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Regulatory and institutional factors in digital financial inclusion: a comparative study

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Abstract

The article aims to identify infrastructural and institutional factors that affect the financial inclusion. To identify the most important factors of financial inclusion improvement, a comparative analysis of two Sub-Saharan countries – Nigeria and Kenya - was conducted. The analysis shows that differences in Nigeria and Kenya financial inclusion levels can be attributed not only to the economic development but also to the difference in regulatory approaches. The analysis also confirms the hypothesis that usage of digital financial services depends more on 'general' literacy rather than financial literacy in particular.

Keywords: Financial inclusion, Kenya, Nigeria, mobile money, regulation.

Introduction and literature review

Recently, the financial inclusion has become one of the most discussed topics both locally and worldwide [e.g. Global Partnership for Financial Inclusion (2017)]. Regulators are developing concepts to expand and deepen financial inclusion [Michaels, L. and Homer, M. (2017)]. Financial exclusion is believed to improve socio-economic development by providing access to savings, payments and investment options that were not available to the vulnerable populations. Financial inclusion will, in other words, lower the costs currently borne by the underserved, protect them from unexpected financial turmoils, etc [McKinsey Global Institute (2016)].

Digital financial services are often believed to be the possible effective solution to the financial exclusion problem. However, the success of digital financial services depends greatly on the regulatory environment and multiple structural factors. However, there is still limited research on the role of this factor and how they correlate with the state of financial inclusion.

Currently, there is no unified approach to defining financial inclusion. In a broad sense, financial inclusion is the ability to access to financial services. According to the World Bank, financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit and insurance – delivered in a responsible and sustainable way[Understanding Poverty, "Financial Inclusion"].

As we can see from different international organizations efforts, such as Alliance for Financial Inclusion, G20, etc., as well as local organization, mostly Central Banks and other financial institutions, financial inclusion is an important issue, especially in developing countries. A variety of literature can be found on the topic. The existing research is mainly focused on identifying best practices and its implementation to further financial inclusion.Other focus of research is measurement of financial inclusion, , analysis of its impact on economic growth (poverty reduction, income growth, etc.). Another widely researched topic is case studies of certain jurisdictions.

Kabakova and Plaksenkov (2018) found that social, technological and economic factors affect financial inclusion. Chima (2010) researched the effect of the sub-prime crisis that hit the United States of Americaand the United Kingdom on financial inclusion and stressed the importance of the strong regulatory ecosystem for the sustainable financial inclusion.

There is a variety of literature on the usage of mobile technologies to enhance financial inclusion levels. Chowdhury (2006), Donner (2006), Jensen (2007), Roller and Waverman (2001), Sridhar and Sridhar (2004), Lee et al. (2009) indicate the positive impact of mobile phone usage on economic growth, SMEs, financial inclusion also contributes to reducing price volatility and poverty. Kpodar and Andrianaivo (2011) confirmed positive effects of mobile phones usage in the countries with existing financial infrastructure. Lenka and Barik (2018) state that there is a significant correlation between the rise of financial inclusion levels and increase of both mobile phone and internet services usage in South Asian Association for Regional Cooperation.

There is also a body of research focused on the state of financial inclusion in African countries. Olaniyi Evans (2018) found that availability of Internet access is a positive factor for financial inclusion, Olaniyi Evans (2018) findings are also consistent with the literature on the determinants of financial inclusion (Laha et al., 2011; Singh and Singh Kondan, 2011; Adeyemi et al., 2012; Akudugu, 2013; Pena et al., 2014; Siddik et al., 2015; Tuesta et al., 2015; Evans and Adeoye, 2016; Sathiyan and Panda, 2016).

This means that digital financial inclusion (i.e. financial inclusion achieved through the usage digital financial services) may not be dependent on a particular technology but rather the structural factors present in the country. This paper aims at filling this gap.

In this paper we test three hypotheses:

1. The level of financial inclusion correlates with the level of literacy.

2. The level of financial inclusion correlates with the infrastructure, i.e. the availability of financial services.

3. The level of financial inclusion correlates with certain structural reasons, including the quality of legislation.

In order to test the hypotheses, we review two African countries – Nigeria and Kenya. The levels of financial inclusion in these countries are drastically different: while the indicators of financial inclusion in Nigeria are deteriorating, they are growing in Kenya. Using the comparative analysis, we try to identify the main structural factors that may explain these differences.

State of financial inclusion in Africa

With the emergence of digital financial services, Sub-Saharan Africa has seen an unprecedented increase in financial inclusion indicators in the last decade. In 2012, only about a quarter of the adult population in sub-Saharan Africa had access to financial services;yetabout 43% of the population are included in the financial sector by 2018. Kenya is the main champion here. Along with such countries as Tanzania and the Democratic Republic of the Congo, financial inclusion levels in Kenya have more than doubled [International Finance Corporation, Mastercard Foundation (2018)].

Following international bodies, local regulators use multi-factor definition of financial inclusion that includes the following [Ronanl Berger Stratagy Consultants (2012)]:

1. Ease of access to financial products and services.

Financial products must be within easy reach for all groups of people and should avoid onerous requirements, such as challenging KYC procedures.

2. A broad range of financial products and services.

Financial Inclusion implies access to a broad range of financial services including payments, savings, credit, insurance and pensions products

3. Designed according to need (appropriateness).

Financial products must be designed according to target clients' needs and should consider income levels and access to distribution channels

4. Affordable cost

Formal financial services should be affordable even for low-income groups.

Table 1 Percent of adults that own a transaction account, African countries (according to World Bank [Universal Financial Access 2020])

Country	**2011**	**2017**
Benin	10%	38%
Burkina Faso	13%	43%
Gabon	19%	59%
Ghana	29%	58%
Kenya	**42%**	**82%**
Nigeria	**30%**	**40%**
Niger	2%	16%
Rwanda	33%	50%
Tanzania	17%	47%
Uganda	20%	59%
Madagascar	6%	18%
Malawi	17%	34%
SA	54%	69%
Zambia	21%	46%

Nigeria

In 2012, Nigeria adopted National Financial Inclusion Strategy until 2020 [Central Bank of Nigeria (2013)]. However, it is now recognized that the government's plans seem unlikely to be achieved. By 2020 80% of the adult population was expected be financial included, and 70% of the adult population will be clients of formal financial institutions [Chima, O. (2018)].

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However, in 2017, according to the Fifth Annual Financial Inclusion Insights Tracker Survey, only 30% of the population were included in the financial system; 29% of the population of Nigeria have a full-service bank account and only 3% of the population have a registered mobile money account; 3% have a full-service non-bank financial institution (NBFI) account [Financial Inclusion Insights (2018), "Nigeria FifthAnnual FII Tracker Survey"].

Nigeria is fourteenth-largest and most populous country in Africa, which is home to almost 184 million people. The majority of the population – about 70% - live in rural areas.

Nigeria is the largest oil producing country in Africa and its economy is heavily dependent on the price on black gold. In addition, Nigeria has the largest gas deposits on the continent [The World Bank (2018)].

Despite that, more than half of the population lives on less than $1.9 a day. And the number of citizens living below the poverty line continues to increase [Adebayo, B. (2018)]. The decline in oil prices during recent years has had a major impact on the Nigerian economy slowdown. Thus, according to the World Bank, GDP per capita in 2014 was $3221.7, and in 2017 dropped to $1968.4.

The crisis has led to an increase in unemployment: from 4.31% in 2014 to 7% in 2018, according to the World Bank. Inflation in 2016 hit 16.5% compared to 8% in 2014 [The World Bank Data, "Nigeria"].

In additional, Nigeria is politically unstable. Boko haram, a radical Islamist group operating in Northern Nigeria, was included in the list of terrorist organizations by the UN Security Council in 2014. From 2009 to 2017 more than 20 thousand people were killed in Nigeria as a result of the Boko Haram's actions, about 2.3 million became displaced persons and refugees [Campbell, J. and Harwood, A. (2018)].

These socio-economic shocks led to further impoverishment of the population. In 2016 46% of population lived on less than $2.5 per day, in 2017 this number increased to 60% [Financial Inclusion Insights (2018), "Nigeria FifthAnnual FII Tracker Survey"][Financial Inclusion Insights (2017), "Nigeria wave 4 report FII Tracker Survey"].

According to the Nigeria Fifth Annual FII Tracker Survey , in 2017 basic literacy was 52% , financial literacy in 2016 and 2017 remained at 16% [Financial Inclusion Insights (2018), "Nigeria FifthAnnual FII Tracker Survey"][Financial Inclusion Insights (2017), "Nigeria wave 4 report FII Tracker Survey"].

Despite economic upheavals, and very much like other African countries, Nigeria has impressive communication infrastructure. In Nigeria, more than 80% of the population owned SIM cards in 2017. 65% of mobile phone owners confirm that they can write SMS. As shown in the figure below, Nigerians use phones primarily for calls but usage for Internet or financial transactions is significantly lower [Financial Inclusion Insights (2018), "Nigeria FifthAnnual FII Tracker Survey"].

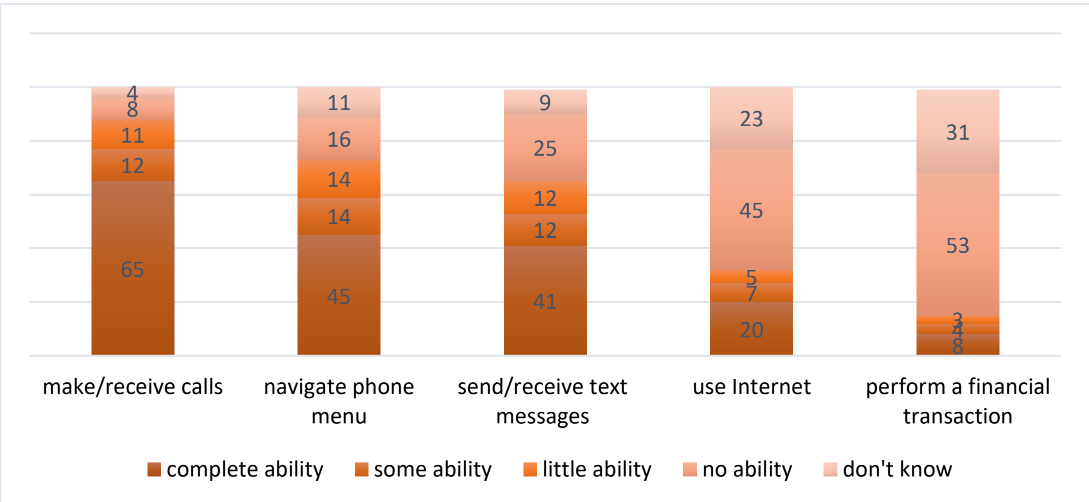

Figure 1 Phone user capability (percentage of adults)

One explanation is that most of the phones in the country are basic (42%) orfeature phones (36%), smartphones are the least common type of phone (15%) [Financial Inclusion Insights (2018), “Nigeria FifthAnnual FII Tracker Survey”]. But this not a barrier for mobile-based financial services, as Kenyan M-PESA works with feature phones as well. M-Pesa is an initiative launched in 2007 by the mobile phone giant Vodafone and the Kenya-based company Safaricom. At first, the service was created to facilitate the application for and payment of microfinance loans, using SMS and USSD-based messages. However, nowit is also used for person-to-person transfers.. M-Pesa can be used on the most basic mobile handset [Barnett, D. (2017)].

However, mobile money is developing inchmeal: only 3% of the population use such services. There are 13 mobile money operators in the country, only 11% and 8% of the population are aware of the two most famous ones, the rest are known by 2% to 6% of the population [Financial Inclusion Insights (2018), “Nigeria FifthAnnual FII Tracker Survey”]. In Uganda, for comparison, only 54% of the population have phones, but 43% of citizens have a registered mobile money account (another 19% use mobile money, but do not have a registered account) [Financial Inclusion Insights (2018), “Uganda Fifth Annual FII Tracker Survey”]. So the low penetration of mobile financial services does not seem to be a matter of infrastructure. The logic explanation is regulatory barriers.

Nigerian digital financial services regulation is rather typical for the region. As in many neighboring states, there is a common law system. Therefore, regulation is primarily principle-based and less-detailed then the one usually found in countries with a continental system of law. For example, Nigeria does not have the concept of "electronic money". Instead, a legally vague concept of "mobile payment system" or "mobile payment services" is used: it “refers to the various components required to deliver mobile payment to the banking and non-banking community” [Central Bank of Nigeria (2009)].

Contributing to the legal uncertainty, "mobile payment services" are not equivalent to "services provided by the mobile operator". Guidelines on International Mobile Money Remittance Service in Nigeria (2015) regulates transfers from a bank account, card transactions and "accounts of mobile phones".

Mobile payments regulation in Nigeria seems to be technology-dependent. It focuses on all transactions that can be performed using the mobile phones, even though technically this transaction can be funded by payment card, electronic wallet or bank account. The technology-neutral approaches is not taken in the country. Although the Central Bank admits that some technical functions may be performed by a NBFI (such as a mobile operator or other organization), the regulation is bank-centric. In fact, only banks can provide financial services [Central Bank of Nigeria (2013), “Guidelines for the Regulation of Agent Banking and Agent Banking Relationships in Nigeria”].

At the same time, it is allowed that a non-bank unlicensed organization can also provide mobile payment services – accept customer funds for payment purposes, store them in a special bank account. The use of a special account allows to protect clients’ funds from creditors’ claims, as well as not to mix the received funds with other funds of the company. At the same time, any mobile payment operators – both bank and non-bank - must obtain a corresponding license from the Central Bank.

Nigeria also has a tiered customer due diligence (see Table 2) [Central Bank of Nigeria (2013), “Central Bank of Nigeria (Anti-money laundering and combating the financing of terrorism in banks and other financial institutions in Nigeria) Regulations”].

Table 2 Tiered customer due diligence in Nigeria

The authentication level	Requirements	Restrictions
First	Customer must provide (in person or remotely): • Passport photo; • Name; • Place and date of birth; • Gender, address, phone number. No need to verify the information provided by the customer. It is allowed to open accounts through agents; can be opened within mobile payment system. Used only inside Nigeria. Used only for savings.	• Maximum deposit amount: 20 000 Naira (aprox. $55); • Maximum balance: 200 000 Naira (approx. $550); • Any person can replenish the account, withdraw funds – only the account holder.
Second	Customer must provide (in person or remotely): • Passport photo; • Name; • Place and date of birth; • Gender, address, phone number. The information is checked through the state databases (e.g., election commissions, National Identification Commission, so on). Can be opened within mobile payment system. Used only inside Nigeria	• Maximum deposit amount: 50 000 Nair (approx. $140); • Maximum balance: 400 000 Naira (approx. $1100);
Third	The financial institution is obliged to collect and verify the accuracy of all documents required to open a bank account.	no restrictions on accounts

Nigerian law allows to provide financial services via agents [Central Bank of Nigeria (2013), “Guidelines for the regulation of agent banking and agent banking relationships in Nigeria”]. Any organization that was established at least a year before the conclusion of the agency agreement can be an agent . Either licensed financial institution or a mobile payment operator can be a principal. Agent functions include the cash-in services and delivery of cash, money transfers, acceptance of payments and some others. Exclusivity of agents is prohibited. Formally, Nigerian legislation is in line with the best practices. However, the local regulatory devil is in details. For example, the Regulatory Framework for Licensing Super-Agents establishes the amount of fees between a principal and an agent, a logo that agent needs to show and so on [Central Bank of Nigeria (2015), “Regulatory Framework for Licensing Super-Agents in Nigeria”]. The Nigerian regulator also regulates the maximum fees that can be levied by the financial institutions [Central Bank of Nigeria (2017), “The Guide to Charges by Banks and other Financial Institutions in Nigeria”].

For example, any cash transfer costs 200 Naira (approx. $0.55), payment via Internet Bank costs 0.75% (but not more than 1,200 Naira (approx. $3.5)), card maintenance fee (local currency bank accounts) cannot be more than 50 Naira (approx. $0.15) monthly, issuing a card costs 1,000 Naira (approx. $3) and so on. As with any tariff regulation, it is unlikely that the established fees sufficiently reflect the cost of services provided and might avert the companies from providing the regulated service.

The entry threshold for the some types of the financial service providers seems to be high as well. For example, international mobile transfer services are regulated as a separate type of financial institutions, but with a very high threshold for entry: assets worth $1 billion, 10 years of experience in at least twenty countries. Moreover, that does not exempt them from obtaining a license of the mobile financial services operator if they want to provide mobile-based services as well [Central Bank of Nigeria (2015), “Guidelines on International Mobile Money Remittance Service in Nigeria”]. There does not seem to be anything close in other countries.

In 2018, the regulator made an attempt to introduce ‘light’ (payment) banks that could be authorized to exclusivelymake transfers and could not provide any other financial service. [Central Bank of Nigeria (2018), “Guidelines for Licensing and Regulation of Payment Service Banks in Nigeria”]. Theoretically, this status could be obtained by mobile operators and thus minimize entry threshold to the financial services market for them. However, it is too early to assess practical impact. We have not found any indication that any of the payment bank were authorized by the central bank [Central Bank of Nigeria, “Financial Institutions”].

Therefore, formally Nigerian legislation is in line with the best practices [AFI Case Study (2018)]– there are agency schemes, several levels of customer identification, NBFIs are regulated. However, the devil is in the details: although the legislation recognizes "mobile financial services", only banks can provide them. Price regulation seems to be a negative factor. It should be noted that the regulations focused on digital financial services were adopted after 2014. While other countries supported implementation of innovative financial services through issuing ‘letters of no objection’ (e.g. Kenya or Tanzania) [Russian Electronic Money Association (2016)]. Nigeria did not use this regulatory instrument, keeping the level of legal uncertainty high.

Despite the legal right to provide financial services, non-bank financial institutions and mobile-money providers are reluctant to enter the market, as seen from the statistics [Financial Inclusion Insights (2018), “Nigeria Fifth Annual FII Tracker Survey”]. The market remains to be primarily bank-centric. Normally, that would not be a problem but the number of people with a bank account is decreasing (see Figure 2).

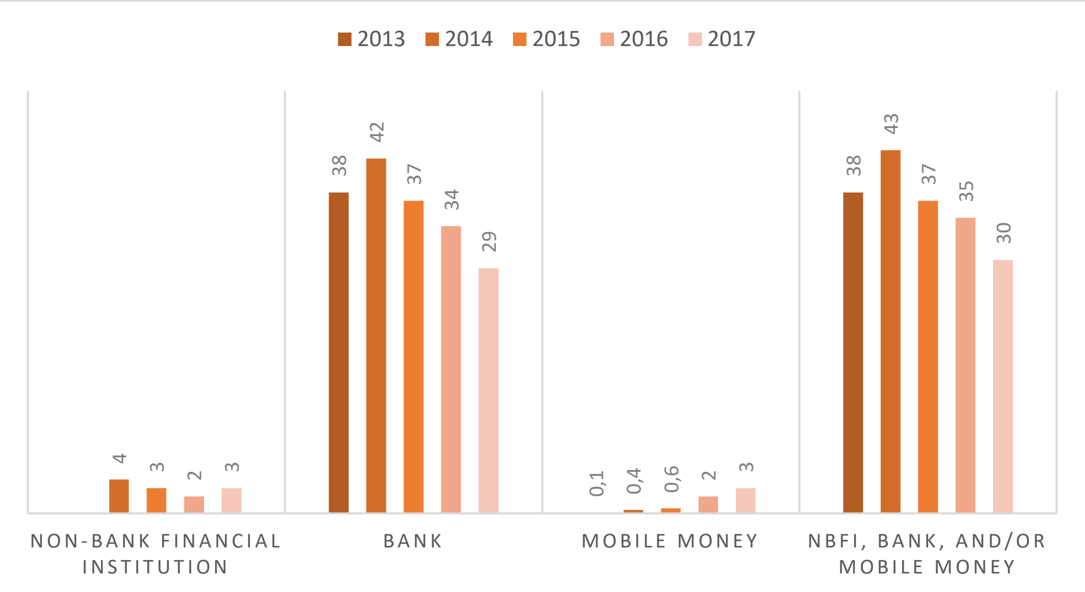

Figure 2. Customers of different types of institutions (percentage of adults)

There is limited awareness about the availability of financial services : in 2017 only 31% of citizens are aware of points-of-service (POS) within one kilometer of home (48% in 2016), only 24% - about the bank branch (31% in 2016),87% of the population do not know anything about mobile money agents [Financial Inclusion Insights (2018), “Nigeria Fifth Annual FII Tracker Survey”].

The decrease in number of bank accounts can be attributed to the regulatory initiatives. In order to prevent illegal banking operations, in 2014 the government obliged the owners of bank accounts to obtain special biometric bank verification numbers (BVNs) [Central Bank of Nigeria (2014), “Clarification Circular on Bank Verification Number (BVN) Enrollment”]. As a result, some accounts were closed due to clients' failure to provide the necessary documents, and some of them faced difficulties while linking BVN to their accounts. Thus, not only did the number of newly opened bank accounts decline, but also a number of existing ones were closed. Residents of Nigeria have not shown enthusiasm in obtaining new documents, as it requires time and money; however, by the end of 2017, 78% of the population already have the necessary documents to open a bank account [Financial Inclusion Insights (2018), “Nigeria Fifth Annual FII Tracker Survey”].

In addition, a federal government regulation enacted in March 2016 increased transaction costs associated with banking financial services. Inter alia, a stamp duty of $0.20 on bank customers for receiving money into their accounts was introduced, as well as additional fees for cash withdrawals, debit card issuance and online transfers. Rising costs may have reduced the attractiveness of financial services to the public [Salazar, D. (2018)].

Thus, we can identify the main constraints to the development of financial inclusion:

- socio-economic shocks of recent years;
- high level of legal uncertainty up to 2014
- fee regulation
- chain of unsuccessful regulatory actions (stamp duty, BVNs), leading to rising costs of the financial services;
- low literacy;
- low financial literacy;
- low level of awareness of the infrastructure and the providers of mobile money;

The Nigerian authorities are concerned about low financial inclusion and are trying to improve the situation. Thus, in 2018 the Central Bank of Nigeria (CBN) and The Nigerian Communications Commission (NCC) signed a Memorandum of Understanding on payment system in Nigeria. CBN, in cooperation with the Nigeria Inter-Bank Settlement System (NIBSS), has also started to develop a regulatory sandbox and launched programs to expand access to financial services specifically for isolated groups such as women and small and medium enterprises (SMEs). However, the effects of these initiatives remain to be seen.

Kenya

As opposed to Nigeria, Kenya has high degree of financial inclusion: from 2014 to 2017, in Kenya share of people having access to financial services increased by 8 percentage points from 65% to 73%; 72% of the population have a registered mobile money account, 29% - a full-service bank account and 13% use NBFI services [Financial Inclusion Insights (2018), “Kenya Wave 5 Report Fifth Annual FII Tracker Survey”].

It is worth mentioning that primary contributor to such extensive financial inclusion in Kenya are electronic money systems. In 2017, 98% of all financially included citizens had a mobile money account. At the same time, the number of bank accounts has not changed since 2013 and remains below 30%. The mobile money sector in Kenya continues to evolve, going beyond the provision of basic money transfer services and now include bills payment, loans, savings, investments, insurance, etc. Interestingly, the level of mobile phones and SIM cards ownership in Kenya is even slightly lower than in Nigeria – 79% against 81% in Nigeria [Financial Inclusion Insights (2018), "Kenya Wave 5 Report Fifth Annual FII Tracker Survey"].

In addition, infrastructure network is well-developed in Kenya. Thus, 8 out of 10 citizens know about the POS within one kilometer from the house, and 9 out of 10 citizens aware of one within 5 kilometers[1]. [Financial Inclusion Insights (2018), "Kenya Wave 5 Report Fifth Annual FII Tracker Survey"].

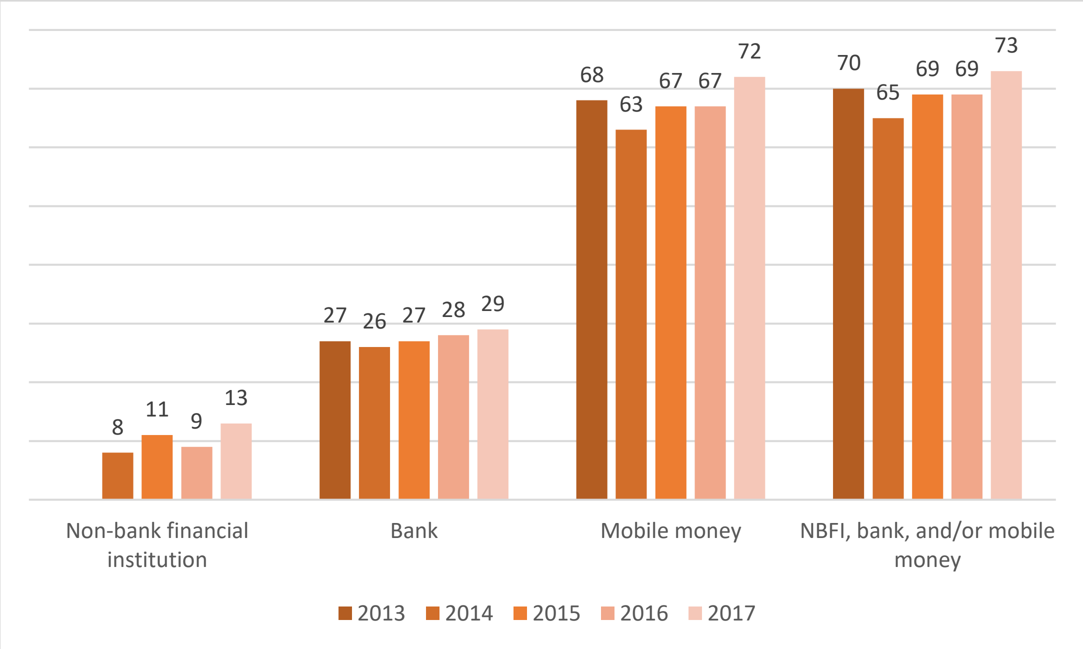

Figure 2. Registered users (percentage of adults)

The level of financial literacy is a concern for the regulator. Kenya has implemented financial inclusion programs, which led to the growth of financial literacy levels: share of people who had basic financial literacy (i.e. basic knowledge of four fundamental concepts in financial decision-making) rose from 17% in 2016 to 28% in 2017.. This means that the levels of the financial literacy in Nigeria and Kenya are comparable and they do not explain the difference in financial inclusion [Financial Inclusion Insights (2018), "Kenya Wave 5 Report Fifth Annual FII Tracker Survey"].

One of the explanations is that financial literacy level do not directly affect financial inclusion in Kenya because mobile money projects are very simple to use and therefore require very limited knowledge. In the countries which bet on more traditional financial services (e.g. bank accounts, as is the case of Nigeria), low financial literacy may have detrimental effect on financial inclusion, as the 'entry threshold' for the customers is higher.

However, in contrast to the financial literacy, the basic literacy, i.e. the ability to write and read, differs significantly in these countries. In Kenya 75% of the population can at least write and read [Financial Inclusion Insights (2018), "Kenya Wave 5 Report Fifth Annual FII Tracker Survey"], in contrast to 48% in Nigeria [Financial Inclusion Insights (2018), "Nigeria FifthAnnual FII Tracker Survey"].

Unemployment rate in Kenya, albeit a steady decline since 2009, in 2018 was still 11.5%, that is 3.5 percentage points higher than in Nigeria.

Regulation in Kenya differs from Nigeria's one. The following differences should be highlighted:

- The National Payment System Act, following the European practice, recognizes «payment service providers» [Central Bank of Kenya (2011), "The National Payment System Act, 2011. No. 39 of 2011"] - they have the right to provide only money transfer services and, in comparison to banks, have milder prudential requirements. Since 2014, "mobile payment service providers" are introduced, although the requirements are virtually identical.

- The registered capital for financial service provider is sixty million Kenyan shillings is required (approx $58000) [Central Bank of Kenya (2013), “Regulation for the Provision of Electronic Retail Transfers”];

- Not only banks, but also other legal entities authorized by the regulator can act as an e-money issuer; e-money issuers are a subtype of the payment service provider. Minimum core capital of an e-money issuer shall be sixty million Kenyan shillings (approx. $580240) [Central Bank of Kenya (2013), “E-money Regulation”];

- The regulation allows for the derogation for small e-money issuers (with less than 10 million Kenyan shillings (approx. $96700) in liabilities) from the prudential requirements and from receiving a special license are justifiable; such "small" issuers have restrictions on the maximum amount of liabilities and on the number of entities and individuals, who can accept their electronic money;

- E-money transaction shall not exceed 75000 Kenyan shillings (approx. $725), the amount of replenishment per month shall be less than 1 million shillings (approx. $9670); wherein the balance of e-purses are not covered under the deposit insurance system;

- E-money operators have right to engage agents for provision of financial services, not subject to extreme limitatons.

Comparative analysis

Regulation

Kenya and Nigeria took different regulatory approaches. Prior to implementing the payment-focused regulation, Kenya made use of the letters of no objection, to minimize legal uncertainty and this, inter alia, led to the emergence of worldwide known M-PESA system [AFI Case Study (2010)]. There was no letters of no objection in Nigeria, however.

The legislation in both countries seem to be in line with the best practices. Non-bank financial providers are allowed to provide some financial services, agent banking is recognized as well.

However, some of the approaches taken in Nigeria are quite specific. For example, there is a price regulation that may have negative impact on the entities’ willingness to engage in financial services[2]. Moreover, introduction of additional documentation requirements (i.e. mandatory BVN) and stamp fees were not conducive to financial inclusion, especially among the most vulnerable. Despite the formal efforts, the regulation is bank-centric. There was an attempt to spur competition and introduce ‘payment banks’ with lower prudential requirements and limited license. But registered capital of such organizations is set at 153 (!) times higher than the same standard for a similar institution in Kenya – illustrating alleged overestimation of risks and neutralizing any effects of the reform.

In contrast, Kenya introduced market-focused regulation, that includes partial exemptions for smaller players, thus stimulating competition in the market.

Interestingly, Nigeria has a differentiated customer due diligence system: opening

low-functional accounts do not require customer due diligence. In Kenya, by contrast, physical presence of the customer is required (although, the burden of this requirement is offset by the wide agent networks).

Literacy and financial literacy

Kenya and Nigeria have comparably low levels of financial literacy. This metrics might be subjective: depending on the methodology, financial literacy may mean different things: from pure awareness of the financial service to skills to calculate interest rates.

One of the possible explanations is that digital financial services (e.g. mobile money systems) have lower entry thresholds for the customers. Even person with very limited financial knowledge can participate - it is very easy to set up mobile money account and make transfers.

This explanation is partially confirmed by the difference in literacy levels. In Kenya literacy rate is more than 75%, while in Nigeria it is less than 50%. Understandably, if the person cannot read, he/she cannot use either bank account or mobile account. Therefore, financial literacy, although an important factor in a longer run, seems to be secondary to the literacy levels.

Economic situation

Obviously, the economic situation in Kenya and Nigeria differs significantly. Nigeria has experienced significant economic downturns, although it has higher GDP per capita than in Kenya – meaning that stability seems to be more important for the purposes of financial inclusion, than absolute numbers.

Infrastructure

Notable difference in infrastructure awareness exists in Kenya and Nigeria. While in Kenya 80% of the population know about the point-of-sale within 5 kilometers, in Nigeria this is only 31%. We do not have data about actual availability of infrastructure, but obviously, the awareness of such infrastructure plays an important role in financial inclusion. Without it, the population, especially in rural area, will be more likely excluded from financial system, as well as they simply do not know about it.

Findings and further research

Improving financial inclusion is a complex socio-economic challenge, and no silver bullet solution has been yet developed by international community. Apparently, this process is influenced by many factors: social, economic and political.

The comparative analysis of Kenian and Nigerian experiences is certainly of practical interest. Having relatively similar initial conditions – a weak financial sector, low level of financial literacy, these states have taken fundamentally different directions. The example of Kenya has become a world level model: different countries are still trying to replicate the success of M-PESA mobile payment system, but remarkably, no one has managed to achieve the same results. Nigeria, on the other hand, shows a negative trend in financial inclusion, notwithstanding the obvious desire of authorities and the financial regulator to achieve the opposite. This means that some institutional factors are responsible for these differences.

1. The hypothesis about correlation of financial inclusion with literacy was confirmed. In Kenya, basic literacy is much higher. However, the financial literacy plays much lesser role, as new financial services are easier to use and therefore require less financial knowledge.
2. The hypothesis that financial inclusion correlates with the accessibility of financial services has not been confirmed, there is a high level of SIM cards and mobile phone penetration in Nigeria but financial inclusion is still low. Therefore, the availability of infrastructure, although is important, is only a part of the puzzle.

Crucial in ensuring financial inclusion is the awareness of citizens. Despite the formal presence of point-of-service, customers may disregard and, therefore, distrust them. While the issue seems self-evident, insufficient attention to it may undoubtedly have a negative impact on government efforts to improve financial inclusion.

3. As anticipated, regulation plays a significant role in ensuring financial inclusion through the introduction of digital financial services. As the legal analysis of legislation shows, flexibility of regulation plays is extremely important. Introduction of 'payment institutions', 'payment banks' or similar institutions need to be supported by the risk-based, proportionate requirements to these entities. The price regulation and superficially increasing the costs of the financial services (e.g. by introducing state-mandated fees) predictably have negative effect on financial inclusion. The comparative analysis also hints on the areas for further research. More countries need to be examined to identify for specific factors that may affect the levels of financial inclusion. Another question is if the digital financial services require different approach to flourish rather than more traditional – like bank accounts. Finally, more in-depth analysis of particular regulatory approaches (e.g. regarding the exclusivity of agent networks) may shed light on more intricate relationship between regulation and financial inclusion.

[1] It should be noted that these data reflects awareness and not the actual existence of infrastructure but these indicators undoubtedly correlate.

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[2] It should be noted that in this study we cannot assess non-formalized problems: for example, the reluctance of the Central Bank to authorize agents, due to lack of resources or skills.

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