depression; and 5) behavioral outcomes, such as academic engagement [14]. Motivation may also depend on geographical and economic factors [13]. Theory of A. Maslow has found its application in the development of ideas about the influence of environmental factors on professional motivation. Within the Maslow's concept, the internal factors that influence professional motivation are: the possibility of self-realization; career prospects; self-assessment of work achievements; adoption of an informal relationship structure; public approval of the results of the work; finding common interests with team members, etc. Environmental (external) factors in the theory of A. Maslow: wages; socio-psychological climate of the team; company culture; public image of the company. Following A. Maslow, we will understand environmental factors as: 1. Salary, 2. Ergonomic working conditions, 3. The labour routine and rest, 4. Socio-psychological climate of the team, 5. Corporate culture, 6. The personnel policy of the company, 7. Providing the team with feedback (informing the team about the state of affairs in the organization), 8. The public image of the company, 9. The territorial location of the company.

1.1. Salary

Salary is the most important environmental factor in professional motivation. However, for first-year students, wages as a motivation factor in the profession are not yet gaining their primary importance. We can talk about the impact on the development of professional motivation of the very fact of future salary for students. Thus, knowledge of average wages is not a factor in the growth of professional motivation, since this average wage is very small.

However, at the end of the 20th century, Russian scientists conducted a study of professional motivation, which has not lost its relevance at the present time. It follows from the results of this scientific work that material stimulation acts as an effective means of forming an attitude towards work as a personal need only if the content of the labor activity itself has a personal meaning for the employee. Otherwise, money is compensation for an uninteresting activity, as a result of which a person will regard labor activity as a way of satisfying basic needs and maintaining his existence, and not as a means of professional and personal self-development [5].

1.2. Ergonomic working conditions

In loose meaning of the word, ergonomic working conditions are the adaptation of the workplace, objects and objects of work, as well as computer programs for the most safe and effective work of the employee, based on the physical and mental characteristics of the human body. In our case, this is an adaptation of the place for study and independent activity of the student. The university environment creates all the necessary conditions for mastering knowledge, these are classrooms equipped with modern teaching aids; libraries, computer classes. However, for certain categories of students (for example, young people with disabilities), the stipulated terms for effective learning are insufficient. They should be provided with special conditions for training, according to needs.

1.3. The labour routine and rest

The labour routine and rest must be observed to maintain working capacity at a high level. The labour routine and rest is the procedure for alternating work and rest periods and their duration established for each type of work. The rational regime is the ratio and content of the periods of work and rest, in which high labor productivity is combined with high and stable human performance without signs of excessive fatigue for a long time [2]. Observing the most appropriate daily regimen, a person better adapts to changing external and internal conditions. If the physiological resources of the body are excised, a feeling of discomfort occurs, fatigue during the day, loss of strength, a high risk of morbidity, as well as a growing level of stress. The daily routine is the normative basis for life for all students. But, it should be individual for each: depending on the specific conditions, state of health, level of performance, personal interests of the student. It is important to ensure the constancy of one or another type of activity within a day, avoiding significant deviations from a given norm. A regime will be feasible and feasible if it is dynamic and is built taking into account unforeseen circumstances.

1.4. Socio-psychological climate of the team

For higher education institutions, the creation of a socio-psychological climate conducive to the development of knowledge is one of the priority tasks. It includes many interrelated and interdependent factors: relationships in the environment of the faculty; the attitude of teachers towards students; interaction of group curators with students; special psychological climate created by all participants in the educational process. The socio-psychological climate of the staff of a higher educational institution plays a significant role in the formation of professional motivation among students. Chelyabinsk State University has always been famous for its special, “home” atmosphere for students; The Department of Psychology and Pedagogy supports these good traditions, creating for its students a cozy, family atmosphere in which there is mutual assistance and respect for young people who have entered the university.

1.5. Company culture

Company culture means the totality of cultural meanings, symbols, and behaviors that exist in an organization, adapted to the external environment and internally integrated. Company

culture is always and everywhere, it cannot be formed in a short time by writing the relevant documents, regulations and instructions. However, even without them it is impossible; the main thing is that they are based on life values that are shared by the majority of the members of this organization tied to the external environment and internally integrated. According to E.H. Schein, the formation of company culture is due to the influence of primary and secondary factors. He considers the following primary factors: factors of concentration of attention of the top management; management response to critical situations arising in the organization; attitude to work and behavior style of managers; criteria for evaluating the performance of employee incentives. To the group of secondary factors E.H. Schein includes the following: organizational structure of management; information transfer system and information procedures; external and internal design, decoration of the premises in which the organization is located, ways of placing employees; "Myths" and stories about the most important events and individuals who have previously played or play a major role in a certain segment of the organization's life; formalized provisions on philosophy, the meaning of the existence of organizations, formulated in the form of principles, credo. It should be noted that the organization culture of the university is implemented by all subjects of the educational process: employees, students, and managers. Depending on how traditions and values are shared by students, positive and / or negative information about the university is disseminated. This position is especially important to consider in the context of the process of developing the personality of students as carriers of an innovative culture [7].

1.6. The personnel policy of the company

In a modern institution of higher education, human resources play a huge role. Personnel policy should be organically woven into the scientific, educational and educational process, providing the most important university resources. One of the problems of a classical university is the task of attracting young and talented scientists, researchers to work in a higher educational institution. This problem should be solved by improving the system of motivation for professional growth of young teachers.

1.7. Providing the team with feedback (informing the team about the state of affairs in the organization)

Providing feedback to the team is carried out at the Chelyabinsk State University by the Office of Public Relations, whose tasks are to advertise the activities of the university, create a positive image of the university in the media on the Internet, as well as informing employees and students of the university about life in their native educational institution.

The most important informative function is performed at CSU by the "Universitetskaya Naberezhnaya" newspaper, which describes not only the life of the university, but also city-wide events that are interesting to young people.

1.8. The public image of the company

In modern conditions, the image of a higher educational institution should reflect the real level of training of specialists. The favorable image of the university is the main source of competitive attractiveness of the institution in the eyes of future applicants. T.N. Piskunova in her dissertation research defines the image of the university primarily as an "emotionally-colored image" of an educational institution, the purpose of which is to exert a psychological influence on the target audience. The university's image is influenced by numerous factors: the history of the university, faculty, quality of education, opportunities for further employment, and students 'opinions. Three components have a decisive influence on the image of a university: 1. Graduates of a higher educational institution and their opinion about their university; 2. Media and the Internet, where there are opinions of graduates, reviews and articles

about the university; 3. University website - as a university presentation for applicants, parents, business and scientific partners, grantors [4].

1.9. The territorial location of the company.

The territorial location of a higher educational institution is included in the image of the university and determines, to some extent, the attractiveness of the university. The presence of a campus, with a developed infrastructure of the place, with an attractive territory for recreation and sports, with the presence of recreation areas, with the proximity of hostels and various university buildings necessary for study (for example, laboratories, lecture halls) - all this determines the attractiveness of the university in the eyes of students. Chelyabinsk State University is located in a constantly evolving territory, with a botanical garden, with recreation areas, where not only students and teachers come, but also residents of the nearest areas of the city

2. SAMPLE AND METHODS

The study was carried out on the basis of the federal state budgetary educational institution of higher education "Chelyabinsk State University". 75 people aged 18 to 21 years were examined, of which 69 (92%) were women and 6 (8%) were men; the average age was 20.3 years ± 1.84. All subjects are students who have voluntarily consented to participate in the study. The subjects were asked to fill out the following methods: 1. The methodology for studying the motivation for studying at a university proposed by T.I. Ilyina. 2. The semantic differential. Statistical processing was performed using the SPSS software package. 3. A questionnaire aimed at studying the factors of professional motivation of students.

3. RESULTS

As a result of the study, the following data were obtained.

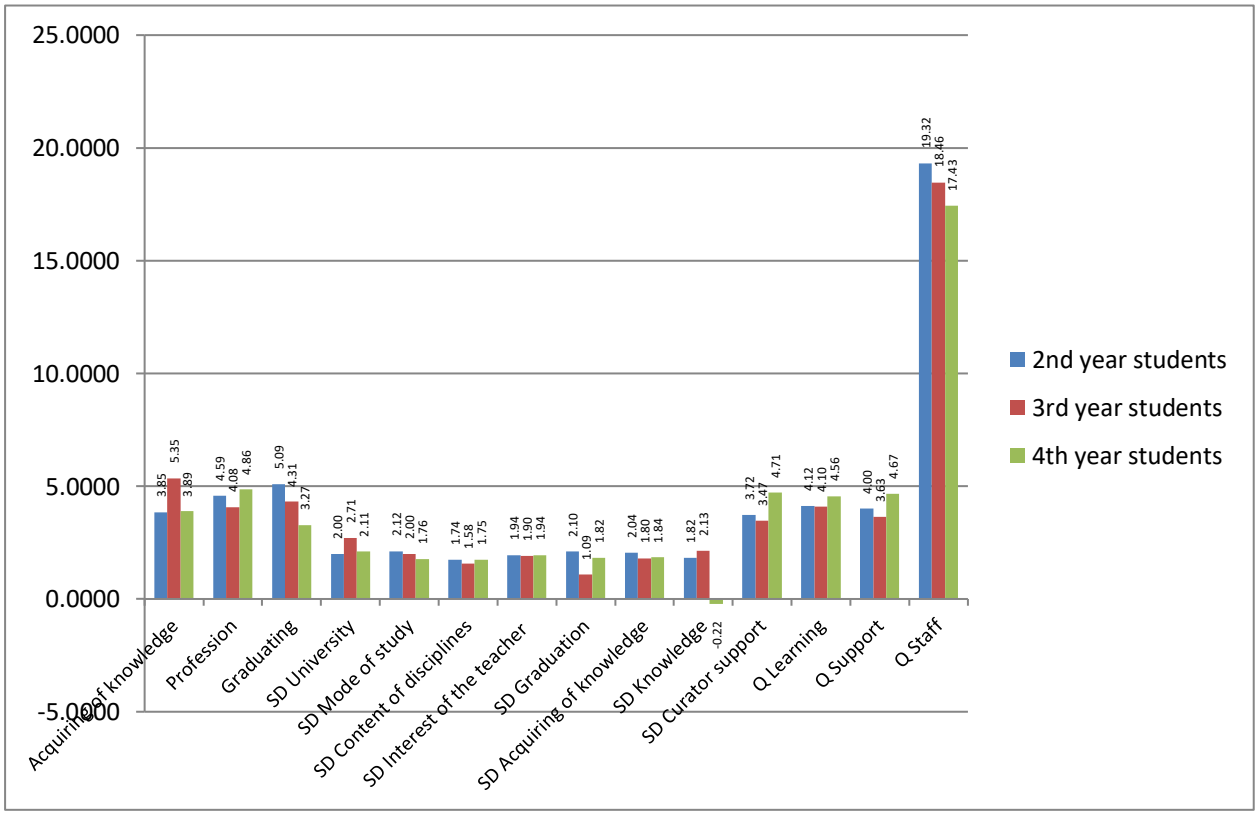

Figure 1: Summary data of the three research methods

3.1. The methodology of studying the motivation of learning at the university, proposed by T.I. Ilyina

Methodology for the study of motivation for studying at a university proposed by T.I. Ilyina, allows you to determine one of the three options for motivation during the period of study at the university, namely, the desire to acquire knowledge, the desire to acquire professional knowledge and form professionally important qualities or the desire to acquire a diploma with the formal assimilation of knowledge. As you can see, the desire to acquire knowledge, as the leading motive for educational activity, prevails among 3rd year students (average value 5.3.3); whereas in the second year the motive for obtaining a diploma prevails (average value knowledge 5.09). 4th year students strive to acquire professional knowledge and form professionally important qualities (average value 4.86). Thus, we can conclude that students of the faculty of psychology and pedagogy of Chelyabinsk State University of the third and fourth courses have adequate motives for studying at the university - namely, the acquisition of knowledge and the formation of professionally important qualities.

3.2. The semantic differential, aimed at assessing comfort in the educational environment of the university, as well as the motive for obtaining education

Based on the obtained semantic differential data, we can say that the highest attractiveness of the university is noted among 3rd year students, 2nd year students have high satisfaction with the form of training, the content of the disciplines, they are interested in obtaining knowledge for professional activities and are focused on obtaining a diploma. In the 4th year, higher values are noted for satisfaction with the content of the disciplines, since the working curriculum contains professional disciplines, specialization disciplines and optional disciplines that expand specialization. All disciplines are professionally significant for future specialists. At the same time, in the 4th year, low indicators of support for the group's curator are noted, which may affect the decline in the attractiveness of the university. At the first stage, the averaged matrix of students' grades in groups (2nd, 3rd, 4th year students) was processed using factor analysis to place all the objects of evaluation in the semantic space of adjectives-antonyms (rating scales). As a result of factor analysis of the indicators, two significant factors were identified that describe 76.8% of the total variance.

	Factors	
	Educational content	Attractiveness of the university
Acquiring of knowledge	0,903	0,266
Mode of study	0,883	0,307
The content of disciplines	0,875	0,236
The interest of the teacher in the taught material of the discipline	0,844	0,449
Graduation	0,774	0,211
Curator support	0,376	0,311
Attractiveness of the university	0,242	0,970
Percentage of explainable variance, %	35,14	41,65

Table 1: The results of factor analysis of indicators in selection.

Let us turn to the results of factor analysis of indicators in the sample. According to the results of the analysis of the scales that formed the poles of the identified factors, the following data were established. Factor I is interpreted as “Educational content” (contribution to the total variance of 35.14%). It is represented by the following jackals with factor loads (obtaining knowledge (0.903); form of training (0.883); content of disciplines (0.875); teacher's interest in

the taught material of the discipline (0.844) and obtaining a diploma (0.774)). Factor II was called "Attractiveness of the university" (contribution to the total variance of 41.65%). He included the following scale: attractiveness of a university with a factor load (0.970).

3.3. A questionnaire aimed at studying the perception of the attractiveness of the university and the chosen direction of preparation, as well as the features of the educational process and student support by the university

An analysis of the questionnaire aimed at studying the perception of the attractiveness of the university and the chosen direction of preparation allows us to draw the following conclusions. Most of all satisfied with the form of training (traditional lectures, lectures in dialogue mode, discussions, seminars, colloquiums, research and independent work - 4-year students (average value 4.71). Students of the second, third and fourth chickens also highly appreciate the educational activities in the university as a whole (average value knowledge 4.12; 4.10; 4.56, respectively). The educational activities at the university were evaluated by students according to such indicators as the equipment of classrooms with modern equipment; relevance of the information presented by the teacher to the topic of the lecture; relevance and relevance of taught information; access to internships, etc. The support of the educational process is also highly appreciated by all the students surveyed, but most of all - by 4-year students (average value 4.67). Accompanying the educational process include such indicators of the questionnaire as information support, access to computer technology, library equipment, convenient classrooms, convenient schedules, the availability of teaching materials, the work of the dining room and medical office. The highest qualification of the faculty of second-year students (average value 19.32): knowledge, qualifications, objectivity of assessments, a clear presentation of the material, the ability to interest the topic. Third-year students (average value 18.46) rate the teaching staff somewhat lower and fourth-year students (average value 17.43) rate lower. However, all assessments of the faculty by students of all courses are at a high level, compared with other factors of educational motivation, studied in the questionnaire.

4. CONCLUSION

Thus, the study revealed a number of patterns of development of professional motivation among university students in terms of environmental factors.

1. It was revealed that the third and fourth year students of the Faculty of Psychology and Pedagogy of Chelyabinsk State University are dominated by more adequate than the second year students, the motives for studying at the university - namely, the acquisition of knowledge and the formation of professionally important qualities.

2. Two significant environmental factors of the development of professional motivation among students of the faculty of psychology and pedagogy of the Chelyabinsk State University were identified:
   - factor “Content of education” (obtaining knowledge; form of training; content of disciplines; teacher's interest in the taught material of the discipline and obtaining a diploma).
   - factor "Attractiveness of the university" (attractiveness of the university).

3. It has been established that third and fourth year students consider Chelyabinsk State University more attractive and modern than second year students. This is manifested in environmental factors such as high satisfaction with the form of training, the content of the disciplines, support of the educational process, and educational activities in general.

4. It was revealed that all students, regardless of the course of study, highly appreciate the professionalism of the teaching stuff, as well as positively assess the content of education, which contributes to the high motivation of professional activity. High levels of educational content can also be confirmed by the results of intermediate certification (academic performance in groups). As a result of the study, environmental factors were identified that affect the development of professional motivation of university students.

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REGULATORY APPROACH TO THE FORMATION OF A CULTURE OF SAFE LABOUR AT MINING ENTERPRISES

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ABSTRACT

The article briefly summarizes the normative approach to the formation of a culture of safe labour and the results of this approach in the practice of coal mining companies. The basis of the normative approach to the formation of a culture of safe labour is the concept of reliable labour safety, implemented through improving the quality of labour processes and socio-economic regulation of labour activity of employees. The concept of reliable labour safety involves the consideration of the enterprise, service, site, team not only as a production, but also as a socio-economic system. The human factor is the main factor of safety and hazards of production. The production safety management system is aimed at the formation of safe working conditions that ensure the implementation of technology, personnel relations to safety as a condition of productive labour and efficient production. One of the important conditions to ensure the security of labour is the addition of the concept of work measurement, based primarily on technical and technological approach to the concept of socio-economic performance standards of work of employees, based on the provision of contingency measures of social and economic benefits received by an employee and actions of employees in the employment in the specific conditions of production which provides steady improvement of efficiency and safety of production and quality of working life of employees. The purpose of socio-economic performance standards of work of employees is the definition, establishment and maintenance of a measure of the work, which provides the employee with a more attractive and beneficial placement in employment of his time and energy to the employer - use of labour potential of employees to ensure long-term competitiveness of the enterprise. The socio-economic rationing is an instrument for eliminating or setting the restrictions in relationships, behaviour, interaction of subjects, by its institutional nature, which in its turn determines the level of using the technical potential of an enterprise, and, as a consequence, provides the necessary growth of its competitiveness.

Keywords: *labour culture, labour rationing, mining enterprise, socio-economic performance standards*

1. INTRODUCTION

Provision of the high level of safety and efficiency of production processes at present is one of the primary tasks for a mining enterprise. The main principle of the successful functioning and development of an enterprise at the market is a rational usage of limited resources during the process of producing the goods and services in accordance with the laws of supply and demand. Besides, a mining enterprise is not only a production but also a socio-economic system, which is aimed at achieving the goals and satisfying the requirements of each subject of the enterprise (Artemiev, Lisovskiy, Galkin, Kravchuk, 2016). The working capability of a person and the results of his or her work are determined by a variety of interrelated factors, among which the conditions of work, which in the end predetermine the expenses and the results of work, are the highest on the list. Disregard to the importance of the organizational aspect in providing the labour safety is expressed in the system of activities and in production relationships. For example, the activity to remedy the violations of requirements for the production safety is

usually carried out according to the plan «one finds a violation – punishes a guilty person, often without paying attention to the reasons of such behaviour or of the actions of a violator. Meantime, as the analysis of opinions of employees related to the reasons of violations shows, almost 100% of violations of safety requirements are the result of the systems of enterprise and labour management, labour rationing and management of the industrial safety, which exist at the enterprise (Artemiev, Galkin, Kravchuk, 2016). In connection with this, we suggest another interpretation of conditions of work and their influence on an employee, in the basis of which there are fundamental provisions of the concept of the reliable provision of the labour safety (Artemiev, Galkin, Kravchuk, 2016):

- an enterprise (service, site, team) is necessary to be considered not only as a production system but also as a socio-economic system (Cherskikh, Galkina, Korkina, Lapaeva, 2017);
- human factor as the energy of the impact of an employee and the personnel as a whole on the production process, which is the main factor of safety and hazard of the production;
- system for managing the production safety is aimed at forming the safe conditions of work, which provide the fulfilment of the technology, relation of the personnel to safety as a condition of the productive work and efficient production; labour and process control;
- increase of the quality of the work process is a means of achieving a higher level of safety and efficiency of the production at the enterprise;
- an important element for increasing the quality of the work process is the organizational aspect of creating the adequate working conditions using the potential of such an institution as the labour rationing.

In the sphere of activities of coal producers there have been some sufficient changes, i.e., enterprises have become real subjects at the markets of goods, services, capital and labour. The transition of the state to market relations has radically changed the situation in socio-economic, production and labour relationships. De facto, employees have become the subjects of the labour market and this market is developing now. The subjectivity of an employee is expressed through the freedom of choosing the job by him or her, his or her requirements for the contents and conditions of work, as the source of meeting his or her socio-economic requirements. The labour rationing system at enterprises, in the basis of which the methodology, which considers an employee to be an object of rationing, is preserved, de jure prevents the formation of the market subjectivity of employees. In connection with this, it is necessary to develop the theory and the methodology of labour rationing, which provides an employee with the increase of his or her market subjectivity and allows him or her to meet his or her socio-economic requirements, and also allows to achieve the goals of its development for an enterprise. The market subjectivity of an employee is understood as a characteristic of an employee to be an active and responsible person in the system of labour relations; it is characterized with the ability of an employee to develop independently and in coordination with other subjects in accordance with the requirements of the labour market and it is determined by the following components: purposefulness, responsibility, qualification and tendency to development (has been developed by the author on the basis of (Ageeva, Kombarov, Korel, Lepskiy, Leontiev, Ognev, Pak, Petrovskiy, Rubinshtein, Temnitskiy, Uvarov). The insufficient subjectivity is not advantageous neither for employees, nor for managers, nor for the owners of the enterprise, nor for the state because it does not allow to increase the work efficiency, which is a source of dissatisfaction of employees with the quality of the working life and income, labour conflicts, growth of productivity and labour safety, which are insufficient for providing the competitiveness of enterprises, insufficient growth of tax revenues to the state budget. The abovementioned circumstances demonstrate the necessity to develop the theory and the methodology of rationing the work of employees of mining enterprises, which is aimed at increasing the market subjectivity of each employee of the enterprise by way of socio-economic

rationing of his or her working activities, which allows an employee to meet his or her socio-economic requirements, and also allows an enterprise to perform its socio-economic development as one of conditions of its effective functioning in the market environment. The objective of the paper is to provide a theoretical and methodological grounding for rationing the working activities of employees of a mining enterprise as a real socio-economic event and means, which allows to increase their market subjectivity, and also it allows an enterprise to achieve the goals of the socio-economic development successfully in conditions of the high dynamics of the functioning environment.

2. THEORETICAL BACKGROUND FOR DEVELOPMENT OF MOTIVATIONAL ENVIRONMENT CONCEPT

The philosophic and social interpretation of standards and rationing is represented in the papers of Plakhov V.D., Sidorenko N. I., Urvantsev B. A., Kuznetsova N. V.. The notion of a «standard» and its role in different spheres of activities and human behaviour have been investigated by Ball L., Paluck E.L., Mackie G., Moneti F., Shakya H., Denny E., Chandler D., Munday R., Elster J., Young H.P., Ellickson R.C., McAdams R.H., Rasmusen E.B.. Common principles for arranging and rationing the work are considered in the papers of A.K. Gastev, S.G. Strumilin, O.A. Ermanskiy, G.G. Prudenskiy, G.E. Slezinger, Y.M. Punskiy, V.M. Ioffe, A.A. Trukhanov, Y.G. Gomberg, A.E. Kotlyar, Y.G. Odegov, P.F. Petrochenko, N.A. Volgin, V.B. Bychin, B.V. Rakitskiy, G.G. Rudenko, A.D. Galtsov, B.M. Genkin, D.M. Gvishiani, S.V. Malinin, S.S. Novozhilov, E.I. Sherman, A.I. Shcherbakov. The analysis and the generalization of the experience of foreign enterprises in the sphere of labour rationing are performed in the papers of M.G. Moshenskiy, E.I. Aron, P.M. Orlov, I.E. Kolesnikov, R.P. Miuskova, E.G. Zhulina; the influence of the scientific and technical progress on the development of the workforce and the rational usage of labour has been studied in the papers of A.V. Bachurin, V.N. Belkin, E.N. Ruzavina, I.I. Changli; issues of specialist training in the sphere of arranging and rationing the work have been developed by B.N. Gavrilov, A.S. Dovba, V.M. Ryss. The research of the transformation of the system of rationing and regulatory activities in conditions of the market economy has been made in papers of Adamchuk V.V., Bartunaev L.R., Belyaev V.I., Bukhalkin M.I., Bychin V.B., Genkin B.M., Zubkova A.F., Karlova M.V., Katulskiy E.D., Loktev V.G., Malinin S.V., Nikiforova A.A., Novikova E.V., Petrochenko P.F., Rozhkova V.V., Slezinger G.E., Stolyarova V.A., Sofiyskiy N.A., Sorokina N.P., Suetina L.M., Pavlenko A.P., Serov V.M., Shubenkova E.V., Zhulina E.G., Yakovleva R.A., et al. In the mining science and practice issues of regulating the social and labour relations and arranging the work in the context of the development of technological, organizational, managerial and institutional methods and means for providing the competitiveness of mining enterprises have been addressed to in the papers of V.B. Artemiev, I.A. Baev, V.A. Galkin, N.V. Galkina, Y.G. Gribin, D.G. Dayantz, A.S. Dovzhenko, S.I. Zakharov, A.V. Kaplan, G.I. Kozovoy, T.A. Korkina, V.I. Kuznetsov, L.V. Labunskiy, A.M. Makarov, V.A. Pikalov, V.N. Popov, A.A. Rozhkov, A.V. Sokolovskiy, Y.A. Tolchenkin, et al. The organizational aspect of providing the health, safety and environmental protection for employees of coal producing companies is represented in papers of I.L. Kravchuk, V.V. Lisovskiy, E.M. Nevolina, A.Val. Galkin. The industrial issues of labour rationing for employees of mining enterprises have been considered in papers of Ayzen L.G., Batashova A.F., Gribina Y.G., Korobov G.A., Labkovskiy B.E., Lipatov A.A., Maizel L.L., Mishin G.I., Orlov R.V., Rubinskiy Y.I., Cherkesov E.Y., Kharchenko A.K., Khorev M.G., Yakovlev N.A., et al. Throughout this study we have taken into account the theoretical and methodological provisions of the socio-economic adaptation of a coal producing company to the dynamics of the environment of its functioning, which have been thoroughly studied in papers of E.M. Avramov, I.E. Gurkov, L.A. Rastrigin, I.A. Baev, E.V. Shiryaev, N.V. Galkina.

Also the well-known researches in the sphere of theory and practice of application of social and economic standards are the researches of A.G. Aganbegyan, L.I. Abalkin, G.Y. Kiperman, V.V. Leontiev, D.S. Lvov, N.Y. Petrakov, S.A. Sitaryan, V.N. Sokolov, E.G. Yasin, S.S. Shatalin, et al. The issues of determining the contents of social and economic standards have been discussed in the papers of such philosophers and sociologists as Y.A. Vasilchuk, Y.N. Davydov, G.G. Diligenskiy, A. G. Zdravomyslov, T.I. Zaslavskaya, V.D. Plakhov. The issue of social and economic standards has been addressed to by such researchers of the issues of economic psychology and economic sociology as V.N. Bobkov, A.L. Zhuravlev, S.V. Malakhov. When the systematic transformations in the society, state economy and transfer to market relations have started, the quantity and the depth of studies in relation to the issues of forming and using the labour standards and normative methods have remarkably decreased, however, their relevancy in practical activities has really increased because the requirements of employees increase but the opportunities and the sources for meeting these requirements and the conditions of their receival are not clear and are not defined in standards of labour activities. Employees have to look for these sources outside the enterprise – in credit institutions of a different level of reliability, which often inreases the social strain in the society. While analyzing the processes and the results of economic and social reforms which have been made for the previous twenty-five year, a range of authors draw attention to the fact that the reformation of social and labour relations has been going more difficult than even the reformation of the economic system due to the existing mentality and passivity of thinking, which have been built in by the previous socialistic system. At the beginning of 90s of the 20th century the new approach to the management started to form, which was principally different from the previous ones, which have been existing for decades. In the basis of this approach there is a human, who is considered to be «the most liquid asset of an enterprise». In the society there appears a need in using new approaches for rationing the work, which are focused on the priority of social standard-setting factors. One of these factors can be methodological and methodic instruments of the institutional economy, which studies the evolution of social institutions and their influence on the economic behaviour of people in different socio-economic systems (family, enterprise unit, enterprise, industry, state) (Bychin, Zabelin, 2013; Malinin, Bakhtizina, Startsev, 2016; Lapaeva, 2019).

3. METHODS AND PRINCIPLES OF SOCIO-ECONOMIC RATIONING OF LABOUR ACTIVITIES OF MINING ENTERPRISE EMPLOYEES

3.1. Principles of socio-economic rationing of labour activities of employees

Solutions for issues and problems of adapting the rationing system of the labour activities of employees to the modern requirements of the enterprise economy have been reflected in scientific and practical papers of different authors. The main recommendations for changing the system of rationing the labour activities, which have been suggested by them, mainly lead to the following forms:

- transformation;
- reorganization;
- evolution;
- improvement;
- alteration of the contents of a function, a process and an organization;
- improvements of methods for calculating the labour standards.

In agreement with the authors of studies about the improvement of labour rationing in relation to the necessity to provide the compliance of the state of the labour activity rationing with modern conditions and trends in the development of theory and practice of the labour arrangement, it is necessary to consider and to specify the principles of labour rationing.

When determining the principles, it is important that their contents should taken into account the following: trends in the development of the labour market; trends in the development and the condition of labour relations at the enterprise; level of technologies and organization of employee work with due regard to industrial peculiarities. Taking into account the peculiarities of the social and economic development of a mining enterprise and fulfilment of labour activities, and also realizing the essence of the socio-economic rationing of the labour activities of employees as a sphere of work, we have pointed out the basic principles, which are realized as a complex (Table 1).

Table 1: Methodological principles of socio-economic rationing of the labour activities of employees at a mining enterprise

Principle	Essence
Increasing the market subjectivity of an employee	Increasing the market subjectivity of employees means the positive dynamics of changing its qualitative and quantitative characteristics: purposefulness, responsibility, qualification and tendency to development.
Providing the contingency of social and economic benefits received by employees with the results of their work and conditions of their receiving	Contingency is a correlation and an interconditionality of social and economic benefits received by employees with the results of their work and conditions of their receiving
Increasing the stability of the social and economic development of an enterprise	Stability of the social and economic development is the preservation of the positive dynamics of indices and qualitative changes, which provide the transition of an enterprise to a higher level of social and economic results of activities.

The dominating principle is the principle of providing the contingency of social and economic benefits received by employees with the results of their work and conditions of their receiving. In case if this principle is not fulfilled, there is an insufficient coordination of working processes within the framework of the unified production process, which inevitably leads to multiple and significant technological violations. Besides, there are conflicts related to the amount of salary and evaluation of the results of work, hazardous production situations, etc. The usage of principles of socio-economic rationing in the rationing of work allows to increase the results of work and the level of satisfaction of employees with the salary. The developed complex of methodological principles of socio-economic rationing of the labour activities of employees is of a universal character because it can be applied for any industrial enterprise but only taking into account the peculiarities of the work arrangement.

3.2. Methods of socio-economic rationing of labour activities of employees

When forming the complex of methods of socio-economic rationing we have relied on the following provisions:

- firstly, methods must provide the realization of basic principles of socio-economic rationing of the labour activities of employees;
- secondly, methods must be selected for a certain component of labour activities;
- thirdly, methods must provide the cyclicality of the rationing process, i.e., efficient realization of each of its stages.

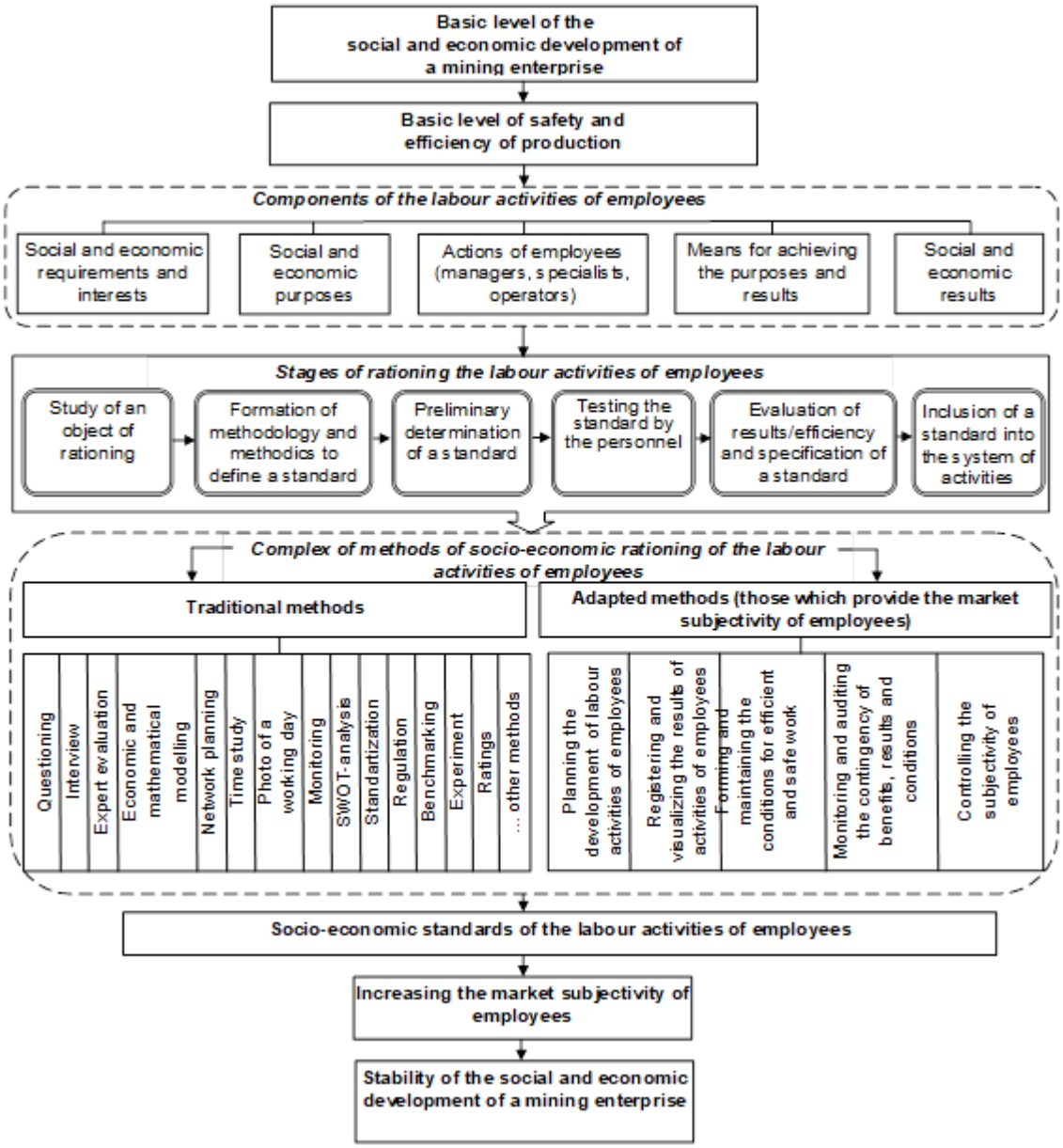
In the structure of methods, which are demonstrated in Picture 1, there are two groups: methods, which are traditionally used in the practice of labour rationing, and methods, which are adapted to

be realized at an enterprise of the socio-economic rationing of the labour activities of employees as one of types of managing activities. Selection of specific methods of socio-economic rationing depends on current level of subjectivity of employees, condition of the external and internal environment, purposes of the enterprise development and the level of acquisition of socio-economic rationing in the practice of managing the work at an enterprise. Testing the developed approach to the rationing of the labour activities of employees in the work of mining enterprises have demonstrated that the significant results of socio-economic rationing of the labour activities are achieved within 5-7 years on condition of concentrating the efforts of the managing personnel of an enterprise and a company. The realization of the developed methodological recommendations for forming the system of socio-economic rationing of the labour activities of employees at mining enterprises of Russia can provide the efficient management and improvement of indices of their economic activities not less than by 8%.

4. CONCLUSION - KEY PROVISIONS OF THE CONCEPT OF SOCIO-ECONOMIC RATIONING OF EMPLOYEE LABOUR ACTIVITIES

Basing on the available scientific and methodological fundamentals of the labour rationing, experience of fulfilling the socio-economic rationing of the labour activities of employees at some mining enterprises and of the scientific and research organization NIIOGR, we have enunciated the fundamental provision of this concept and have determined its key elements. The fundamental provision of the concept, i.e., constant social and economic development of a mining enterprise on the basis of increasing the market subjectivity of its employees is achieved through forming and acquiring the management of an enterprise of socio-economic rationing of the labour activities of employees, the essence of which is in determining, setting and maintaining the measure of compliance of social and economic benefits received by employees with the results of their work and conditions of their receiving – it actualizes, supplements and develops the theory and the methodology of the labour rationing, which has been historically developed and is being realized at present in coal producing companies. The principle under study is the influence of the market subjectivity of employees of a mining enterprise, which is formed by socio-economic rationing, on the level of its social and economic development. Key components of the methodology of socio-economic rationing of the labour activities of employees at mining enterprises are demonstrated in Table 2.

Picture following on the next page



Picture 1: Structural chart of methods of socio-economic rationing of the labour activities of employees at a mining enterprise

Table following on the next page

Table 2: Key components of the methodology of socio-economic rationing of the labour activities of employees at a mining enterprise

<table>
<tr><td colspan="4">Addressed issue</td></tr>
<tr><td colspan="4">Systems of labour rationing for coal producing companies, which have been formed during the period of the command management of the country economy, suppress the increase of the market subjectivity of an enterprise employee, i.e., one of the main conditions for increasing the level of the social and economic development of an enterprise</td></tr>
<tr><td colspan="4">Object of rationing</td></tr>
<tr><td colspan="4">Measure of compliance of social and economic benefits received by employees with the results of their work and conditions of their receiving</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">Increasing the market subjectivity of employees of all levels of managing the enterprise in order to provide the constant social and economic development of an employee and an enterprise</td></tr>
<tr><td colspan="4">Means</td></tr>
<tr><td colspan="4">Socio-economic rationing of the labour activities of employees at an enterprise – determining, setting and maintaining the measure of compliance of social and economic benefits received by employees with the results of their work and conditions for receiving these results.</td></tr>
<tr><td colspan="4">Key principles of socio-economic rationing of the labour activities of employees</td></tr>
<tr><td colspan="4">1. Increasing the market subjectivity of an employee
2. Providing the contingency of social and economic benefits received by employees with the results of their work and conditions of their receiving
3. Increasing the stability of the social and economic development of an enterprise</td></tr>
<tr><td colspan="4">Criteria of effectiveness of socio-economic rationing</td></tr>
<tr><td>Market subjectivity of employees</td><td colspan="2">Contingency of social and economic benefits received by employees with the results of their work and conditions of their receiving</td><td>Stability of the social and economic development of an enterprise</td></tr>
<tr><td colspan="4">Indices</td></tr>
<tr><td colspan="2">social</td><td colspan="2">economic</td></tr>
<tr><td colspan="2">Subjectivity level of enterprise employees</td><td colspan="2">Labour efficiency of an employee</td></tr>
<tr><td colspan="2" rowspan="3">Satisfaction of employees with their work and its results</td><td colspan="2">Average monthly salary of employees</td></tr>
<tr><td colspan="2">Added value at a workplace</td></tr>
<tr><td colspan="2">Specific salary in 1 ton of production</td></tr>
<tr><td colspan="4">Methods</td></tr>
<tr><td colspan="4">– traditional methods of labour rationing;
– methods for increasing the market subjectivity of employees</td></tr>
<tr><td colspan="4">Result</td></tr>
<tr><td colspan="4">Constant social and economic development of employees and an enterprise and satisfaction of increasing social and economic requirements of employees</td></tr>
</table>

Socio-economic rationing of the labour activities of employees at all level of management, which is formed and acquired by the management of the enterprise, in the basis of which there is determination, setting and maintenance of the measure of compliance of social and economic benefits received by employees with the results of their work and conditions for receiving these results, is an instrument for employees to increase their market subjectivity, to realize their social and economic interests, and for an enterprise it is an instrument to increase the dynamics of the social and economic development.

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CONCEPTUAL APPROACH TO JUSTIFICATION OF RUSSIA'S ECONOMIC-TECHNOLOGICAL PARADIGM OF DEVELPMENT

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ABSTRACT

Qualitative changes in understanding the dynamics and contradictions of global economic processes require a rethinking of previously known phenomena and trends which characterize the formation, development and transformation of socio-economic systems in modern conditions. This rethinking shows the need for fundamental changes in the theory of their development. The global substantiation of the methodological paradigm of the theory of post-industrial society is the economic and technological concept of the development of civilizations. This concept involves the development of the productive forces of society by creating a hierarchical level of production. The purpose of this article is to create a unified stance on the main provisions of the socio-economic development strategy and to facilitate the adaptation of the of technological development's doctrine of Russia. The authors recognizing the legitimacy of existing approaches to the formation of an economic and technological concept. In the same time they substantiate their own scientific position due to existing conditions and factors: a system of economic-social relations based on the use of digital information and communication technologies; increasing interactions of participants in technological and economic processes through modern electronic communication channels; assimilation of objectivity, etc. The essence of the economic and technological concept is presented from the perspective of understanding the current global processes leading to a change in the technological structure and models of economic growth. Based on an interdisciplinary analysis of the economic and technological development of systems authors determine the characteristics (quantitative and qualitative), stages (divergent and convergent) and conditions (appearance of innovations, technological selection) of their formation and development. Paper describes the development challenges and priority areas of technological transition as well as risks and scenarios. Authors reveal the role of high-tech sectors of the economy as catalysts for the innovative development of the system. Paper proposes methodological tools for monitoring structural shifts (the effect of the development of the high-tech sector multiplies the development of other sectors of the economy and provides a transition to the new technological structures). As a result of the study there are developed theoretical and methodological principles of the economic and technological concept of economic development in the context of a holistic development paradigm. Authors reveal factors affecting the formation of a new society, identify patterns of economic development as well as the possibilities of applying the concept to form strategic concepts of Russia's development. It gives readers new understanding of the processes and phenomena that characterize modern multidimensional civilization, its transformation and reform.

Keywords: *economic and technological concept, structural shift, economic growth, development challenges*

1. INTRODUCTION

In the conditions of civilizational transformations of the national economy and globalization of world processes, the problem of reforming the Russian economy is becoming particularly relevant. The real need for restructuring the country's economic space is due to the existing raw material growth model, which carries specific threats to the stability of socio-economic development, as well as challenges to maintaining its competitiveness. Currently, the process of reindustrialization of world economies can be considered as a way out of recession and the basis of a new model of economic growth. Reindustrialization will realize the potential of industrial and technological spheres. In this context, the economy faces an urgent need for the formation of a new theoretical and methodological approach based on an assessment of the resonant responses of the economic system to the controlling effects of industrial policy mechanisms. The methodology for assessing the expected outcomes should lie in the plane of trends associated with the economic and technological development of micro- and macro-systems, self-organization and dynamic stability of economic systems in the transition to a post-industrial society. Thus, the basis for modeling economic and technological development should be investment and innovation dynamics, assessed in terms of a synergetic approach, and reflecting the nonlinear relationships of nonequilibrium processes of capital renewal, technological changes and socio-economic growth in open economic systems at the macro-, meso- and microlevels. B. Berry (1991), G. Dumenil (1994), C. Freeman (1982), G. Dosi (1982), H. Haustein (1987) consider the theory of technological paradigms and trajectories of scientific and technological development. C. Perez-Perez (1986) and G. Dosi (1982) present the relationship of technological and institutional changes in the economic system. The Russian school of long-wave dynamics (based on the concepts of N. Kondrat'ev (2002), P. Sorokin (1997)) presented by works of S. Glaz'ev (1992, 1993, 2008), D. L'vov (1992), L. Myasnikova (2006), S. Rumyanceva (1998, 2003). Questions of introducing new equipment, technology, R&D efficiency, scientific and technological forecasting are reflected in the works of N. Gaponenko (2008), V. Martin (1996), G. May (1996), and actively developed by I. Pilipenko (2005), A. Falom'ev (1996), S. Valdajcev (1989). A new approach in Russian science appears in the study of the theory and methodology of the technological development of economies, inspired by the works of S. Glaz'ev (1990), Yu. Yakovec (1984, 1988, 2001), V. Maevskij (2001).

2. RUSSIA: A NEW TECHNOLOGICAL REVOLUTION, CHALLENGES AND OPPORTUNITIES

In the period 2000-2015, in most developed countries of the world, the potential for further growth of fundamental macroeconomic indicators in the current economic and technological order was close to exhaustion. A rapid acceleration of economic growth using new sources and maintaining the competitiveness of products is urgently needed for the Russian economy.

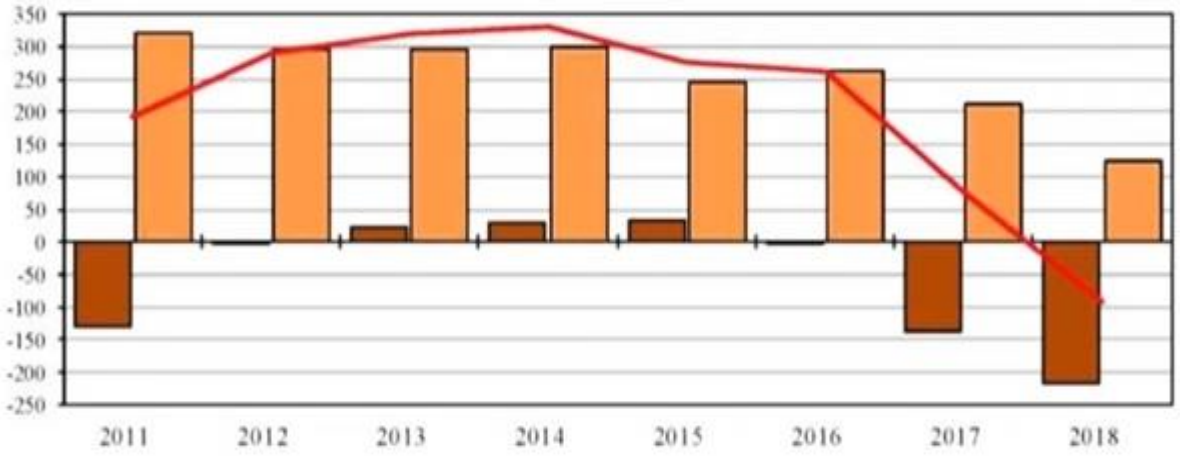
A new scientific and technological paradigm is called upon to rebuild the economy based on new technological solutions, supported by the leading countries of the world. The most significant contribution to technological and economic growth in these countries should be made by innovative designs (products) and advanced technologies. The use of it will lead to a large-scale transformation of the production, technological and social spheres. The basis for the transition to a new type of socio-economic growth is «breakthrough» production technologies and «radical» innovations, which can significantly increase the overall productivity of the sectors of the economy and social sphere, and ensure the achievement of a new quality of production and technological processes. The large-scale changes taking place today in the production evaluated collectively as the «new industrial revolution» (the «fourth industrial revolution» or «technological revolution»).

According to the research of scientists of the center for strategic development (V.N. Knyaginin, G.I. Idrisov, A.S. Kuz'mina, E.S. Rozhkova, D.V. Sanatov, D.K. Sultanov) (2017), the main characteristics of this revolution are:

1. Transformation and enlargement of digitalization processes.
2. Formation of a new model of socio-economic development based on advanced production technologies and an exponential increase in the degree of their use.
3. Virtualization of technological systems. The construction and implementation of solutions, combined technological, design, information compatibility, implemented on the principles of remote collective access to distributed resources, which determine the successful existence of these technological systems.
4. Transition to advanced product lifecycle management.
5. The allocation of the scope of creation, transmission, and processing of data into determining resources, the effective use of which creates new industries, products, management systems, and tools for profit.
6. Market entry of new companies — suppliers and developers of breakthrough technologies, goods, and services.
7. Large-scale technological transformation of the financial and banking systems, providing acceleration and convergence of all the above changes.

The bulk of the breakthrough production technologies that underlie the technological revolution were developed from the 1980-1990s. However, it was possible to comprehensively comprehend these technological solutions only at the beginning of the 21st century. This allow the transition to revolutionary transformations of large production systems and industry markets. Nevertheless, despite the real potential, the Russian economy so far is showing very modest results in this regard. According to the research of Professor N.V. Zubarevich, (a report in the Council of the Federation of the Russian Federation «Trends in the Development of Russian Regions») (2019) at present, a critical situation has developed in Russia in demography, economy, living standards, and institutional environment. Demographic problems are increased depopulation (mortality is higher than the birth rate) and decreased migration population growth. Since 2018, the population of the Russian Federation has been declining. So, for example, in January - August 2019 by 52 thousand people (natural decrease -219 thousand people, migration growth +167 thousand people) (Fig. 1).

Figure 1: Components of population change, a thousand people



Where: – natural population growth; – migration growth of the population; – total population growth

In the investments sphere, a crisis decline in investment observed in more than half of the regions. The growth leaders are only Moscow and priority regions (budget investments). That is, the increase in investment concentration is carried out mainly in regions with competitive advantages and oil and gas agglomerations. Moreover, as a result, such investment flows reinforce inequality (Fig. 2, 3, 4). Investments are still below the level of 2013 (-4% in 2018) The growth in the first half of 2019 was only -0.6%.

Figure 2: Dynamics of investments in the regions, 2018 to 2013,%

Where: 1 – Centre; 2 – North-West; 3 – South; 4 – North Caucasus; 5 – Ural; 6 – Siberia; 7 – Far East

Figure 3: Share of regions in investments in Russia in 2014,%

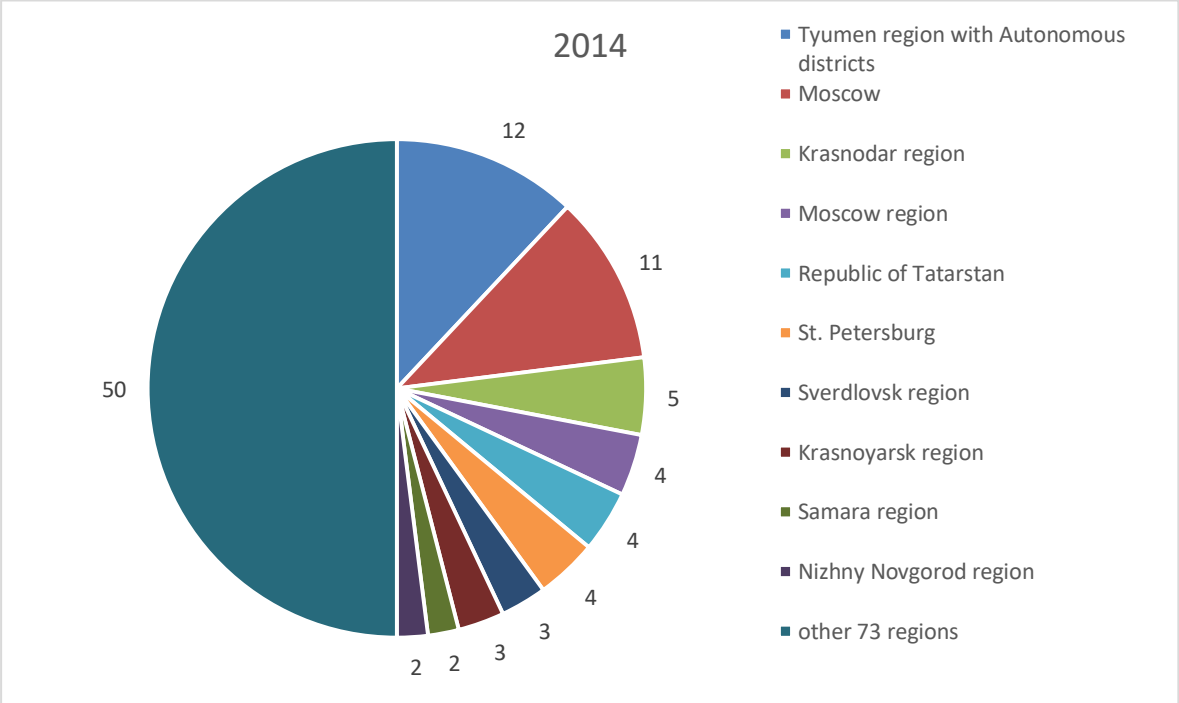
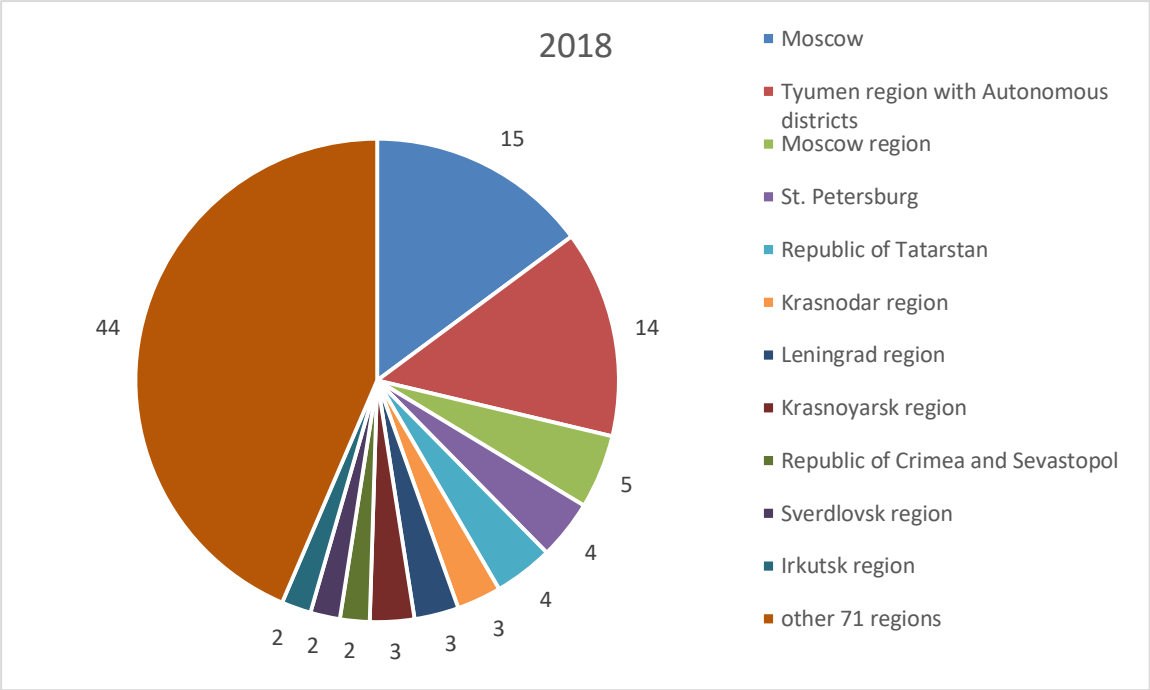


Figure 4: Share of regions in investments in Russia in 2018,%



Regarding the institutional environment, institutional barriers drive low municipal development. The financial resources and power of large cities are limited; the budgets of urban districts depend on transfers from the regional budget (table 1).

Table 1: The structure of budget revenues of urban districts of the Russian Federation,%

	2010	**2016**	**2018**
Income tax	1	0,3	0,3
Personal income tax	25	20	21
On total income	4	5	5
Property tax	7	6	6
Transfers	47	58	59
Including subsidies	6	5	5
Subsidies	17	15	16
Subventions	20	35	34

In addition to the universal «big challenges» - the exhaustion and decline in the efficiency of using traditional resources, the demographic contraction and aging of the population, the lag in life expectancy growth from other industrialized countries, the steady decline and territorial polarization of investments, the substantial institutional barriers to the development of large agglomerations - Russia is faced with a complex specific challenges and problems that determine the features of its inclusion in the technological revolution (the introduction of sectoral sanctions about the EU and the US; the deployment of large-scale technological modernization associated with the timing and extent of growth, modest results in the implementation of the digitalization process and «platformization» of the economy). Russia's lag is currently observed in other key indicators of the new technological revolution. Among the main problems can be identified: the low level of activity of industrial companies in the implementation of innovative activities, the change in the "structure" of exports, the lag in the development of advanced technologies, the low pace of the digitalization and platforming of the economy. In general terms, a comparative description of the values of the leading indicators of the new technological revolution presented in table 2.

Table 2: Comparative characteristics of the place of Russia in some indicators of the new technological revolution

	Indicator	Russia	Leading countries
1.	Number of platform companies (2015)	3	China - 64, USA - 63, UK - 9
2.	High-tech export volume, billion USD (2015)	9,7	China - 554.3, Germany - 185.6, USA - 153.5, South Korea - 126.5
3.	Labor productivity, USD per man-hour (2015)	25,9	The average labor productivity indicator in OECD countries is 50.8, including in: USA - 68.3; France - 67.6; Germany - 66.6
4.	The proportion of organizations implementing technological innovations,% (2014)	8,8	Germany - 55, Sweden - 45.2, Finland - 44.6, Netherlands - 44.5
5.	The proportion of subscribers of high-speed broadband networks,% of the total number of fixed broadband network subscribers (2015)	58	South Korea - 100, Israel - 97, Great
6.	The share of online sales in the total retail turnover,% (2015)	4	USA - 20, Great Britain - 20, France - 15, Spain - 15, Italy - 9
7.	R&D expenses,% of BBP (2015)	1,1	South Korea - 4.23%, Germany - 2.93%, USA - 2.79%, China - 2.07%,
8.	Number of patents granted (applicant's country of origin) (2015)	24998	China - 279 501, USA - 257 108, South Korea - 109 107, Germany - 86849, Great Britain - 21 503
9.	Place in the ranking of the Global Innovation Development Index (2017)	45	Switzerland - 1, Sweden - 2, Netherlands - 3, USA - 4, Germany - 9, South Korea -
10.	Place in the International Ranking of Industrial Competitiveness (2016)	32	China - 1, USA - 2, Germany - 3, Japan - 4, South Korea - 5, United Kingdom - 6
11.	Place in the Networked Readiness Index (2016/2017)	41	Singapore - 1, Finland - 2, Sweden - 3, Norway - 4, USA - 5, UK - 6.

Sources: 1. Global Platform Survey, The Center for Global Enterprise, 2015; 2. World Bank; 3. OECD; 4. Rosstat, Eurostat; 5. International Digital Economy and Society Index (I-DESI) 2016; 6. RBK, HSE, I-DESI 2O16; 7. OECD; 8. WIPO; 9. Global Innovation Index (GII) 2016; 10. Deloitte Global Manufacturing Competitiveness Index 2016; 11. WEF

Russia remains a high potential for making a technological transition in various sectors of the economy. However, the dynamics of economic and technological macro-indicators do not allow to be included in the global trends of the new technological revolution effectively. In this context, the issues of stimulating structural transitions and entering the innovative path of development of the national economy should be the subject of conscious and systematic state policy in the scientific, technological and industrial spheres. The technological revolution will have a profound influence on the branches and sectors of the Russian economy that form its traditional primary sector. The features mentioned above of the economic situation and the ongoing innovation and technology policy, as well as the indicators indicated, indicate that Russia delayed with the active inclusion in the new technological revolution. The country needs to make additional efforts not only to compensate for the gap that has arisen but also to act in a leading mode in some priority areas in which there is potential and formed backlogs. For Russia, the technological revolution means not only the formation of new sectors, but also profound technological and organizational changes in traditional industries.

Traditional sectors of the Russian economy will be forced to solve problems in the next 10-15 years:

- maintaining a competitive position in the national and global markets;
- active dissemination of breakthrough production technologies;
- transformation of business models of the behavior of economic agents.

Taking into account the current structure of the Russian economy, the current level of development of the national innovation system, and the complex of identified risks, the country's transition to a qualitatively new economic, industrial and technological paradigm will depend on the coordinated implementation of the chosen development scenario.

3. RUSSIA: DEVELOPMENT SCENARIOS

All possible areas of economic and technological development can be implemented in various combinations, combinations and sequences of existing development scenarios. The general conceptual principles and approaches of scenario-based socio-economic development of the macrosystem described in several works by scientists and policy-makers. All scenarios for the long-term development of the Russian economy presented in the forecasting developments of various organizations can be divided into two groups: «thematic» and «complex» scenarios. «Thematic» scenarios based on some motivated ideas about the preferences of various population groups in the future socio-economic development of the country. The work of the Center for Macroeconomic Analysis and Short-Term Forecasting for Russia contain the experience of developing scenarios: the scenarios «super-industrial modernization,» «a throw into globalization,» «economic isolationism,» and «energy autism» (Belousov A.R. (2005, 2006)). Various combinations of endogenous and exogenous factors grouped depending on the assessment of the «degree of favorable» development conditions (low, medium, high; pessimistic, realistic and optimistic). According to this principle, medium-term forecast scenarios are formed (2016, 2017), the INPRAN long-term forecast (inertial and internally oriented, investment) (2013). In essence, the «pessimistic, realistic and optimistic» are conservative, innovative and targeted (forced) scenarios of the «Long-term forecast of the socio-economic development of the Russian Federation for the period until 2030» (2013).

4. CONCLUSION

Analysis of the existing level of socio-economic development and its implemented models, three main scenarios of economic and technological development identified, which are the most likely in the forecasted future economic conditions. The development of scenarios preceded by the process of identifying sustainable economic, technological and demographic trends. The proposed scenarios differ in both endogenous and exogenous conditions (the value of primary resources, distribution and redistribution of various types of rents, functioning production and technological chains, competitive advantages of economic agents). Technological breakthrough (provides a technological breakthrough in priority sectors of the economy: transport, defense, housing, energy, agriculture, actively attracting direct portfolio investments, changing the institutional environment for innovations and high-tech enterprises). Reindustrialization (tax reform, the formation of an adequate financial system, the transformation of the state-corporate sector, the creation of world alliances to accumulate monetary and investment resources, economic involvement in the system of world economic relations, political integration processes). Infrastructural modernization (using a temporary crisis factor to eliminate and curtail inefficient production, tight fiscal policy, institutional reforms, improving the efficiency of key companies and industries, targeted measures to support individual sectors of the economy). Numerous studies show that the peak of the new technological revolution predicted for the 2020–2030s.

In this regard, Russia must decide whether it is performing the structural maneuver necessary to implement the new development model, the foundation of which will be high-tech industries.

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FACTORS INFLUENCING EDUCATION SYSTEM

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ABSTRACT
The change of the management business model has been widely discussed in the recent years - the one of the country as well as that of single structures, sectors and organizations. This is a serious intervention for each of these levels as far as it requires a strategic transformation to be made. Universities are among the institutions, for which the business model transformation (or its establishing) becomes more and more urgent. The report examines possible options for developing the relationship between the education system with the economy.
Keywords: *education, development, business model, investment, business environment*

1. INTRODUCTION

Modern technological development implies an intensive transfer of knowledge and skills. The channels of this transfer are different, but there is one major one, and it is the one which starts with education. The almost eternal topic for the connection between education and business environment/economics has had its different dimensions during different periods of the development of the two systems, but has always contained one essence - knowledge and skills acquired in education, which transfer to the jobs in economic subjects. This transfer is almost direct at the lower level of technological development, because the school basis is sufficient to satisfy the needs of the respective technology, equipment, machine. Such a "direct" transfer is difficult to achieve in the 21st century. This is so due to the accumulated differences in the dynamics of development of the two systems. The educational system is lagging behind the economical one and is gradually losing its ability to satisfy the requirements which are being placed on it. Such a tendency is characteristic of all educational systems of the modern development of society. Some have quickly created effective mechanisms for overcoming this inequality. This process continues to accumulate deficits in Bulgaria, regardless of the attempts to transfer external models of interaction, which, in our opinion, are impossible to be automatically approbated and in practice cannot realize the missions of their carriers. This creates a particular discomfort in the development of the educational system, by limiting the development of the social technologies, the social ones in particular. Discussing this issue, it is important to ask the right questions (specific and accurate ones) in order for the right answers to be found as well - the affected groups (which we can clearly and accurately determine and distinguish), the possible models (applicable in the dynamically changing environment), a toolkit (contributing to the development of social technologies). An important point is to monitor this interaction in order to ensure a corresponding analysis and decisions to be made, related to its effectiveness, efficiency, sustainability, and flexibility. The importance of the controlling mechanism and the ability to accurately account for defects in methodology, technology or in the process as a whole, would allow for quick and accurate corrective actions. In the period of active transformations in the last thirty years, the evaluation mechanisms are mostly follow-up, and if there are such that are throughout the whole impact process, then the corrective actions are with low effectiveness or are after the end of the monitoring. It is not particularly acceptable to make decisions for corrective actions after the conclusion of a rather long period of time (a few years). Part of the specialists in this field are trying to explain that the effect of the introduction of new models and technologies is manifested at a later stage.

This statement is also not devoid of logic, but the negative impact of an incorrect assessment of the current condition will increase and even repeatedly multiply the final negative result. Unfortunately, the results of the models, technologies, programs, etc introduced so far, brings the situation to a rather critical level, as the two systems - the educational and economic one - move away and do not find the points of contact that are fundamental. It is correct to point out from a scientific point of view that the educational system is perhaps part of the economic system and that in this particular case we should consider it as the system of the national economy.

2. THE INTERACTION: BUSINESS – EDUCATION - INVESTMENT FOR DEVELOPMENT

There are several keywords that determine our attitude towards the interaction education - business environment in the conditions of "knowledge-based economy" - dynamics, high technological effectiveness, key skills, digitalization, artificial intelligence, innovations, investments. Of substantial importance is the change that is currently taking place in the labour market, linked to the need to have multiple skills to solve the multitude of problems with which a job is connected with. The time of narrow specialists is passing, and this must be clear both to education as well as to the business environment. However, the two systems have a different understanding and a different interpretation of the situation, and this creates the deficits we are witnessing. Undoubtedly, the national labour market is a dynamic system which has its own characteristics. Even within the scales of the different regions of Bulgaria, it has different and considerably distinctive characteristics. This is especially typical in areas where the unemployment rate is much higher than the one for the country. It turns out that having a degree of higher education is not a sufficient condition to ensure the proper employment of a particular group of specialists due to the lack of need for such in this area. Obviously, the market mechanism that demand will determine supply, does not fulfill its function. This is not an isolated phenomenon and is observed in many of the crisis areas of the country. The lack of the planning element from this management process places insurmountable obstacles to the individual in these areas. It is possible that the bearers of this workforce have good competences - skills and experience, and cannot realize a successful result in the search of a job. The low mobility of the workforce in these areas also causes a negative impact. This problem cannot be examined unilaterally because it includes in itself various elements that can be difficult to overcome. Sometimes this is related to the Bulgarian folk psychology. Infrastructure, transport links, social adaptation in the new locality, etc can be included in this group of reasons. Education and the economy are two independent areas of social relations, and they can be situated in different positions relative to each other. The conservative model of development puts the two systems in relative equilibrium. Education is perceived as a given, almost an appendage, without being given any exclusivity whatsoever. It is being relied on "ready cadres" that are simply redistributed from one system to another. In this model, the level of education and the level of technological effectiveness have a relative correspondence, or at least the impression of such a status quo is maintained - i.e. whatever is being studied, it exists in practice in the economic subjects, due to which the transfer is direct without there being a need for additional education and training. The overall system is balanced. This may be called a model of sufficiency. The dynamic model leads the economy to a priority position due to the higher level of technological development. Education is lagging behind in terms of the practical part, though it retains its level in terms of the theoretical educational preparation. Transfer from one of the systems to another is no longer direct, it can be defined as indirect, due to the need for adaptation or additional education and training. The level of correspondence is low, the overall system of accumulation of added value is imbalanced. The “relationships” between education and business can evolve under different scenarios - systems are independent of each other;

education determines the direction of development; business determines the direction of development; both systems develop according to an adaptive mechanism. In different periods and under different socio-political systems, these scenarios or combinations between them occur in different options. The 21st century is characterized by high technological effectiveness and high dynamics. We are talking about Industry 4.0., that is, about the fourth industrial revolution. After mechanization (Industry 1.0), mass production (Industry 2.0) and automation (Industry 3.0), which can be referred to the model of sufficiency, digitalization is now becoming an integral part of production. Industry 4.0 has the potential to create extraordinary opportunities for growth and competitive advantages. Prognoses indicate that enterprises will be able to increase their productivity by about 30% if they use Industry 4.0. At the same time, education does not have its "Education 4.0", despite the advent of computer technology and the Internet, both at school and at university. However, this advent is only as an auxiliary and not a leading tool. Remaining at level 2.0 or 3.0, education is not able to directly transfer its educational product to the industry. In this case, the deficit is present and it is by no means imperceptible. This categorically requires to be analyzed all possible options for the realization of the scenarios of the interaction education - business environment, all the positives and negatives to be taken into account, in order to find that one which would satisfy the development of society.

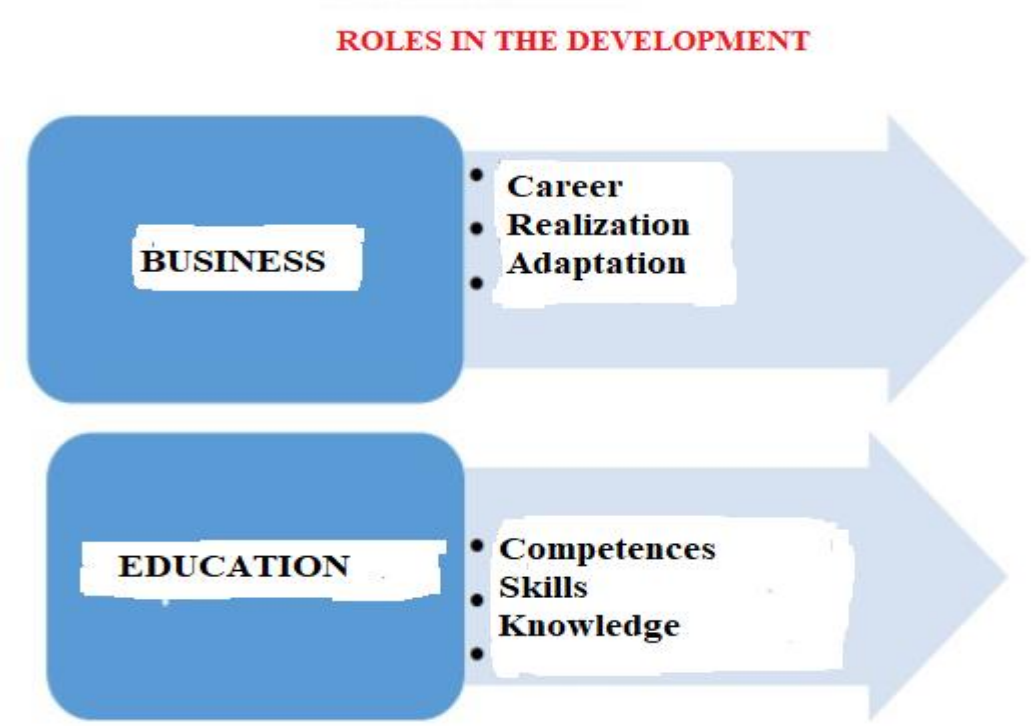

Figure 1: Roles in the devopment

The interaction business environment - education is realized in the structure of the educational system and in the context of the corresponding socio-economic system, but this is not the only factor that influences it. The conditionality of this consideration boils down to discussing the interaction of vocational education and business, i.e. the pair which provides realization through professions / higher education is also included in vocational education, providing professional realization in respective professional fields . The traditional understanding of the relationships between education and the economy / business is defined by the status quo "education educates - the economy consumes". This understanding is characteristic of different economies - predominantly planned public or private ones. Naturally with characteristic nuances.

The new understanding includes a new paradigm - continuous education / lifelong learning, which can be realized outside the educational system, incl. on the terrain of the economy. This understanding also relates to different types of economies (fig. 1)

2.1. Option "Full Regulation"

In this model, the process of entry and exit from the vocational education system is completely controlled. It implies strict and synchronized planning, so that the concurrence of the exit from the educational system and the entry to the economic part, is close to 100%. Planning is a critical zone in this model - it must be carried out by the economic part by providing information about jobs according to vocational directions, educational degree and qualifications, and the respective administrative educational structures should determine the required admission for entry. This means, in addition to "usual" planning, the methods of forecasting research are also to be applied, which will support the long-term decisions for the labour market. It should be understood here that the educational system produces that which can be realized in the economic part. In this model, 100% realization of graduates of a certain degree of the educational system (vocational education) is accomplished. The model can be implemented in any socio-economic system. From the point of view of freedom of choice, mobility, the democratism of the functioning of systems, this option is very restrictive. From the point of view of securing employment and reducing the unemployment rate, it has its positive elements, because even with the differences between education and the economy in terms of quality of preparation, insufficient knowledge, lack of qualifications, etc., the full regulation is implemented. Such an option may be applicable in regions with critical employment rates, severe and undesirable social processes, or after periods of disasters. This option may be similar to the linear structure of an organization in which each action is set and controlled with a clear result.

2.2. Option "Market Mechanism"

Both systems are free in planning, in the case of such. Many experts consider that, in a market economy, planning is an unnecessary process. In this context of reasoning, the Model implies a free determination of the entry to education and does not regulate synchronization with the entry to the economic part. Two important parameters come into view here - the educational market and the labour market, which interact to a certain extent but redundancies in different areas of professional directions appear, and "fashionable" professional directions emerge as well, which satisfy temporary deficits in one or another economic area. The educational market can be regulated through the appropriate state mechanisms by using the "capacity" criterion of the educational structures. The disproportions between the educational market and the labour market, i.e. between supply and demand, however, cause unemployment and a decrease in employment, or employment that needs additional training (without which it cannot be carried out). The lack of job vacancies for certain groups of professions can lead to discouragement for young specialists and provoke a number of reactions, including leaving the country. The surplus of specialists in other areas also acts restrictively on the social system and demotivating to the individual. This model is strongly liberal. Experts define it as "neoliberal" in the context of the common development policies. Based on the unification of the systems, the globalization of processes and ensuring the functioning of the single educational and single economic area (EU level). This option is usually realized in periods of change of socio-economic models of societies (societies in transition) and are elements of crisis factors for the economy. Studies in the 2011-2018 period in different regions of the country show mutual dissatisfaction between the two systems. Education is developing by its own logic, regardless of the state regulation which is being implemented.

The business is dissatisfied with the lack of cadres in certain areas and with the level of preparation of young specialists. Young specialists are dissatisfied with the quality of jobs and the lack of realization.

2.3. Option "Adaptation"

This option can be established as an adequate collective image of all the others. It imposes a continuity in the improvement of the educational system by changing the curricula and programmes, which it can bear, and several synchronizing steps which are taken by the economic system, namely - organizing adaptive training for young specialists; internship period in the last years of studying; mixed teaching teams from among education and business representatives. This model requires an organization that needs sufficient freedom of action, initiative, innovation, two-way investments. An element of this option is the so called dual system. To realize it, an active working economy is required and a good environment for all forms of business - small, medium, large, so that results can be achieved in different directions and the economy does not develop unilaterally. This option has the potential to develop synergies because it can bring together the positive elements of both systems.

2.4. Option "Congruence"

In theory, another option is possible, called "Congruence". This option is an antipode of the market one. It is rather difficult to implement unless there is a clear national policy, i.e. with clear synchronization, with continuous and accurate forecasting of the needs of the economic system in quantity (number) and quality (set of specialists), with a continuous change of the educational system to meet the requirements of the economy and to create mechanisms for transfer of knowledge and skills between both systems. Consumption prognoses must be accurate and the supply by the educational system as a response should be fully feasible. An important requirement for its realization is to have a dynamic model of development of the two systems - the educational and the economy, under the conditionality of the emergence of new or the disappearance of old professions and objectively anticipating the movement of the economy. In the presence of a relatively small labour market, this option is difficult to realize because it imposes high dynamics on the educational market, uncharacteristic of the conservative nature of the educational system, even with serious efforts in this direction. The real mechanism of interaction is never unambiguous and one-sided - there is always a mix of different elements - conjunctural, political, as a result of the influence of the external environment. Very often this degree of influence is so strong that the internal environment cannot adapt, but is "subordinated" to the main influencing factors. This mechanism depends to a certain extent on the legislative norm, which often changes and causes transformations and reforms that are implemented without serious analyses, reliable impact assessment and risks. In the presence of such analyses of the condition of this interaction, they are sporadic, done according to different methodologies, by using a different toolkit, which makes the conclusions from them also ambiguous and ultimately incomparable. Even due to the fact that changes in the environment are dynamic enough and the formulation of a sustainable research toolkit are dependent on the situation and the respondents' willingness to participate in the studies. The research conducted in the period between 2011 and 2018 outlines several groups of problems that need to be taken into account in the building up of a modern concept for the interaction education - business environment, which will correspond to the main principles and priorities of the concept Industry 4.0. The study categorically indicates that economic subjects prefer the interaction with education to develop under the 'adaptive' scenario. Insofar as this expose is merely analytical in nature, without seeking specific examples and substantiating the theses of the authors, which are the result of our many years of efforts in this direction (Bogdanova, Terziev, 2019).

3. CONCLUSION

The social processes in the period of study do not imply full regulation of the interaction - the development of the economy according to market mechanisms implied the possibility of the interaction education - business under one of the other options - market or adaptive mechanism as it became clear above, the congruence mechanism is almost theoretical. The chances for implementing policies and strategies in this direction implies focusing the efforts and expertise of scientists, researchers, and of course the participants in these processes. Defining the same, or more precisely defining them in what direction, time range and territorial scope of action, is especially important (regardless of the relatively not big territory of the country). This type of social processes is especially difficult to analyze, monitor, predict, and manage. The indicators and criteria for their evaluation are complex, difficult to define, and mathematically difficult to describe. Our experience has shown that social technologies are far too advanced from scientific point of view, but difficult to adapt and transfer to another environment. The management of social processes, which undoubtedly include the elements of educational systems, economic systems, etc. are complex not only in their nature but also in their essence. This requires making a great deal of effort in this direction to achieve or to make the right and adequate development decisions in this direction (Terziev 2019a).

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PRACTICE OF PRESCRIBING PROTOCOLS OF WRITTEN BUSINESS COMMUNICATION IN CROATIA

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ABSTRACT

The primary goals of the organization, which are achieved by the management of the quality system, speak about the importance of uniformed prescribing of all business processes, including business communication, and they are to increase the efficiency of the business through speed in finding and/or distributing data. These considerations do not relate to the IT protocols that prescribe digital communications connections but the protocols that prescribe the general and overall communication of a business organization. As one of the most important advantages for an organisation is a written trace that can be accessed at any time if properly archived, written communication needs to be well planned and is of the highest importance as such it becomes the key company strategic priority. By ensuring that written communication is conducted according to the default protocols, the organization will ensure itself consistency and compliance at all levels. With this premise, the question arises whether the importance of prescribed written protocols is recognized and whether protocols exist as such in business practice in the Republic of Croatia. Also, a survey of 111 respondents was to determine the respondents' perception of the impact of prescribed written communication protocols on business performance. The additional hypotheses put speak of the difference in the frequency of existence of the prescribed protocols of written communication, considering whether it is an organization of state and public administration or some other organization from different sectors of the economy, as well as the difference in the perception of the importance of such protocols, depending on what type organizations respondents come from.

Keywords: *written communication, written communication protocol, quality communication in the organization*

1. INTRODUCTION

Communication between employees of the organization is one of the key factors that keeps the organization stable. The business world is a dynamic and complex environment, so great effort should be invested in building quality business and communication relationships between the organization itself and business partners. Suppliers, customers, the public, the market are just some of the groups that an organization needs to communicate with at the business level (Glavas and Lamza-Maronic, 2008). Business communication is the foundation of all business relationships. The importance of business communication is evident in: linking production and sales, influencing marketing activities, facilitating business logistics activities and managing human resources. In order to achieve important business goals and build a positive image of the company in public, business communication is a key factor (Bolfek et al., 2017). There are four basic types of communication in terms of the way information is conveyed: oral

communication, written communication, contact or non-verbal communication, and e-communication (Jurković, 2012). For the purpose of drafting this paper and the defined topic, the emphasis is on two key concepts, written communication and protocols, that is, recognizing the importance of protocols of written business communication in the Republic of Croatia. Written communication brings an important part of every business, both inside the company and with the external environment, and can be transmitted in paper or electronic format (Komarčević et al., 2012). When a high quality message is sent, then written communication becomes planned and necessary. One of the most important advantages of written communication comes from the written trace, which, if properly archived, can be accessed at any time (Fox, 2006). Although business writing has several forms and means of communication, choosing a particular type of document will be related to the very purpose of the writing (Rouse and Rouse, 2005). Choosing a means of communication should never depend on cost but efficiency, so it is necessary to understand the strengths and weaknesses of each means in order to effectively choose the means of intercommunication in an organization (Holtz, 2008). It is by no means desirable to face too much improvisation in written communication, which is why certain protocols occur, especially when it comes to the given form and sequence of written communication within an organization. As well in a company with significatelly branched organizational structure, it is necessary to have determined paths of communication and obligation of the communicational direction should be clearly stated. Other terms of importance for this work are protocol and business protocol. Although the term protocol comes from diplomacy, it is also used in other situations, so we can say that protocols are general principles in international and interpersonal relations written down as rules of protocol (Ozanic, 2019). Protocols are established by organized consultation of interested parties or formally accepted as standards by the International Organization for ISO Standards (Berković, 2006). Business protocol contains rules of conducting and organization of certain business activities, which help in creation of a positive image and reputation of a company. The way people are treated, the way they communicate and behave is an important element of any successful enterprise. Businesses where employees do not know how to behave and communicate with people inside and outside the organization cannot expect market success (Ozanic, 2019). Accordingly, the business protocol would indicate the overall mode of behaviour prescribed for official situations, covering all aspects of communication, as well as making agreements and negotiation with employees and partners.When it comes to the protocol of written business communication in the Republic of Croatia, the literature does not show much. Written communication protocols allow communication to align with the company's key strategic priorities. By ensuring that written communication is conducted according to the default protocols, the organization will ensure itself consistency and compliance at all levels. By default, the organization ensures that any communication follows the rules of clear use. This means ensuring that all employees understand how to communicate properly in writing (Traxler and Gernsbacher, 1992).

2. METHODOLOGY

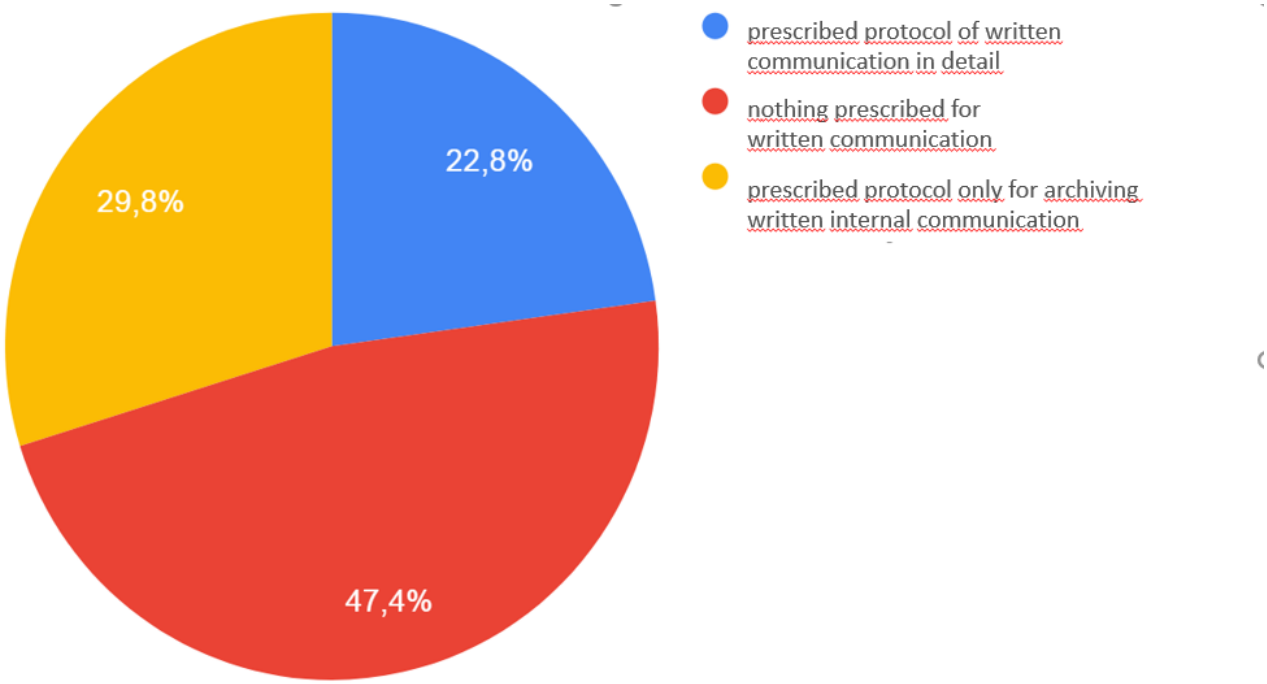
The main objective of the scientific research presented in this paper starts from the problem of the frequency of existence of prescribed protocols of written communication in business practice in Croatia, which is considered one of the backbone of efficient and effective business. From this, the research was to determine the extent to which business organizations in the Republic of Croatia recognize the importance of prescribed protocols for written forms of communication, and what parts are covered and whether they affect the business of the business organization itself. In accordance with the problem and the purpose of the research, four hypotheses have been defined. They are: H1: "Business organizations in Croatia do not have written communication protocols prescribed."; H2: "Respondents believe that the prescribed

written communication protocol contributes to a better and more successful business."; H3: "Public, regional and state administration organizations are more likely to have prescribed written communication protocols than other organizations." and H4: "Employees in public, regional and state government believe that prescribed written communication protocols have a great impact on internal communication unlike employees of other organizations.". For the purpose of thhis research, the questionnaire was specifically designed. The study was conducted on a sample of 115 subjects, but because of incomplete answers 111 of them were taken into the analysis itself. The distribution of respondents (equal by gender and uniform distribution by age of respondents) according to the level of job in the organizational structure is as follows: 49.6% of respondents are executive employees, 27.8% are representatives of lower management, 12.2% are representatives of middle management and management representatives with 10.4%. Depending on the type of organization, the distribution of respondents is as follows: Local public administration 11.3%, regional public administration 19.1%, state administration 7.8%, production company 12.2%, media organization 1.7%, enterprise from service industries 22.6%, trade enterprises 11.3%, education 6.1%, health care 3.5% and other 4.3%. The 'Other' category included: development agency, museum institution, public research institute, sports organization and catering. According to the size of the organization, 21.7% of the respondents are employed in an organization with less than 10 employees, 26.1% are employed in an organization with 10-49 employees, the majority of respondents, 30.4% are employed in an organization with 50-249 employees, and 21.7% of respondents work in a large organization with 250 or more employees.

3. RESULTS

When asked about the prescribed written communication protocols, the answers in Graph 1 indicate that the largest part, 47.4% of respondents have nothing prescribed for written communication in their organizations, while 29.8% have a prescribed protocol related only to archiving written communication, and 22.8% of organizations have detailed protocol for written communication.

Graph 1: Prescribed written communication protocols



Source: author

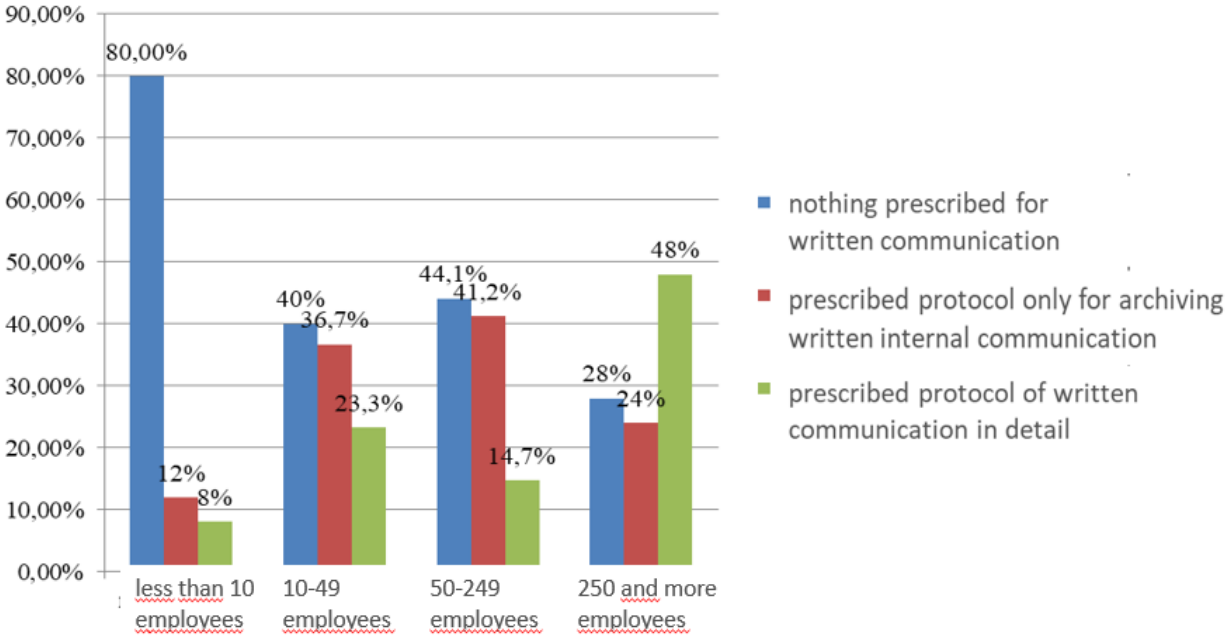
Analysis of the results presented in Graph 2 starts from the highest to the lowest percentage. It shows how respondents perceived the impact of the prescribed written communication protocol. From the total of 111 respondents, there are 80 (72.1%) who believe that the prescribed written communication protocol contributes to faster information flow, 78 (70.3%) believe that it contributes to better communication at all levels, 73 (65.8%) respondents state that it simplify the process of information of the larger number of employees, 51 (45.9%) consider that such a document contributes to clarify the task and the obligation of execution, 49 (44.1%) of the respondents said that the prescribed protocol of written communication would affect the better informness of all regarding the status of a process, 47 (42.3%) respondents believed that this type of document would help reduce employee conflict, 46 (41.4%) thought that it would be easier and faster to seek information on completed processes, and 43 (38.7%) respondents believe that it would help to create a better image of the company in the external environment. The least number of 31 respondents (27.9%) believe that such a prescribed protocol contributes to more meaningful communication in crisis situations.

Graph 2: Impact of the prescribed written communication protocol

Source: author

In one of the questions asked the respondents were asked to sate, in case their organization has any of the prescribed protocols, which areas or activities are defined in relation to written communication. Office Regulation published in the Official Gazette, Rules of Procedure and Internal Organization, Protocol on Takeover and Return of Goods, HACCP System that controls critical points and traceability of the quality of goods entry, are just some of the answers given by the respondents who have aligned these areas and activities with the activity of their organizations. Presence of the prescribed protocols of written communication in organizations according to the number of employees can be seen in graph 3. Companies with less than 10 employees, 80% of them claim that they have nothing prescribed in relation to written communication, and only 8% of them have a detailed protocols of written communication. Companies with 10-49 employees in 40% of cases have nothing prescribed, as well as companies with 50-249 employees have nothing prescribed in 44.1% of cases. On the other hand, large companies with more than 250 employees do not have prescribed protocols in only 28% of cases, and in 48% of cases they have detailed communication protocols. In comparison with small enterprises, which in only 8% of cases have detailed protocols, the large enterprises with 48%, show significant difference.

Graph 3: Prescribed protocols of written communication in organizations by number of employees



Source: author

Table 1: Chi-square test results for the H3

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,795[a]	1	,373		
Continuity Correction[b]	,491	1	,483		
Likelihood Ratio	,797	1	,372		
Fisher's Exact Test				,446	,242
Linear-by-Linear Association	,788	1	,375		
N of Valid Cases	116				

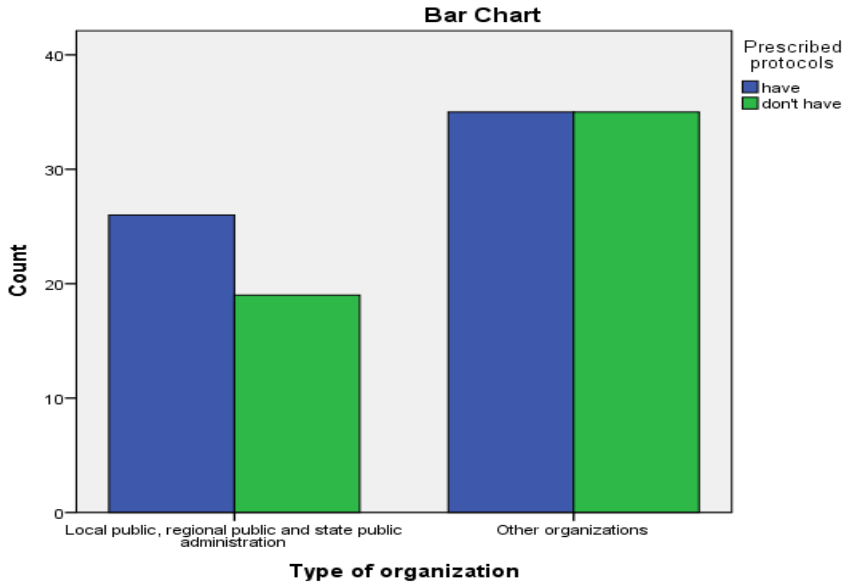
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 21,34.
b. Computed only for a 2x2 table

Source: author

Chi-square analysis showed that there is no statistically significant difference between public, regional and state administrations and other organizations in the frequency of prescribed written communication protocols ($x2 = 0.795$; $p = 0.373$).

Graph following on the next page

Graph 4: Differeces in frequency of prescribed written communiction protocols according to the type of organisation



Source: author

However, graph 4 shows a trend of results that is in line with the hypothesis, ie, although the difference in the existence of prescribed protocols in other organizations is minimal, in local public, regional and state administrations these documents are more often prescribed.

Table 2: Chi-square test results for the H4

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,620[a]	1	,431		
Continuity Correction[b]	,000	1	1,000		
Likelihood Ratio	,963	1	,326		
Fisher's Exact Test				1,000	,619
Linear-by-Linear Association	,614	1	,433		
N of Valid Cases	113				

a. 2 cells (50,0%) have expected count less than 5. The minimum expected count is ,38.
b. Computed only for a 2x2 table

Source: author

The chi-square analysis showed that there was no statistically significant difference in the impact of prescribed written communication protocols between persons employed in local, regional and state public administrations and persons employed in other organizations ($x2 = 0.620$; $p = 0.431$).

4. DISCUSSION

From the presented results in which the respondents were asked to answer whether or not they had prescribed protocols of written communication, first hypothesis can be confirmed. The results showed that 29.8% of the respondents had a prescribed protocol but related only to archiving written communication, and 22.8% of those surveyed had a prescribed protocol in detail.

The percentage of respondents who do not have anything prescribed about the written communication is significantly higher and is 47.4%. Graph 3, which shows the status of prescribed protocols in organizations by number of employees, also supports the first hypothesis. It also shows that a higher percentage is prevailing for companies that has nohing prescribed for written communication, and refers to companies with fewer than 10 employees, 10-49 employees and 50-249 employees. From the above we can conclude that the first hypothesis that says: "Business organizations in Croatia do not have prescribed protocols of written communication." can be confirmed. Confirmation of the second hypothesis is based on the results presented in Graph 2. It is evident that the respondents answered the question about the importance of prescribed written communication protocols in the highest percentage, as they consider the advantages of faster information flow within the organization, creation of better quality communication at all levels and easier informing a larger number of employees. Faster flow of information within the organization is of utmost importance specailly at times when a particular problem needs to be solved quickly and efficiently. Establishing good communication at all levels can bring numerous benefits such as better collaboration and execution of business processes, and when it comes to simplifying more information, it is crucial for employees to be aware of the day-to-day activities and changes that occur within the organization. Taking all three components together and the benefits that the company receives with them, the conclusion is that another hypothesis that states: "Employees believe that the prescribed written communication protocol contributes to a better and more successful business." is confirmed. Though the results showed that both hypothesis, the third talking about the difference in frequency of the existence of prescribed protocols according to the type of organisation and the forth talking about the perception fo the impact of such protocols should be rejected, from the graph 4 the tendency of the slight difference can be noticed. Such results are the sign that there is an unexplored space of internal organisational communication that could clear how important it is to prescribe written communication.

5. CONCLUSION

The paper once again emphasizes the importance of business communication in general and the specifically forms of written communication in an organization. In order for the organization to have a solid foundation with its employees, but also with its business partners, it is necessary to start designing and understanding all types of business communication. When it comes to written communication protocols, they will be of significant benefit to performing all types of business, and ultimately will be one of the important segments for enhancing the performance of the entire business. Based on the collected data and results, both first assumptions were confirmed and though the second two hypotheses were not confirmed, deeper insight into that area would be of great importance. The main objective of the research was successfully achieved. Respondents confirmed that they recognized the importance of prescribed protocols for written forms of communication and considered them to be of great importance to the organization's business itself. This research certainly raises new problematic issues, precisely when it comes to the lack and non-use of business protocols for written communication within the Republic of Croatia. Each company needs to implement the prescribed ways of all forms of communication, including written communication, so that one quality unit can be created for the whole process and all levels of communication in the organization.

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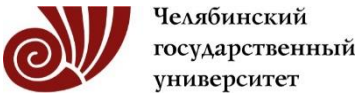
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