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Abstract: The COVID-19 pandemic compelled organisations to adopt new methods of working, with the rise of virtual teams and virtual work representing one of the most significant changes. Managers must comprehend the factors that influence virtual team (VT) performance in order to effectively lead and manage remote teams. Therefore, in the current study, we employ event system theory to investigate how perceived job ambiguity (job security and insecurity), perceived change adaptability (the desire for change and resistance to change), and perceived work effects (loneliness and adverse work conditions) influence the psychological well-being of employees and the performance of virtual teams. In addition, we will investigate how social support mediates the aforementioned constructs' effects. Using a snowball sampling technique, data were collected from 493 individuals residing in three developing nations: India, Russia, and Morocco. PLS-SEM was used to analyse the collected data. At high levels of social support, the perceived job ambiguity has a significant positive relationship with VT Performance, while at high levels of social support, the negative effects of Perceived Work Effects on VT Performance are amplified. It was discovered that virtual team performance has a positive effect on the psychological health of employees. The paper provides valuable insights into the factors that affect the performance of virtual teams in developing nations and has significant implications for both theoretical and applied research.	

The role of perceived job ambiguity, change adaptability, and work effects on virtual team performance and employee psychological wellbeing

Abstract

The pandemic of COVID-19 has forced organizations to adopt new working ways, with the development of virtual teams and virtual work being one of the most significant changes. Managers must comprehend the factors influencing virtual team (VT) performance in order to effectively lead and manage remote teams. Therefore, in the current study, we employ event system theory to investigate how perceived job ambiguity (job security and insecurity), perceived change adaptability (the desire for change and resistance to change), and perceived work effects (loneliness and adverse work conditions) influence the employees' psychological well-being and the virtual teams performance. In addition, we will investigate how social support mediates the aforementioned constructs' effects. With a snowball sampling technique, data has been collected from 493 respondents residing in three developing nations: India, Russia, and Morocco. The data has been analyzed with PLS-SEM methodology. The analysis revealed that when the levels of the social support are high, the perceived job ambiguity is significantly positively related with VT Performance, while with the low social support level, the negative effects of Perceived Work Effects on VT Performance are amplified. It was discovered that virtual team performance positively influences the employees' psychological health. Thus, our paper gives valuable insights into factors affecting the virtual teams performance in developing nations and has significant implications for both theoretical and applied research.

Keywords: Virtual team performance, job ambiguity, change adaptability, work effects, psychological wellbeing.

1. Introduction

The recent Covid-19 pandemic did obviously create a great alteration and impact when it comes to both people's lives and their businesses. For example, multiple sectors worldwide face unprecedented challenges such as facility closures, workforce layoffs, disruptions in global trade, and border shutdowns for safety precautions as we approach the next economic crisis. Furthermore, roughly four out of every five CEOs/board members worldwide stated that

their firms are unprepared to deal with the Covid-19 crisis incident (EY, 2020). Globally, employees are concerned about job stability and need more confidence in finding a secure career in the future (Watkins and Yaziji, 2020). Furthermore, many employees are experiencing emotional exhaustion working from home (BBC, 2020) and burnout. In April 2020, many employees reported being burned out globally, for example, 88% employees at Lyft, 82% at Uber, and 81% at LinkedIn, Airbnb and Oracle (Shein, 2020). Furthermore, over seventy percent of today's professionals are grappling with burnout, according to Ranosa (2020), with a notable segment linking it to the widespread utilization of video conferencing (Stieg, 2020).

Work stress or burnout may also result from job ambiguity that many employees face worldwide. Definitely, usually employees prefer stability of their employment, unless they want to leave it deliberately; nevertheless, e.g., 26.5 million employees in the United States only have faced termination, resulting in an unemployment rate exceeding 20%. In the United Kingdom, over 1.8 million individuals did reportedly apply for the Universal Credit, and 12,000 British Airways employees have been warned of potential job losses (McGaughey, 2020). Preliminary projections indicate that anywhere from 14 million to 37 million jobs may be lost in the United States alone during the pandemic early stages (Devy et al., 2020). Moreover, Wallace (2020) suggests that over a billion workers globally could face financial struggles due to the pandemic's impact on employment, reduced working hours, and decreased wages. Global unemployment already stood at around 190 million according to International labor organization (Clarke, 2020).

From an organizational standpoint, the Covid-19 pandemic did challenge firms to manage their businesses in new ways, including many changes in their operations, adapting to the digital workplace, etc. (Burton and O'Neill, 2020). Yet there may be some underlying reason why few employees resist such changes. For instance, organizations are trying to permit only those needed in the office and letting others work from home. Furthermore, many physical

meetings are replaced with emails and zoom networks for social distancing reasons (Sahi, 2020; Karl et al., 2022); during such events, employers may experience changes in productivity as more employees begin to work remotely.

Virtual teams, defined by spatial as well as temporal dispersion of members with reliance on technology for communication (Garro-Abarca et al., 2021), have adapted new organizational forms during the Covid-19 pandemic. These adaptations offer organizations increased flexibility and help reduce the risk of infection spread. However, working in a virtual team can sometimes be challenging (Gupta and Pathak, 2018) due to in-person interactions deficit, that can cause social isolation. Additionally, despite the Covid-19 negative influences, it is important to examine how organizations can alleviate the detrimental effects of virtual work performance.

Furthermore, applying the event system theory developed in (Morgeson et al., 2015), model 'perceived job ambiguity' (job security and insecurity) 'perceived change effects,' (the need for change and change resistance), and 'perceived work effects' (loneliness and adverse work condition) is modelled in a multi-dimensional construct of first-degree reflective and second-degree formative nature (e.g. Walsh et al. 2020; Edwards, 2001; Law, Wong, & Mobley, 1998), followed by a study of its impact on the employees' psychological well-being and the virtual teams performance. The theory suggests that the event impact, or event strength, depends on its uniqueness, instability, and significance. Employees' views on the severity of the pandemic, thus, can affect their work attitudes and responses to distant work formats.

We will also investigate the mediating effects of social support to these constructs. Furthermore, considering such global problems as the Covid-19 pandemic, it is believed that social support can help people stay committed to their employment, reduce job effects, and adjust to changes. Moreover, one of the goals of this research is to provide the managers with well-informed solutions for enhancing employee performance virtually, giving them a sense of

job security, being ready to accept changes in the future, and understanding how to manage if any adverse work conditions may create an impact during times of crisis.

2. Theoretical background and Hypotheses

2.1 Perceived Job Ambiguity (PJA) (Job insecurity and Job security)

2.1.1 Job Insecurity

Job insecurity, that can be described as the perceived job losing threat with related social status lowering fears (De Witte, 2005), has been connected to a series of poor outcomes having consequences for both the employee and the organization as a whole. Numerous evidence states that perceived job insecurity substantially impacts employees' occupational stress, reduces employee command and consistency, and increases employees' sense of risk and vulnerability (Vo-Thanhet al. 2022; Röllmann et al. 2021; Högnäs et al. 2022). Additionally, it may harm employee wellbeing, sentiments, and performance (Ganson et al. 2021; Elshaer and Azazz, 2021; Lin et al. 2021). The ramifications of job insecurity are complicated and limited by conceptual and empirical disagreement. Most job insecurity research has concentrated on subjective job loss probability perceptions based on uncertainty in such objective working conditions as organizational structure reorganization as well as flexible contracts implementation (De Witte, 2005).

Layoffs have always been a popular strategy for restructuring an organization in uncertain times (Cascio, 2005), with the Covid-19 pandemic not being an exception (Kriz et al. 2021). To reduce labor costs, simplify operations, and improve an organization's ability to compete, organizations often implement downsizing strategies during crises and uncertain events, leading to employee insecurity (Elshaer and Azazz, 2021). Poor emotional and physical wellness, as well as a lack of dedication on the part of both individuals and the organization, are all linked to a lack of security in one's employment (Selenko & Batinic, 2013; Strazdins et al., 2004).

Work uncertainty does strongly affect essential psychological requirements, such as freedom, skill, and belongingness; this is a direct result from it (Urbanaviciute et al., 2021). When Greenhalgh and Rosenblatt (1984) first investigated job insecurity, they believed it was employees' worry of a specific job continuity loss, along with the potential loss of the job as such, as well as its vital or positive features. Definitely such unpredicted and radical changes as the shock "onlinezation" of work in the pandemic context can lead to such outcomes, weakening the employees' psychological well-being and their work performance in a virtual setting. As a result, we can arrive at our initial hypothesis.

2.1.2 Job Security

This construct is defined in (Lu et al., 2017) as "employees' expectations about the stability and longevity of their job in an organization", thus being one of the most relevant characteristics of employee commitment, engagement and performance (Bibi et al. 2016; Conklin & Desselle, 2007). Work-related consequences are directly influenced by job security, which impacts staff morale and enhances their loyalty to the workforce organization (Moshoeu & Geldenhuys, 2015). Employees expect their companies to provide a sense of job security. When workers believe this security is genuine, they feel confident and tend to demonstrate more work enthusiasm. Companies that recognize the job security importance are more prone to specifically invest into its development (Tian et al., 2018).

An employee's well-being can be predicted by job security, which is a strong predictor (Kuhnert et al., 1989). It is easier for employees to know what they must do to protect their jobs whenever management and employees agree that job security will be provided if they execute at or above organizational requirements. In contrast, employees' efforts and time may be diverted by the resulting confusion or misunderstanding. Most research results demonstrate the positive effect of job security on organizational engagement; however, evidence also exists of its negative influence on organizational commitment (Yousef, 1998). Studying the

psychological well-being influence on perceived job security in a Covid-19 context attempts to reconcile these seemingly incongruous findings. Given that job security has been associated with better performance under stressful work environments (Lu et al., 2017), we propose that, in the pandemic context, it will enhance virtual team performance and psychological well-being. Thus, the following hypotheses can be formulated:

H_{1a}: *Perceived job ambiguity positively influence VT performance*

H_{1b}: *Perceived job ambiguity positively influence psychological wellbeing*

2.2 Perceived Work Effects (PWE) (Loneliness and Adverse Work Condition)

2.2.1 Loneliness

There is little doubt that the pandemic altered the way individuals worked and engaged with their co-workers and firms throughout the globe. Social isolation, lockdown measures, and remote work all contributed to significant office loneliness in an unanticipated way (Wilding, 2021). According to a Wall Street Journal survey, since the pandemic began, work engagement has declined by 16%. (Gino and Cable, 2021). Globally, people are isolated and becoming increasingly prone to a condition known as "loneliness" (Firoz et al. 2020). Unsurprisingly, remote work impedes formation of friendly relationships. Taken together, these figures emphasize the crucial necessity of social relationships and the consequences of their disruption or abolition.

With over a third of our lives spent at work, our professional connections are crucial for our general psychological as well as physical well-being and health. Thus, fostering strong social relationships is critical for an organization's overall effectiveness and is viewed as a prerequisite for organizational health (Soares et al. 2021; Kholl, 2018; Cornelissen, 2016). Loneliness is a potentially hazardous emotion; being identified as a public health issue, has been linked to shortened life expectancy, and has been claimed to have the same health repercussions as smoking 15 cigarettes daily (Murthy, 2017). Loneliness has been

characterized as a chronic state that happens when "a gap exists between desired and actual socializing patterns" (Peplau et al., 1982, p. 136). Loneliness is a symptom of a decline in social participation and the quality of relationships. Ben-Zur (2012) investigated the contributions of loneliness and dispositional optimism to well-being. According to the study's findings, loneliness harms an individual's well-being, whereas optimism has a positive impact. Thus, we argue that the event of covid-19 has created less connection and more social isolation causing loneliness among employees and this may serve as an indicator of making a negative impact on both employee and their work.

2.2.2 Adverse working conditions

The rapid and widespread Covid-19 outbreak caused a sudden surge in workload for many employees worldwide. Prolonged exposure to extreme stressors in the work environment can result in severe physiological issues when there is insufficient time for rest and recovery. No matter how adverse the working environment is, activities that necessitate significant effort can be hampered by high levels of stress and uncertainty and especially when going from offline to online and having to spend more work using computers and online meetings. These working conditions were induced not as an option, but as a requirement due to the situation of Covid-19. It is known that employees' energy is depleted because of their jobs' high expectations, they get exhausted and burned out when the conditions become severe. People working in adverse environments more tend to engage in severe cognitive coping, which depletes their energy reserves (Lazarus & Folkman, 1984). For this study, we argue that employees people who have significant time limitations, lack technology or the general energy to work virtually or work based on the demand that was created due to crises such as Covid-19, employees frequently respond to heavy job demands by expecting and accepting lower performance, causing them to lower their performance expectations (e.g. Hockey, 1997).

All other factors being equal, employees burdened with excessive workloads will have less energy to devote to tasks that benefit their organization. This decreases their likelihood of discovering, promoting, and implementing innovative ideas. Throughout the pandemic, teleworking was frequently promoted as a solution that protected workers from infection and favored higher-level jobs in particular. However, telecommuting conditions differed according to location, family social status, and gender. The presence of a separate workstation in the housing is also contingent on the social class of the household. Teleworking's high prevalence in this category may have aggravated family connection difficulties. Domestic task increases associated with new types of teleworking, on top of home-schooling duties, appear to have resulted in a reordering of well-being across different population categories. Hence in this regard, we argue that the adverse working conditions created due to the covid-19 can impact PW and VT performance.

H_{2a}: *Perceived work effects positively influence VT performance*

H_{2b}: *Perceived work effects positively influence psychological wellbeing*

2.3 Perceived Change Effects (PCE) (Resistance to change and need for change)

2.3.1 Resistance to change

The Covid-19 crisis has imposed extraordinary pressures on every organization for rapid and radical organizational change, engaging employees of all levels from the frontline to executive. The organizational change practices are under severe strain as a result of increased demand for change and pressure to implement it more swiftly than previously. Resistance to change can be defined as “any behaviour aimed at maintaining the status quo in the face of pressures to alter it” (Zaltman & Duncan, 1977, p. 63). The cognitive resistance aspect involves the individual perceptions and beliefs about organizational changes, including their views on whether these changes are necessary and beneficial (Oreg, 2006; Piderit, 2000). Such resistance

typically has negative effects on employees' motivation at work. According to Oreg (2006), those who resist change are often dissatisfied with their daily tasks. This resistance can lead to frustration with the changes and foster loss of the organizational loyalty (Charoensukmongkol, 2016).

In their turn, Lines et al. (2015) demonstrated that the resistance to change can reduce the effectiveness of the employees' work. Bateh et al. (2013) also suggested that resistance may result in workplace disruptions and conflicts among employees. Over time, this can erode job motivation and increase turnover intentions (Wagstaff et al., 2016). Theoretically, resistance to change often arises from the perceived uncertainties associated with the change. For instance, Charoensukmongkol (2017) and Demerouti et al. (2017) found that employees resist change due to concerns about job stability and uncertainty. This aligns with Li et al. (2016), who argued that employees are hesitant to abandon familiar practices, sceptical of new methods, and wary of potential risks.

2.3.2 The Need for change

In today's rapidly evolving environment, businesses hoping for a slowdown in the pace of change are likely to be disappointed. The world is constantly transforming—population dynamics, customer trends, technology, and the economy are all in flux. Companies that do not adapt to these changes risk becoming obsolete, unable to compete in the current market. Hybrid teams, which collaborate across different locations and time zones both synchronously and asynchronously, are supported by advancing technology that facilitates virtual interactions and strengthens interpersonal connections. This approach addresses employees' psychological, social, and physical needs, fostering a more equitable and inclusive work environment by dismantling traditional office hierarchies, ultimately leading to increased employee satisfaction and productivity.

H_{3a}: *Perceived change adaptability positively influence VT performance*

H_{3b}: *Perceived change adaptability positively influence psychological wellbeing*

2.4 The Moderating Role of Social Support

The social support concept (Eisenberger et al., 2002; Ford et al., 2007) is considered a global construct with a slew of operational definitions and implications whose meanings shift over time (House, 1981). Social support was popularized by Cobb (1976), who described it as the feeling that individuals have, as part of a social reciprocal duty – which involves the notion that one is respected, loved, and cared for. Many people find social support in the form of a devoted companion or a close family member who cares about them deeply (Allen, Blascovich, and Mendes, 2002); evidence exists of mitigating effect of social support on depression, anxiety and other stress-related mental health concerns (e.g., Fleming, Baum, Gisriel, & Gatchel, 1982; Lin, Ye, & Ensel, 1999; Sarason, Sarason, & Gurung, 1997).

Employees may be better able to cope with stressful situations if they have close social ties that they can lean on (e.g., Bakker and Demerouti, 2007; Cohen and Willis, 1985; George et al., 1993), Even though social support has been widely praised by medical experts as well as the general public, the results of studies on the effects of social support in the workplace have been varied (e.g., Time, 28 July 2010). Virtual workers who believe that they are socially integrated with other members of the company are more likely to think of themselves as members of the organization (Wiesenfeld et al. (2001)).

Numerous studies demonstrated the positive social support influence on life satisfaction (Selda et al., 2013; Park and Fritz, 2015) and well-being (Siddall et al., 2013), and that support was also linked to academic well-being as a predictor of overall well-being (Garriott et al., 2015). Additionally, it has been shown that social support affects health both directly and indirectly, with the latter buffered by the negative stress effects (Cohen and Wills, 1985). Thus,

it can be suggested that the social support during such a stressful situation as a Covid-19 pandemic may improve mental health, while its absence may increase the mental health problems risk (Szkody and colleagues, 2021). Work that was done before or after Covid-19, when work became virtual and is still done in some organizations, is referred to in this study as social support. Coworkers, management, or the organization itself can provide social assistance.

Thus, the following hypotheses can be formulated:

H_{4a}: Social support moderates the perceived job ambiguity effect on Virtual Team Performance

H_{4b}: Social support moderates the perceived work effects influence on Virtual Team Performance

H_{4c}: Social support moderates the Perceived change adaptability effect on Virtual Team Performance

2.5 Virtual Team performance and Psychological Well-being

Virtual Teams (VT) typically comprise numerous individuals engaged in different tasks, responsible for collective outcomes, and heavily reliant on technology for communication (El Yousfi et al., 2021). VT represents a modern organizational structure increasing the organizational flexibility (Guinalıu and Jordan, 2016), although work in virtual teams can sometimes be less enjoyable (Gupta and Pathak, 2018) due to personal interactions lack, as the team members are often dispersed spatially, socially, and culturally. Additionally, challenges arise from handling multiple tasks, extended working hours, and increased participation in online meetings. VT members must also cope with performance issues, job insecurity, and financial uncertainties of the future (Anderson, Kaplan, and Vega 2015; Caligiuri et al. 2020), because a team's virtuality can alter over time (Handke, Klonek, and colleagues, 2020), either incrementally or abruptly due to internal or external situations (Handke, Klonek, and colleagues, 2020). For instance, due to Covid-19, these novel working

conditions for detached employees in virtual teams compelled them from all around the world to switch to virtual cooperation in a relatively short period (Klonek et al., 2021).

With dramatic increase of VT usage intensity, various evidence became available of high level of stress experiences by their members, negatively influencing their psychological well-being (e.g. Caligiuri et al. 2020; Park, Jeong, and Chai 2021). Thus, more comprehensive studies are needed for understanding how the stress caused by Covid-19 that may have resulted in job ambiguity, change adaptability, and work effects. Psychological well-being can influence on several levels of diverse employee outcomes (Aggarwal-Gupta, Vohra, and Bhatnagar 2010; Daniels and Guppy 1997; Huppert 2009; Jang 2009; Pahlevan Sharif, Ahadzadeh, and Sharif Nia 2018).

Individuals with higher psychological well-being levels more tend to foster social connections, exhibit productivity, possess strong self-determination, enjoy better physical and mental health, and get social support by request for problem-solving (Daniels and Guppy, 1997). Evidence also exists of psychological well-being enhancing organizational commitment and job performance (Aggarwal-Gupta, Vohra, and Bhatnagar, 2010), while reducing burnout, job stress and family stress (Wright and Hobfoll, 2004; Jung, 2017). To support virtual teams and enhance their members' psychological well-being, it is important to figure out the factors influencing these teams and their psychological state. Consequently, this study proposes the following hypothesis:

H_5: Virtual Team performance positively influences psychological wellbeing

3. Research design

3.1 Procedure and participants

Collection of data was lasting from August 2021 to January 2022. As the topic was sensitive, and as many employees were coping with the new normal – while adjusting to the

lifestyle and anticipation that their job is still secured, the authors faced challenges in convincing to collect the data. To gather insights from a broad range of global participants, we utilized a snowball sampling method (Walsh et al., 2020), sending the survey to various organizations' employees having personal acquaintance with that of the authors who was sending the survey (thus, increasing trust to the survey and decreasing the fear that it would jeopardize the respondents' career). We then requested these initial respondents to share the survey with others who might provide relevant feedback. This technique is effective for reaching hard-to-access populations (Walsh et al., 2020). For collection of data, the Getfouryes.com online survey platform has been used (Anand and Dalmasso, 2019), with written assurances of anonymity. The final dataset comprised 527 respondents. Of these, 409 completed the survey online, while 118 opted for a printed version for privacy and convenience. After reviewing the responses, 375 online and 118 offline submissions were deemed valid, resulting in a total of 493 valid samples.

The sample included employees from India, Morocco, and Russia, spanning all hierarchical levels in both government and private sectors. Appendix A provides details on demographic statistics: namely, the sample comprised 36.3% female and 63.7% male respondents, with a median age of 21 - 30 years. Majority of participants were from India (46.5%), followed by Russia (28.2%) and Morocco (25.4%). Most respondents (60.8%) were employed in private companies, 22.7% worked in academia, 8.9% were entrepreneurs, and 7.3% were employed by government institutions.

3.2. Measurement scales

For measuring the dependent, moderator and control variables, scales have been used validated by factorial and confirmatory analysis, demonstrating satisfactory reliability. All measures were using a 7-point Likert type scale, having a range from 1 (strongly disagree) to

7 (strongly agree); Appendix B provides detailed information about the items. Job insecurity has been assessed using a scale based on (Boswell et al., 2014), while job security has been assessed with that developed in (Conway et al., 2014). The loneliness scale is based on the work of Waytz et al. (2015), the *need for change*, in its turn, on the work of van den Heuvel et al. (2015), while the *resistance to change* was adopted from De Ruiter et al. (2017). The adverse working condition scale was adopted from Psychogios et al (2019), as measured through Jacobson's (2016) scale. *Social support* as the proposed mediator was measured through Ozer's (2015) scale and the *virtual team performance* scale was adopted from El-Yousufi et al. (2021).

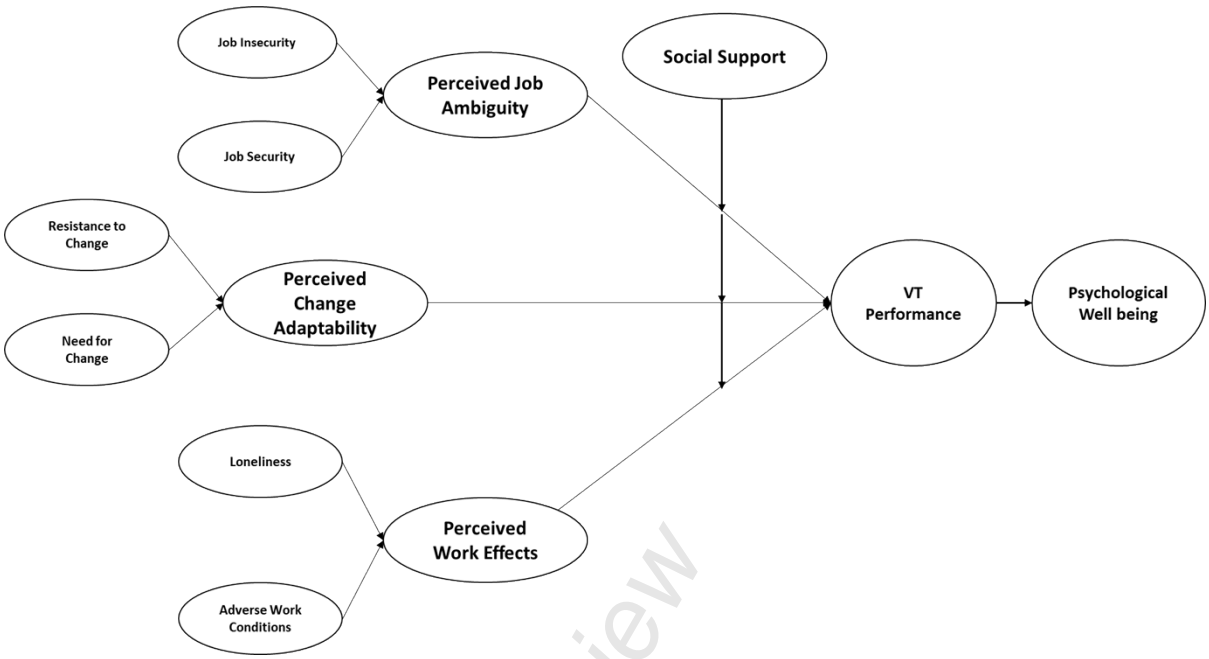


Fig. 1 Conceptual Model

4. Data analysis and results

Continuing the ideas developed in (Hair et al., 2017), partial-least-square (PLS) approach is used due to the model's complex nature (with several aggregate measures), lack of normal distribution in the data and the model included reflective and formative constructs. PLS is

suitable with complex modeling (Akter et al., 2017), does not require normal distribution data (Fornell and Cha, 1994) and can include both formative and reflective constructs (Gefen et al., 2000). Data analysis has been conducted with the Smart-PLS Version 4. The bootstrapping procedure was configured on the basis of 5000 samples, employing a bias-corrected and accelerated bootstrap method and a two-tailed approach.

4.1 Measurement Model

In this study, all predictor variables—PJA, PCA, and PWE—were treated as higher-order constructs (lower-order reflective, higher-order formative). The measurement model was evaluated with the repeated indicator approach, where lower-order constructs indicators are duplicated in the higher-order constructs. The other study variables were first-order reflective constructs; consequently, the measurement model for these reflective constructs was assessed through item loadings, reliability analysis (including Composite Reliability and Cronbach's alpha) as well as construct validity tests (such as AVEs and the Fornell-Larcker criterion).

All item loadings have exceeded the 0.707 recommended threshold, with the exception of JBINS2 and SSDCC4, which had loadings of 0.678 and 0.695, respectively. These two items were retained due to their relevance to the construct (content validity) and the potential impact their removal could have on the respective constructs' internal consistency reliability (Hair et al., 2017).

4.1.1 Internal consistency

Cronbach's alpha values exceed 0.7, and the composite reliability exceeds the 0.7 minimum threshold in all instances (see Table 1). This indicates that the measurement items' internal reliability is satisfactory for all the constructs.

4.1.2 Convergent validity

The AVEs of all reflective constructs exceed the 0.5 threshold (See Table 1). Hence, a conclusion can be made that the construct's convergent validity is adequate (Fornell and

370 Larcker, 1981). For the discriminant validity, the latent variable correlation (LVC) was carried
371 out (See Table 2).

372 **4.1.3 Discriminant validity**

373 This validity was ensured as the diagonal values representing square roots of AVEs were
374 exceeding the corresponding off-diagonal latent correlation values (Gefen et al., 2000; Fornell
375 & Larcker, 1981).

Table 1
Reliability and Convergent Validity Results of Reflective Constructs

Construct	Item	Factor Loading	AVE	Composite Reliability	Cronbach's Alpha
Loneliness (LNS)	L1	0.722	0.588	0.769	0.765
	L2	0.749			
	L3	0.815			
	L4	0.777			
Adverse Working Condition (AWCON)	AWCON1	0.730	0.654	0.743	0.734
	AWCON2	0.833			
	AWCON3	0.858			
Job Insecurity (JBINS)	JBINS1	0.827	0.652	0.873	0.865
	JBINS2	0.678			
	JBINS3	0.859			
	JBINS4	0.833			
	JBINS5	0.827			
Job Security (JBSEC)	JBSEC1	0.738	0.649	0.752	0.730
	JBSEC2	0.869			
	JBSEC3	0.804			
Resistance to Change (RC)	PNCS1	0.810	0.766	0.843	0.712
	PNCS3	0.936			
Need for Change (NC)	PNCS4	0.812	0.634	0.713	0.711
	PNCS6	0.800			
	PNCS7	0.776			
Psychological Well Being (PWB)	PWB2	0.891	0.684	0.860	0.776
	PWB3	0.871			
	PWB4	0.708			
Social Support (SS)	SSDCC1	0.762	0.618	0.883	0.876
	SSDCC2	0.790			
	SSDCC3	0.819			
	SSDCC4	0.695			
	SSDCC5	0.846			
	SSDCC6	0.795			
Virtual Team Performance (VTPF)	VTPF1	0.737	0.610	0.792	0.786
	VTPF4	0.799			
	VTPF5	0.835			
	VTPF7	0.748			

376

Table 2
Discriminant Validity

	LNS	AWCON	JBINS	JBSEC	RC	NC	PWB	SS	VTPF
LNS	**0.809**								

AWCON	0.791	**0.807**							
JBINS	-0.007	0.07	**0.806**						
JBSEC	0.298	0.339	-0.031	**0.767**					
RC	0.081	0.084	0.27	0.014	**0.796**				
NC	-0.138	-0.1	0.298	-0.178	0.275	**0.827**			
PWB	0.156	0.134	0.233	0.1	0.512	0.236	**0.875**		
SS	-0.075	-0.106	0.227	-0.318	0.173	0.298	0.126	**0.786**	
VTPF	-0.091	-0.14	0.145	-0.162	0.196	0.295	0.181	0.482	**0.781**

4.1.4 Validity of higher order constructs

Perceived job ambiguity, perceived change adaptability, and perceived work effects were treated as formative higher-order constructs. For establishing these constructs validity, Outer Weights, Outer Loadings, and Variance Inflation Factors (VIF) were assessed (Sarstedt et al., 2019). The outer weights appeared to be significant (see Table 3). Additionally, outer loadings were generally above the acceptable threshold of 0.5, with the exception of JBINS2. However, JBINS2 was retained due to its significant outer weights (Sarstedt et al., 2017; Hair et al., 2017). The VIF values have been evaluated for collinearity, with all the values being below the recommended maximum of 5 (Hair et al., 2017). All the measurement models' paths appeared to be significant (see Table 4). Given that all criteria were met, the higher-order constructs validity was confirmed.

Table 3
Validity of Higher Order Constructs

Higher Order Constructs	Indicators	Outer Weight	T Statistics	P Values	Outer Loadings	VIF
Perceived Job Ambiguity	JBINS1	0.161***	3.509	0.000	0.561	2.111
	JBINS2	0.141**	2.906	0.004	0.493	1.451
	JBINS3	0.186**	3.479	0.001	0.649	2.348
	JBINS4	0.177***	4.814	0.000	0.615	2.122
	JBINS5	0.172**	3.055	0.002	0.601	2.161
	JBSEC1	0.241*	2.461	0.014	0.500	1.339
	JBSEC2	0.331***	3.578	0.000	0.686	1.661
	JBSEC3	0.277**	2.72	0.007	0.575	1.486
Perceived Change Adaptability	PNCS1	0.421***	25.363	0.000	0.810	1.440
	PNCS3	0.518***	34.845	0.000	0.859	1.440
	PNCS4	0.260***	14.891	0.000	0.751	1.401
	PNCS6	0.280***	15.652	0.000	0.702	1.456
	PNCS7	0.214***	11.849	0.000	0.677	1.434
Perceived Work Effects	L1	0.174***	12.575	0.000	0.573	1.440

	L2	0.203***	13.846	0.000	0.603	1.516
	L3	0.197***	12.628	0.000	0.664	1.656
	L4	0.229***	14.091	0.000	0.652	1.496
	AWCON1	0.219	14.774	0.000	0.577	1.344
	AWCON2	0.270	19.023	0.000	0.67	1.676
	AWCON3	0.252	15.419	0.000	0.672	1.830

*** Significant at p ≤ 0.001 ** Significant at p ≤ 0.01 * Significant at p ≤0.05 ns Not Significant

Table 4
Path Estimates – Measurement Models – Explanatory Variables

Paths	Coefficient	T Statistics	P Values
Job Insecurity → Perceived Job Ambiguity	0.678***	3.755	0.000
Job Security → Perceived Job Ambiguity	0.689***	3.646	0.000
Resistance to change → Perceived change effects	0.494***	37.265	0.000
Need for Change → Perceived change effects	0.640***	60.782	0.000
Loneliness → Perceived Work Effects	0.634***	32.010	0.000
Adverse Working Condition → Perceived Work Effects	0.604***	41.378	0.000

***** Significant at p ≤ 0.001 ** Significant at p ≤ 0.01 * Significant at p ≤0.05 ns Not Significant**

4.2 Common method bias

It is critical to identify and control common method bias in organizational research, as it may significantly impact the results (Podsakoff, 2003). For the common method bias identification, the Harman single factor test was used. According to factor analysis results with no rotation, a single factor explained 19% of variance, which is well within the acceptable range (Harman, 1960). As a result, we can conclude that there is no evidence of such a bias.

4.3 Hypothesis testing, Structural model, and the Path estimates

PLS results are demonstrated in Figure 2, with the statistics shown in the Tables 5 and 6. Direct effects indicate that Hypothesis H_{3a} is supported as Perceived Change Adaptability has a significant positive influence on VT performance (β=.150, t=3.410, p<.01), whereas, hypothesis H_{1a} and H_{2a} are not supported as Perceived Job Ambiguity and Perceived Work Effects have negative but insignificant influence on VT performance (β=-.066, t=1.005, p=.315) and (β=.042, t=.744, p=.457) respectively.

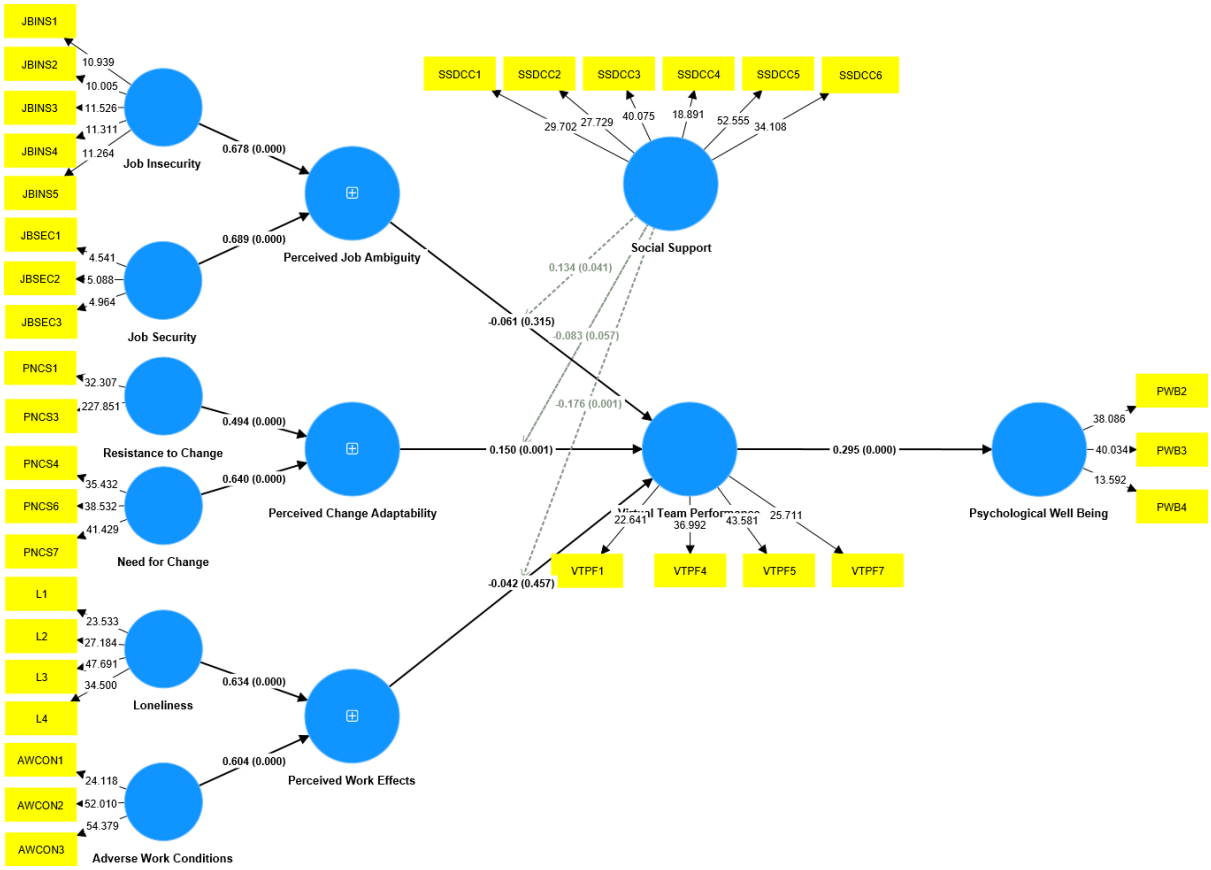


Fig. 2 Structural Model

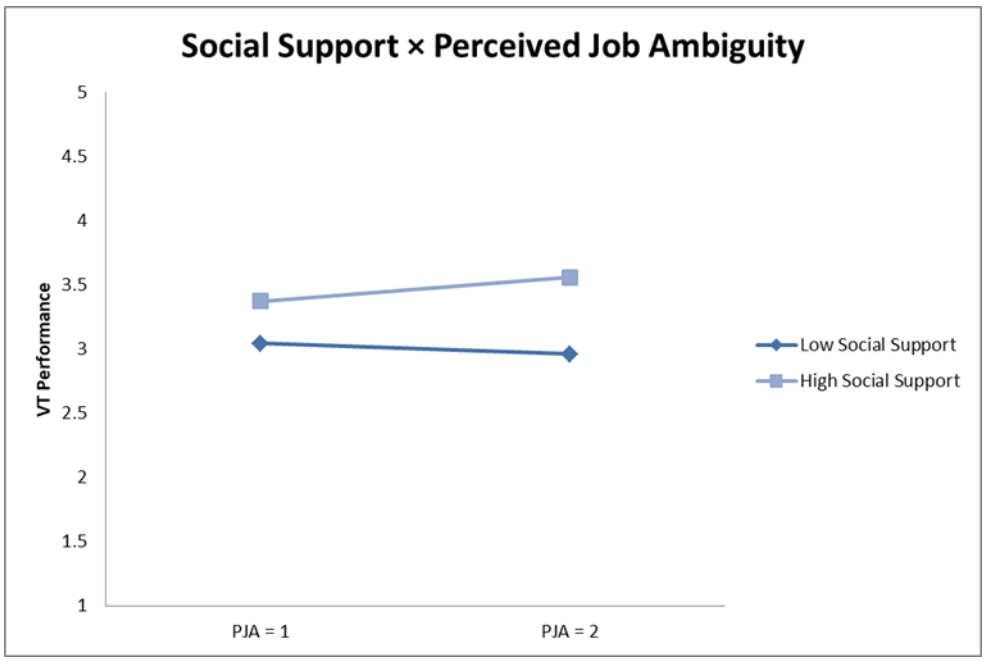
Table 5
Structural Paths

Paths	Original Sample	T Statistics	P Values	Hypothesis Results
Perceived Job Ambiguity → Virtual Team Performance	-0.066^{ns}	1.005	0.315	**H_{1a}** not supported
Perceived Work Effects → Virtual Team Performance	-0.042^{ns}	0.744	0.457	**H_{2a}** not supported
Perceived Change Adaptability → Virtual Team Performance	0.150**	3.410	0.001	**H_{3a}** supported
Social Support x Perceived Job Ambiguity → Virtual Team Performance	0.134*	2.041	0.041	**H_{4a}** supported
Social Support x Perceived Work Effects → Virtual Team Performance	-0.176**	3.402	0.001	**H_{4b}** supported
Social Support x Perceived Change Adaptability → Virtual Team Performance	-0.083^{ns}	1.907	0.057	**H_{4c}** not supported
Virtual Team Performance → Psychological Well Being	0.295***	7.661	0.000	**H_5** supported

***** Significant at p ≤ 0.001 ** Significant at p ≤ 0.01 * Significant at p ≤0.05 ns Not Significant**

The moderation analysis results showed that Hypothesis H_{4a} is supported as social support demonstrated a significant positive moderating influence (Moderating effect-1) on the Perceived job ambiguity effect on VT performance (β=0.134, t=2.041, p<.05). Hypothesis H_{4b} was also supported but social support showed a significant negative influence (Moderating

411 effect-2) on the effect of Perceived work effects on VT performance (β=-.176, t=3.402, p<.01).
412 However, the Social support variable did not moderate (Moderating effect-3) the Perceived
413 change adaptability and VT performance relationship (β=-.083, t=1.907, p=.057).



414

415 **Fig. 3: Slope Analysis of Moderation Effect-1**

416 Figure 3 depicts the moderation effect of "Social Support (SS)" on "Perceived Job Ambiguity
417 (PJA)" and "Virtual Team Performance (VTP)" relationship. It shows that, the line of High SS
418 has a positive slope when compared to the line of Low SS which has a negative slope, which
419 indicates that at Low Social Support levels the Perceived Job Ambiguity is negatively related
420 with VT Performance and at High levels this relationship is positive. Finally, Perceived Job
421 Ambiguity in the presence of High Social Support significantly improves VT Performance.

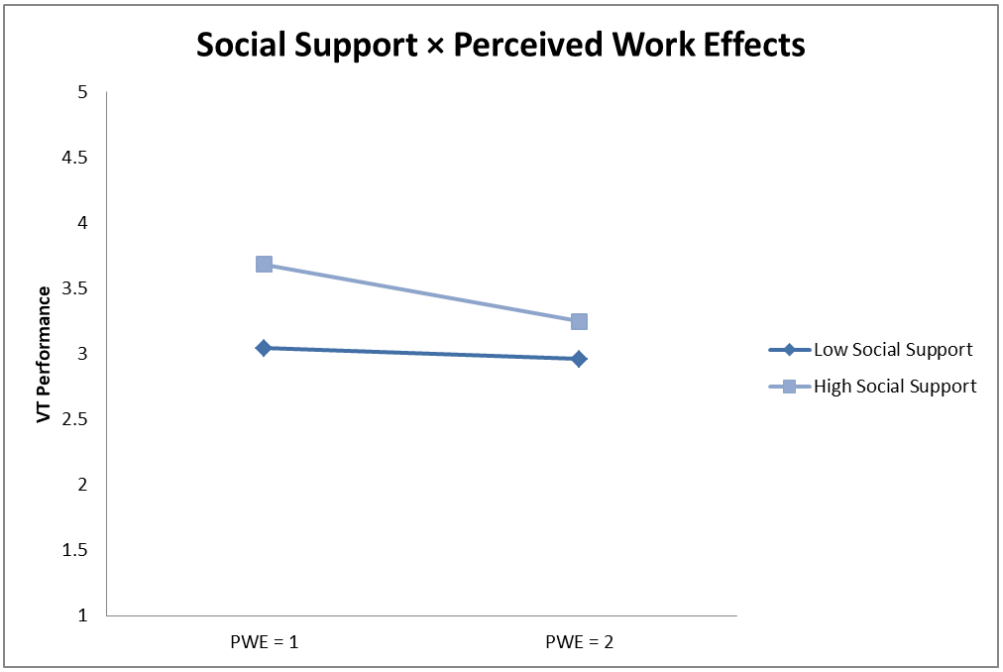


Fig. 4: Slope Analysis of Moderation Effect-2

Figure 4 depicts the moderation effect of "Social Support (SS)" on "Perceived Work Effects (PWE)" and "Virtual Team Performance (VTP)" relationship. It shows that, the line of High SS is has much steeper negative slope than the line of Low SS, which indicates that at High Social Support levels, the negative influence of Perceived Work Effects on VT Performance is higher in comparison with Low levels of Social Support. In conclusion, High Social Support further exacerbates the Perceived Work Effects and VT Performance relationship.

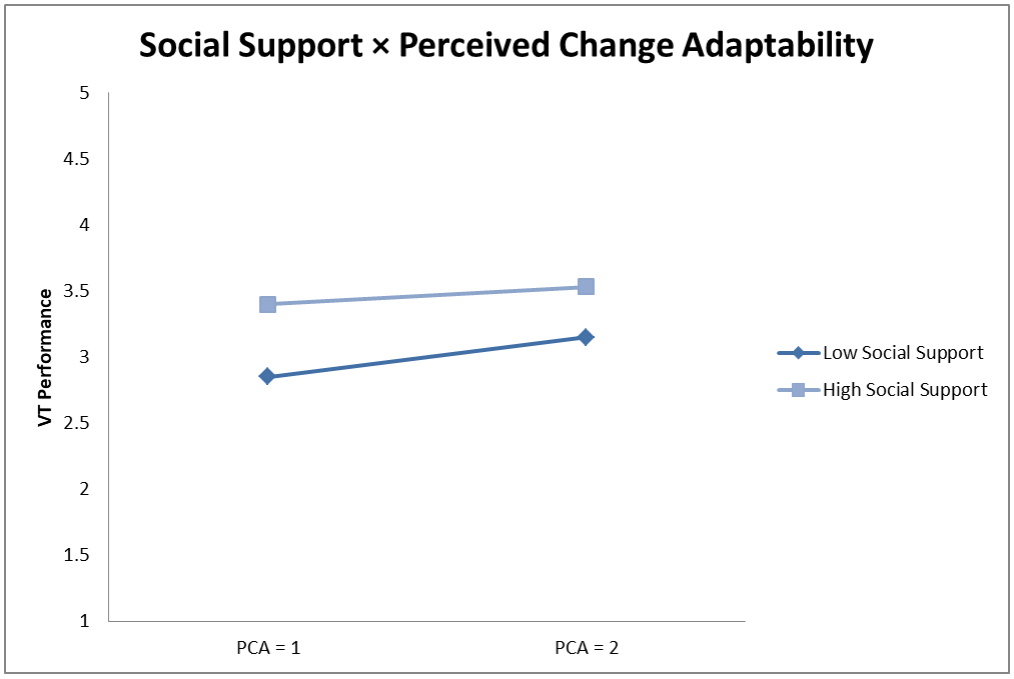


Fig. 5: Slope Analysis of Moderation Effect-3

Figure 5 depicts the moderation effect of "Social Support (SS)" on "Perceived Change Adaptability (PCA)" and "Virtual Team Performance (VTP)" relationship. It shows that, the line of High SS has a less steep positive slope than the line of Low SS, which indicates that at High Social Support levels somewhat weakens the positive Perceived Work Effects relationship with VT Performance when compared with the Low ones. In conclusion, High Social Support marginally weakens the Perceived Change Adaptability and VT Performance relationship.

Table 6
Indirect Effects

Paths	Original Sample	T Statistics	P Values	Hypothesis Results
Perceived Job Ambiguity → Psychological Well Being	-0.018^{ns}	0.976	0.329	**H_{1b}** not supported
Perceived Work Effects → Psychological Well Being	-0.012^{ns}	0.709	0.478	**H_{2b}** not supported
Perceived Change Adaptability → Psychological Well Being	0.044***	2.916	0.004	**H_{3b}** supported

***** Significant at p ≤ 0.001 ** Significant at p ≤ 0.01 * Significant at p ≤0.05 ns Not Significant**

Table 6 represents the results of indirect effects. The results reveal that hypothesis H_{3b} is supported as perceived change adaptability has a significant positive influence on

psychological well-being (β=.044, t=2.916, p<.01). On the contrary, hypothesis H_{1b} and H_{2b} are not supported as perceived job ambiguity and perceived work effects have a negative but insignificant relationship with psychological well-being (β=-.018, t=.976, p=.329) and (β=-.012, t=.709, p=.478).

3. Discussion and implications

With the pandemic continuing to impact employees globally, it is crucial to understand its psychological effects on work environment, including perceived change effects and perceived work effects. Our study identified a direct link between the variable of perceived change adaptability and both psychological well-being and virtual team performance. The findings indicated that virtual teams (VTs) influence employees' performance at various levels. Additionally, social support was found to serve as a crucial buffer, aiding employees in managing adverse situations. This highlights the importance of maintaining employee motivation during uncertain times (Buhagiar & Anand, 2021).

Let us look on possible interpretations of most significant and interesting results in more details. The first (following the order of hypotheses as numbered) result worth special discussion is that the Hypotheses H_{1a} and H_{1b} are both not supported, with perceived job ambiguity not having a statistically significant positive influence on neither VT performance nor psychological wellbeing.

A first suggestion of this result explanation can be linked to a well-known phenomenon of difference in human stress reaction: it can be suggested that the people with “active” stress reaction would be more prone to perceiving job insecurity as a challenge stimulating to overcome it (Lu, Du & Xu, 2016), while the people with “passive” stress reaction would decrease performance in case of job insecurity, thus demonstrating a positive correlation with security (Antino et al., 2022). So, it can be supposed that the sample researched in the study consists of people with both types of stress reactions, thus balancing the influence of two

perceived job ambiguity components on the psychological wellbeing and, to some extent as its result, performance.

The "passive" stress reaction suggestion seems at a first glance a more logical hypothesis, as lots of evidence exist about greater job security increasing the level of motivation according to schemes like Maslow's pyramid (from "deficiency needs" to "growth needs"), thus increasing performance (Lăzăroiu, 2015; Long et al., 2022), including that of distributed and virtual teams (Guo, Qiu & Gan, 2022; Harris & Cha, 2022). Another argument widespread in literature is that increased job security is positively correlated with the employees' planning longevity (Blagov, Begler, Pleshkova, 2021) leading, among all, to an increased propensity for development of professional competencies, (Baluyos, Rivera & Baluyos, 2019), that can also positively influence the performance.

The suggestion about people with "active" stress reaction perceiving job insecurity as a stimulating challenge is less obvious, requiring greater attention and more scrutinized research. E.g., there is evidence that the more qualified the job, the less significant would be the influence of such stress-induced effort on performance (Wydyanto & Mahaputra, 2021; Jaques, 2022), so in addition to testing stress reactions of virtual and distributed teams participants recommendation from the suggestions related to various stress types can include analysis of how do various moderating factors (including, but not confined to, job qualification) influence the relationship between the perceived job ambiguity, stress reaction, psychological wellbeing and performance (not to say that all that seems to be a potentially fruitful topic of further research).

The next interesting result is that the hypotheses H_{2a} and H_{2b} , considering the influence of the perceived work effects, are also not supported.

The logic behind this result can be based on the same idea about various stress reaction types that has been presented in the discussion of the perceived job influence: for some VT participants such perceived work effects as loneliness and adverse working conditions can be acting as a stimulating challenge, while for others these effects would act depressingly in terms of both psychological wellbeing and performance (Parent-Lamarche & Boulet, 2021; Kaur, Kumari & Pandey, 2022).

Considering the results of testing the hypotheses H_{3a} and H_{3b}, showing significant positive influence of the perceived change adaptability on both the VT performance and the psychological wellbeing, the main possible explanatory suggestion could be that such objective and strong external influence as the CoViD pandemic could create a strong sense of loyalty in a significant percentage of organizations whose employees participated in the sample – a loyalty of a level that can decrease the *ceteris paribus* usual level of resistance to change (Aulia & Soetjipto, 2021; Ayodeji-Ogundiran, Burrell & Lewis, 2021).

Indeed, if a respondent understands the urgency and importance of changes, she could be more inclined to increase her work effort to help her surroundings, including the employer organization, to overcome the threat and its consequences (Arshad & Sabeen, 2021; Idulfilastri & Zamralita, 2022).

Considering the moderating variables, the social support positive influence on the perceived job ambiguity effect on VT performance does seem considerably expected, as the evidence of such correlation is supported by dozens of studies (not to say "supported by common sense"): indeed, if we return to the logic behind the discussion of the job security & insecurity variables, we can unite "insecurity" and "ambiguity" into a higher-level construct of "uncertainty", and lots of evidence in psychological literature exists on social support mitigating negative effects of both objective and subjectively perceived uncertainty, including that in the workplace (Charoensukmongkol & Phungsoonthorn, 2022; Petrie et al., 2022).

A more intriguing result is the significant negative social support moderating influence on the perceived work effects and VT performance relationship, not being statistically significant without that mediation. This result is rather counterintuitive, as evidence in literature suggests that social support is able to mitigate the perceived negative work effects hardships (van Zoonen et al., 2021; Göktaş & Özdinç, 2022); a possible explanation could be suggested that social support can be interpreted as a high level of "in-group collectivism" increasing resistance to adoption of new technologies perceived as pressure from senior management (Gwin, 2021)

Applying event system theory, we found that uncertainty about future employment can significantly impact various employees' attitudes and behavior. This uncertainty is likely to affect employees' short- and long-term organizational commitment. Despite the presence of supportive leadership, job insecurity remains prevalent, highlighting the extent of ambiguity and uncertainty that the Covid-19 has introduced among the employees.

In general, it can be said that the pandemic disrupted the status quo regarding the work and job attributes of employees, causing synchronization, collaboration, and efficiency in a virtual space to become stressful, resulting in individual exhaustion. Our investigation revealed, however, that there is a considerable impact on PJA, PCE, and PWE. Even before the release of Covid-19, it was evident that modern developments, changes in the economy, and geopolitical instability made it impossible to ensure employment stability for all individuals in contemporary work situations (Etehadi & Karatepe, 2019).

5.1 Theoretical Implications

While surely lots of studies have looked on job ambiguity, change adaptability, and work effects in competitive environments, research on these factors during the exceptional circumstances of Covid-19 with its impact on virtual team performance and psychological

well-being is limited. Our study is trying to fill the gap, empirically examining the influence of these parameters on the virtual team performance and their employees' psychological well-being post-pandemic. This research is among the few to investigate the job (in)security and burnout effects on organizational commitment during the pandemic, assessing the personal and organizational outcomes of these effects. Furthermore, our study highlights the social support role, demonstrating its critical importance in mitigating the effects of job ambiguity, change effects, and work effects during uncertain times and crises.

By focusing on virtual team (VT) performance and psychological aspects during the Covid-19 pandemic, applying event system theory, we conceptualized the pandemic as a significant work-related event due to its novelty as perceived by the employees. This perspective allowed us to explore how Covid-19's unique characteristics impacted VT performance and psychological well-being. Our findings reveal the negative disruption and novelty effects on perceived job ambiguity (PJA), perceived change effects (PCE), and perceived work effects (PWE). These insights not only enhance our understanding of how the pandemic influenced employee performance and psychological outcomes but also deepen our knowledge of the potential links between post-pandemic conditions and employee behaviors.

Secondly, by examining PJA, PCE, and PWE within the contexts of India, Russia, and Morocco, and their relationship to VT performance and psychological well-being, we further contribute to the growing literature body on these factors. Existing articles have often overlooked the PJA, PCE, and PWE implications on the VT performance, focusing instead on health and life quality. We argue that VT performance and psychological well-being are crucial, especially in the post-Covid-19 era and future crises.

Thirdly, we found a critical role that social support plays in buffering the PJA effects, thus suggesting that the employees feeling secure in their jobs during uncertain times more tend to exhibit strong VT performance and high psychological well-being.

Additionally, this study holds academic significance as it investigates employees' perceptions of PJA, PCE, and PWE during and after the pandemic. Our results underscore the social support importance, particularly in Asian contexts, showing its significant suppressive effect on PJA, PCE, and PWE. Despite the presence of skilled workers in Asia, Africa, and Russia, these concepts remain underexplored. The study also establishes an event system theory based theoretical foundation to validate the causal relationships between PJA, PCE, and PWE, and their impact on VT performance and psychological well-being. Understanding these factors is crucial for organizational performance and productivity, especially in organizational attempts to recover from crises. Furthermore, the value of organizational resources, including social and leadership support, is essential for effective crisis management and achieving organizational goals (Agarwal et al., 2009; Jauch & Kraft, 1986; Buhagiar & Anand, 2021; Kozachenko et al., 2021).

5.2 Practical Implications

In the crisis times, the study results offer various practical implications for managing perceived job ambiguity (PJA), perceived change effects (PCE), and perceived work effects (PWE). First, the study highlights that PJA significantly impacts virtual team (VT) performance, and social support can help employees manage virtual stress and continue to perform effectively, benefiting their psychological well-being. Organizations should explore various strategies to enhance psychological health and VT performance during crises. Additionally, fostering a supportive organizational culture and improving communication can help build employee confidence and reduce perceptions of PJA, PCE, and PWE.

Second, managers should take proactive and informed actions to mitigate the negative effects of PJA, PCE, and PWE, aiming to boost employee commitment and motivation. The more robust the organizational support during a crisis, the more likely employees are to reciprocate with support for the organization. It is crucial to create stress-free work environments and establish flexible communication channels that allow employees to express their concerns and opinions. Social support should be examined from multiple angles, including peer, leadership, and organizational levels, to understand its impact on PJA, PCE, and PWE.

Managers need to address issues related to PJA, PCE, and PWE identified by organizational members. Building strong social connections and a supportive culture, and ensuring that employees feel their concerns are acknowledged, can enhance VT performance. Measures should be implemented to help employees view their roles as integral to the organization's success. PJA, PCE, and PWE should be anticipated and minimized, as they can significantly affect employee commitment, performance, and organizational outcomes. Leaders should work to reduce these factors for VT performance improvement, especially in the crisis events context.

In summary, organizations must take into account the employee perceptions of PJA, PCE, and PWE, especially in scenarios similar to Covid-19. Ensuring job security, reducing stress, preventing isolation, and facilitating appropriate change are essential steps for managing employee well-being and performance in future crises.

5.3 Limitations and future research

While the described study does definitely provide important theoretical insights and practical recommendations, it does obviously have some limitations. Firstly, it did not consider a broad spectrum of external factors that could impact perceived job ambiguity (PJA), perceived change effects (PCE), and perceived work effects (PWE). The study relied on

subjective measures based on employee perceptions. Thus, the future research stages research should develop towards additional variables incorporation, and towards usage of such objective and verifiable performance metrics as the profit margins or HR policies, to provide a more comprehensive assessment.

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Appendix A: Demographic Profile of Respondents

S.No	Demographic Profile		Response %
1	Age	21 to 30 years	61.7
		31 to 40 years	21.1
		41 to 50 years	12.4
		51 to 60 years	4.3
		60 and above years	0.6
2	Gender	Male	63.7
		Female	36.3
3	Occupation	Faculty/Professor/Lecturer/Tutor	15.4
		Director/Dean/HOD	2.0
		Administrative/Non-teaching Staff	5.3
		Front Line Employees	7.3
		Manager(s)	14.6
		Entrepreneur/Own business	8.9
		Government Staff/Government Company/Government Institutions	7.3
		Employee in a company/firm	38.9
4	Nationality	India	46.5
		Morocco	25.4
		Russia	28.2

Appendix -B : Scales used for survey instrument
Perceived Job Ambiguity (Job Security+Job Insecurity)

Job Insecurity

- Lose your job and be laid off permanently
- Find your department or division's future uncertain
- Lose your job by being pressured to accept early retirement

- Lose your job and be moved to a lower level job within the organization
- Lose your job and be laid off for a short while
- Lose your job by being fired

Job Security

- I am confident that I will be able to work for my organization as long as I wish.
- If my job were eliminated, I would be offered another job in my current organization.
- My current organization would transfer me to another job if I were laid off from my present job

Perceived change effects (Resistance to Change+Need for change)

Resistance to Change

- I think that it's a negative thing that we are going through this change
- I believe that the change will harm the way things are done in the organization
- I believe that the change will benefit the organization

Need for change

- I believe this change is needed
- There is no urgency to do this change
- This change is necessary.
- It is clear to me why we need this change

Perceived work effects (Loneliness+Adverse work conditions)

Loneliness

- I lack companionship.
- I feel isolated from others.
- People are around me but not with me.
- There is no one I can turn to.
- There are people I can turn to (reverse-scored).
- I do not feel alone (reverse-scored).
- There are people I feel close to (reverse-scored).
- I can find companionship when I want (reverse-scored).

Adverse work conditions

- Cuts in financial resources (salaries, bonuses, resources for training and development)
- Layoffs
- Negative attitudes from the side of employment/manager (yelling, excessive criticism, mobbing – physical and mental abuse, threatening)
- Fear of losing your job

Moderator

Social Support

- Is there someone available to whom you can count on to listen to you when you need to talk?
- Is there someone available to you to give you good advice about a problem?
- Is there someone available to you who shows you love and affection?
- Is there someone available to help with daily chores?
- Can you count on anyone to provide you with emotional support (talking over problems or helping you make a difficult decision)?
- Do you have as much contact as you would like with someone you feel close to, someone in whom you can trust and confide in?
- Are you currently married or living with a partner?

Effects

Virtual Team Performance

- Adequately completes assigned duties
- Engages in activities that will directly affect his or her performance
- Fails to perform essential duties ®
- Fulfills responsibilities specified in job description
- Meets formal performance requirements of the job
- Neglects aspects of the job he or she is obliged to perform ®
- Performs tasks that are expected of him or her

Psychological Wellbeing

- In most ways, my life is close to ideal.
- The conditions of my life are excellent.
- I am satisfied with my life.
- So far, I have gotten the important things I want in life.
- If I could live my life over, I would change almost nothing.

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by Research 03

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The role of perceived job ambiguity, change adaptability, and work effects on virtual team performance and employee psychological wellbeing

Abstract

The pandemic of COVID-19 has forced organizations to adopt new working ways, with the development of virtual teams and virtual work being one of the most significant changes. Managers must comprehend the factors influencing virtual team (VT) performance in order to effectively lead and manage remote teams. Therefore, in the current study, we employ event system theory to investigate how perceived job ambiguity (job security and insecurity), perceived change adaptability (the desire for change and resistance to change), and perceived work effects (loneliness and adverse work conditions) influence the employees' psychological well-being and the virtual teams performance. In addition, we will investigate how social support mediates the aforementioned constructs' effects. With a snowball sampling technique, data has been collected from 493 respondents residing in three developing nations: India, Russia, and Morocco. The data has been analyzed with PLS-SEM methodology. The analysis revealed that when the levels of the social support are high, the perceived job ambiguity is significantly positively related with VT Performance, while with the low social support level, the negative effects of Perceived Work Effects on VT Performance are amplified. It was discovered that virtual team performance positively influences the employees' psychological health. Thus, our paper gives valuable insights into factors affecting the virtual teams performance in developing nations and has significant implications for both theoretical and applied research.

Keywords: Virtual team performance, job ambiguity, change adaptability, work effects, psychological wellbeing.

1. Introduction

The recent Covid-19 pandemic did obviously create a great alteration and impact when it comes to both people's lives and their businesses. For example, multiple sectors worldwide face unprecedented challenges such as facility closures, workforce layoffs, disruptions in global trade, and border shutdowns for safety precautions as we approach the next economic crisis. Furthermore, roughly four out of every five CEOs/board members worldwide stated that

their firms are unprepared to deal with the Covid-19 crisis incident (EY, 2020). Globally, employees are concerned about job stability and need more confidence in finding a secure career in the future (Watkins and Yaziji, 2020). Furthermore, many employees are experiencing emotional exhaustion working from home (BBC, 2020) and burnout. In April 2020, many employees reported being burned out globally, for example, 88% employees at Lyft, 82% at Uber, and 81% at LinkedIn, Airbnb and Oracle (Shein, 2020). Furthermore, over seventy percent of today's professionals are grappling with burnout, according to Ranosa (2020), with a notable segment linking it to the widespread utilization of video conferencing (Stieg, 2020).

Work stress or burnout may also result from job ambiguity that many employees face worldwide. Definitely, usually employees prefer stability of their employment, unless they want to leave it deliberately; nevertheless, e.g., 26.5 million employees in the United States only have faced termination, resulting in an unemployment rate exceeding 20%. In the United Kingdom, over 1.8 million individuals did reportedly apply for the Universal Credit, and 12,000 British Airways employees have been warned of potential job losses (McGaughey, 2020). Preliminary projections indicate that anywhere from 14 million to 37 million jobs may be lost in the United States alone during the pandemic early stages (Devy et al., 2020). Moreover, Wallace (2020) suggests that over a billion workers globally could face financial struggles due to the pandemic's impact on employment, reduced working hours, and decreased wages. Global unemployment already stood at around 190 million according to International labor organization (Clarke, 2020).

From an organizational standpoint, the Covid-19 pandemic did challenge firms to manage their businesses in new ways, including many changes in their operations, adapting to the digital workplace, etc. (Burton and O'Neill, 2020). Yet there may be some underlying reason why few employees resist such changes. For instance, organizations are trying to permit only those needed in the office and letting others work from home. Furthermore, many physical

meetings are replaced with emails and zoom networks for social distancing reasons (Sahi, 2020; Karl et al., 2022); during such events, employers may experience changes in productivity as more employees begin to work remotely.

Virtual teams, defined by spatial as well as temporal dispersion of members with reliance on technology for communication (Garro-Abarca et al., 2021), have adapted new organizational forms during the Covid-19 pandemic. These adaptations offer organizations increased flexibility and help reduce the risk of infection spread. However, working in a virtual team can sometimes be challenging (Gupta and Pathak, 2018) due to in-person interactions deficit, that can cause social isolation. Additionally, despite the Covid-19 negative influences, it is important to examine how organizations can alleviate the detrimental effects of virtual work performance.

Furthermore, applying the event system theory developed in (Morgeson et al., 2015), model 'perceived job ambiguity' (job security and insecurity) 'perceived change effects,' (the need for change and change resistance), and 'perceived work effects' (loneliness and adverse work condition) is modelled in a multi-dimensional construct of first-degree reflective and second-degree formative nature (e.g. Walsh et al. 2020; Edwards, 2001; Law, Wong, & Mobley, 1998), followed by a study of its impact on the employees' psychological well-being and the virtual teams performance. The theory suggests that the event impact, or event strength, depends on its uniqueness, instability, and significance. Employees' views on the severity of the pandemic, thus, can affect their work attitudes and responses to distant work formats.

We will also investigate the mediating effects of social support to these constructs. Furthermore, considering such global problems as the Covid-19 pandemic, it is believed that social support can help people stay committed to their employment, reduce job effects, and adjust to changes. Moreover, one of the goals of this research is to provide the managers with well-informed solutions for enhancing employee performance virtually, giving them a sense of

job security, being ready to accept changes in the future, and understanding how to manage if any adverse work conditions may create an impact during times of crisis.

2. Theoretical background and Hypotheses

2.1 Perceived Job Ambiguity (PJA) (Job insecurity and Job security)

2.1.1 Job Insecurity

Job insecurity, that can be described as the perceived job losing threat with related social status lowering fears (De Witte, 2005), has been connected to a series of poor outcomes having consequences for both the employee and the organization as a whole. Numerous evidence states that perceived job insecurity substantially impacts employees' occupational stress, reduces employee command and consistency, and increases employees' sense of risk and vulnerability (Vo-Thanhet al. 2022; Röllmann et al. 2021; Högnäs et al. 2022). Additionally, it may harm employee wellbeing, sentiments, and performance (Ganson et al. 2021; Elshaer and Azazz, 2021; Lin et al. 2021). The ramifications of job insecurity are complicated and limited by conceptual and empirical disagreement. Most job insecurity research has concentrated on subjective job loss probability perceptions based on uncertainty in such objective working conditions as organizational structure reorganization as well as flexible contracts implementation (De Witte, 2005).

Layoffs have always been a popular strategy for restructuring an organization in uncertain times (Cascio, 2005), with the Covid-19 pandemic not being an exception (Kriz et al. 2021). To reduce labor costs, simplify operations, and improve an organization's ability to compete, organizations often implement downsizing strategies during crises and uncertain events, leading to employee insecurity (Elshaer and Azazz, 2021). Poor emotional and physical wellness, as well as a lack of dedication on the part of both individuals and the organization, are all linked to a lack of security in one's employment (Selenko & Batinic, 2013; Strazdins et al., 2004).

Work uncertainty does strongly affect essential psychological requirements, such as freedom, skill, and belongingness; this is a direct result from it (Urbanaviciute et al., 2021). When Greenhalgh and Rosenblatt (1984) first investigated job insecurity, they believed it was employees' worry of a specific job continuity loss, along with the potential loss of the job as such, as well as its vital or positive features. Definitely such unpredicted and radical changes as the shock "onlinezation" of work in the pandemic context can lead to such outcomes, weakening the employees' psychological well-being and their work performance in a virtual setting. As a result, we can arrive at our initial hypothesis.

2.1.2 Job Security

This construct is defined in (Lu et al., 2017) as "employees' expectations about the stability and longevity of their job in an organization", thus being one of the most relevant characteristics of employee commitment, engagement and performance (Bibi et al. 2016; Conklin & Desselle, 2007). Work-related consequences are directly influenced by job security, which impacts staff morale and enhances their loyalty to the workforce organization (Moshoeu & Geldenhuys, 2015). Employees expect their companies to provide a sense of job security. When workers believe this security is genuine, they feel confident and tend to demonstrate more work enthusiasm. Companies that recognize the job security importance are more prone to specifically invest into its development (Tian et al., 2018).

An employee's well-being can be predicted by job security, which is a strong predictor (Kuhnert et al., 1989). It is easier for employees to know what they must do to protect their jobs whenever management and employees agree that job security will be provided if they execute at or above organizational requirements. In contrast, employees' efforts and time may be diverted by the resulting confusion or misunderstanding. Most research results demonstrate the positive effect of job security on organizational engagement; however, evidence also exists of its negative influence on organizational commitment (Yousef, 1998). Studying the

psychological well-being influence on perceived job security in a Covid-19 context attempts to reconcile these seemingly incongruous findings. Given that job security has been associated with better performance under stressful work environments (Lu et al., 2017), we propose that, in the pandemic context, it will enhance virtual team performance and psychological well-being. Thus, the following hypotheses can be formulated:

H_{1a}: *Perceived job ambiguity positively influence VT performance*
H_{1b}: *Perceived job ambiguity positively influence psychological wellbeing*

2.2 Perceived Work Effects (PWE) (Loneliness and Adverse Work Condition)

2.2.1 Loneliness

There is little doubt that the pandemic altered the way individuals worked and engaged with their co-workers and firms throughout the globe. Social isolation, lockdown measures, and remote work all contributed to significant office loneliness in an unanticipated way (Wilding, 2021). According to a Wall Street Journal survey, since the pandemic began, work engagement has declined by 16%. (Gino and Cable, 2021). Globally, people are isolated and becoming increasingly prone to a condition known as "loneliness" (Firoz et al. 2020). Unsurprisingly, remote work impedes formation of friendly relationships. Taken together, these figures emphasize the crucial necessity of social relationships and the consequences of their disruption or abolition.

With over a third of our lives spent at work, our professional connections are crucial for our general psychological as well as physical well-being and health. Thus, fostering strong social relationships is critical for an organization's overall effectiveness and is viewed as a prerequisite for organizational health (Soares et al. 2021; Kholl, 2018; Cornelissen, 2016). Loneliness is a potentially hazardous emotion; being identified as a public health issue, has been linked to shortened life expectancy, and has been claimed to have the same health repercussions as smoking 15 cigarettes daily (Murthy, 2017). Loneliness has been

characterized as a chronic state that happens when "a gap exists between desired and actual socializing patterns" (Peplau et al., 1982, p. 136). Loneliness is a symptom of a decline in social participation and the quality of relationships. Ben-Zur (2012) investigated the contributions of loneliness and dispositional optimism to well-being. According to the study's findings, loneliness harms an individual's well-being, whereas optimism has a positive impact. Thus, we argue that the event of covid-19 has created less connection and more social isolation causing loneliness among employees and this may serve as an indicator of making a negative impact on both employee and their work.

2.2.2 Adverse working conditions

The rapid and widespread Covid-19 outbreak caused a sudden surge in workload for many employees worldwide. Prolonged exposure to extreme stressors in the work environment can result in severe physiological issues when there is insufficient time for rest and recovery. No matter how adverse the working environment is, activities that necessitate significant effort can be hampered by high levels of stress and uncertainty and especially when going from offline to online and having to spend more work using computers and online meetings. These working conditions were induced not as an option, but as a requirement due to the situation of Covid-19. It is known that employees' energy is depleted because of their jobs' high expectations, they get exhausted and burned out when the conditions become severe. People working in adverse environments more tend to engage in severe cognitive coping, which depletes their energy reserves (Lazarus & Folkman, 1984). For this study, we argue that employees people who have significant time limitations, lack technology or the general energy to work virtually or work based on the demand that was created due to crises such as Covid-19, employees frequently respond to heavy job demands by expecting and accepting lower performance, causing them to lower their performance expectations (e.g. Hockey, 1997).

All other factors being equal, employees burdened with excessive workloads will have less energy to devote to tasks that benefit their organization. This decreases their likelihood of discovering, promoting, and implementing innovative ideas. Throughout the pandemic, teleworking was frequently promoted as a solution that protected workers from infection and favored higher-level jobs in particular. However, telecommuting conditions differed according to location, family social status, and gender. The presence of a separate workstation in the housing is also contingent on the social class of the household. Teleworking's high prevalence in this category may have aggravated family connection difficulties. Domestic task increases associated with new types of teleworking, on top of home-schooling duties, appear to have resulted in a reordering of well-being across different population categories. Hence in this regard, we argue that the adverse working conditions created due to the covid-19 can impact PW and VT performance.

H_{2a}: *Perceived work effects positively influence VT performance*
H_{2b}: *Perceived work effects positively influence psychological wellbeing*

2.3 Perceived Change Effects (PCE) (Resistance to change and need for change)

2.3.1 Resistance to change

The Covid-19 crisis has imposed extraordinary pressures on every organization for rapid and radical organizational change, engaging employees of all levels from the frontline to executive. The organizational change practices are under severe strain as a result of increased demand for change and pressure to implement it more swiftly than previously. Resistance to change can be defined as “any behaviour aimed at maintaining the status quo in the face of pressures to alter it” (Zaltman & Duncan, 1977, p. 63). The cognitive resistance aspect involves the individual perceptions and beliefs about organizational changes, including their views on whether these changes are necessary and beneficial (Oreg, 2006; Piderit, 2000). Such resistance

typically has negative effects on employees' motivation at work. According to Oreg (2006), those who resist change are often dissatisfied with their daily tasks. This resistance can lead to frustration with the changes and foster loss of the organizational loyalty (Charoensukmongkol, 2016).

In their turn, Lines et al. (2015) demonstrated that the resistance to change can reduce the effectiveness of the employees' work. Bateh et al. (2013) also suggested that resistance may result in workplace disruptions and conflicts among employees. Over time, this can erode job motivation and increase turnover intentions (Wagstaff et al., 2016). Theoretically, resistance to change often arises from the perceived uncertainties associated with the change. For instance, Charoensukmongkol (2017) and Demerouti et al. (2017) found that employees resist change due to concerns about job stability and uncertainty. This aligns with Li et al. (2016), who argued that employees are hesitant to abandon familiar practices, sceptical of new methods, and wary of potential risks.

2.3.2 The Need for change

In today's rapidly evolving environment, businesses hoping for a slowdown in the pace of change are likely to be disappointed. The world is constantly transforming—population dynamics, customer trends, technology, and the economy are all in flux. Companies that do not adapt to these changes risk becoming obsolete, unable to compete in the current market. Hybrid teams, which collaborate across different locations and time zones both synchronously and asynchronously, are supported by advancing technology that facilitates virtual interactions and strengthens interpersonal connections. This approach addresses employees' psychological, social, and physical needs, fostering a more equitable and inclusive work environment by dismantling traditional office hierarchies, ultimately leading to increased employee satisfaction and productivity.

H_{3a}: *Perceived change adaptability positively influence VT performance*

H_{3b}: *Perceived change adaptability positively influence psychological wellbeing*

2.4 The Moderating Role of Social Support

The social support concept (Eisenberger et al., 2002; Ford et al., 2007) is considered a global construct with a slew of operational definitions and implications whose meanings shift over time (House, 1981). Social support was popularized by Cobb (1976), who described it as the feeling that individuals have, as part of a social reciprocal duty – which involves the notion that one is respected, loved, and cared for. Many people find social support in the form of a devoted companion or a close family member who cares about them deeply (Allen, Blascovich, and Mendes, 2002); evidence exists of mitigating effect of social support on depression, anxiety and other stress-related mental health concerns (e.g., Fleming, Baum, Gisriel, & Gatchel, 1982; Lin, Ye, & Ensel, 1999; Sarason, Sarason, & Gurung, 1997).

Employees may be better able to cope with stressful situations if they have close social ties that they can lean on (e.g., Bakker and Demerouti, 2007; Cohen and Willis, 1985; George et al., 1993), Even though social support has been widely praised by medical experts as well as the general public, the results of studies on the effects of social support in the workplace have been varied (e.g., Time, 28 July 2010). Virtual workers who believe that they are socially integrated with other members of the company are more likely to think of themselves as members of the organization (Wiesenfeld et al. (2001)).

Numerous studies demonstrated the positive social support influence on life satisfaction (Selda et al., 2013; Park and Fritz, 2015) and well-being (Siddall et al., 2013), and that support was also linked to academic well-being as a predictor of overall well-being (Garriott et al., 2015). Additionally, it has been shown that social support affects health both directly and indirectly, with the latter buffered by the negative stress effects (Cohen and Wills, 1985). Thus,

it can be suggested that the social support during such a stressful situation as a Covid-19 pandemic may improve mental health, while its absence may increase the mental health problems risk (Szkody and colleagues, 2021). Work that was done before or after Covid-19, when work became virtual and is still done in some organizations, is referred to in this study as social support. Coworkers, management, or the organization itself can provide social assistance.

Thus, the following hypotheses can be formulated:

H_{4a}: Social support moderates the perceived job ambiguity effect on Virtual Team Performance

H_{4b}: Social support moderates the perceived work effects influence on Virtual Team Performance

H_{4c}: Social support moderates the Perceived change adaptability effect on Virtual Team Performance

2.5 Virtual Team performance and Psychological Well-being

Virtual Teams (VT) typically comprise numerous individuals engaged in different tasks, responsible for collective outcomes, and heavily reliant on technology for communication (El Yousfi et al., 2021). VT represents a modern organizational structure increasing the organizational flexibility (Guinaliu and Jordan, 2016), although work in virtual teams can sometimes be less enjoyable (Gupta and Pathak, 2018) due to personal interactions lack, as the team members are often dispersed spatially, socially, and culturally. Additionally, challenges arise from handling multiple tasks, extended working hours, and increased participation in online meetings. VT members must also cope with performance issues, job insecurity, and financial uncertainties of the future (Anderson, Kaplan, and Vega 2015; Caligiuri et al. 2020), because a team's virtuality can alter over time (Handke, Klonek, and colleagues, 2020), either incrementally or abruptly due to internal or external situations (Handke, Klonek, and colleagues, 2020). For instance, due to Covid-19, these novel working

conditions for detached employees in virtual teams compelled them from all around the world to switch to virtual cooperation in a relatively short period (Klonek et al., 2021).

With dramatic increase of VT usage intensity, various evidence became available of high level of stress experiences by their members, negatively influencing their psychological well-being (e.g. Caligiuri et al. 2020; Park, Jeong, and Chai 2021). Thus, more comprehensive studies are needed for understanding how the stress caused by Covid-19 that may have resulted in job ambiguity, change adaptability, and work effects. Psychological well-being can influence on several levels of diverse employee outcomes (Aggarwal-Gupta, Vohra, and Bhatnagar 2010; Daniels and Guppy 1997; Huppert 2009; Jang 2009; Pahlevan Sharif, Ahadzadeh, and Sharif Nia 2018).

Individuals with higher psychological well-being levels more tend to foster social connections, exhibit productivity, possess strong self-determination, enjoy better physical and mental health, and get social support by request for problem-solving (Daniels and Guppy, 1997). Evidence also exists of psychological well-being enhancing organizational commitment and job performance (Aggarwal-Gupta, Vohra, and Bhatnagar, 2010), while reducing burnout, job stress and family stress (Wright and Hobfoll, 2004; Jung, 2017). To support virtual teams and enhance their members' psychological well-being, it is important to figure out the factors influencing these teams and their psychological state. Consequently, this study proposes the following hypothesis:

H_5: Virtual Team performance positively influences psychological wellbeing

3. Research design

3.1 Procedure and participants

Collection of data was lasting from August 2021 to January 2022. As the topic was sensitive, and as many employees were coping with the new normal – while adjusting to the

lifestyle and anticipation that their job is still secured, the authors faced challenges in convincing to collect the data. To gather insights from a broad range of global participants, we utilized a snowball sampling method (Walsh et al., 2020), sending the survey to various organizations' employees having personal acquaintance with that of the authors who was sending the survey (thus, increasing trust to the survey and decreasing the fear that it would jeopardize the respondents' career). We then requested these initial respondents to share the survey with others who might provide relevant feedback. This technique is effective for reaching hard-to-access populations (Walsh et al., 2020). For collection of data, the Getfouryes.com online survey platform has been used (Anand and Dalmasso, 2019), with written assurances of anonymity. The final dataset comprised 527 respondents. Of these, 409 completed the survey online, while 118 opted for a printed version for privacy and convenience. After reviewing the responses, 375 online and 118 offline submissions were deemed valid, resulting in a total of 493 valid samples.

The sample included employees from India, Morocco, and Russia, spanning all hierarchical levels in both government and private sectors. Appendix A provides details on demographic statistics: namely, the sample comprised 36.3% female and 63.7% male respondents, with a median age of 21 - 30 years. Majority of participants were from India (46.5%), followed by Russia (28.2%) and Morocco (25.4%). Most respondents (60.8%) were employed in private companies, 22.7% worked in academia, 8.9% were entrepreneurs, and 7.3% were employed by government institutions.

3.2. Measurement scales

For measuring the dependent, moderator and control variables, scales have been used validated by factorial and confirmatory analysis, demonstrating satisfactory reliability. All measures were using a 7-point Likert type scale, having a range from 1 (strongly disagree) to

7 (strongly agree); Appendix B provides detailed information about the items. Job insecurity has been assessed using a scale based on (Boswell et al., 2014), while job security has been assessed with that developed in (Conway et al., 2014). The loneliness scale is based on the work of Waytz et al. (2015), the *need for change*, in its turn, on the work of van den Heuvel et al. (2015), while the *resistance to change* was adopted from De Ruiter et al. (2017). The adverse working condition scale was adopted from Psychogios et al (2019), as measured through Jacobson's (2016) scale. *Social support* as the proposed mediator was measured through Ozer's (2015) scale and the *virtual team performance* scale was adopted from El-Yousufi et al. (2021).

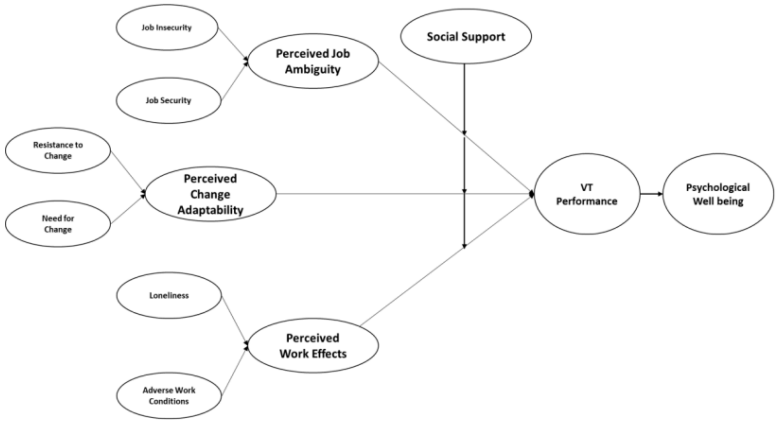

Fig. 1 Conceptual Model

4. Data analysis and results

Continuing the ideas developed in (Hair et al., 2017), partial-least-square (PLS) approach is used due to the model's complex nature (with several aggregate measures), lack of normal distribution in the data and the model included reflective and formative constructs. PLS is

suitable with complex modeling (Akter et al., 2017), does not require normal distribution data (Fornell and Cha, 1994) and can include both formative and reflective constructs (Gefen et al., 2000). Data analysis has been conducted with the Smart-PLS Version 4. The bootstrapping procedure was configured on the basis of 5000 samples, employing a bias-corrected and accelerated bootstrap method and a two-tailed approach.

4.1 Measurement Model

In this study, all predictor variables—PJA, PCA, and PWE—were treated as higher-order constructs (lower-order reflective, higher-order formative). The measurement model was evaluated with the repeated indicator approach, where lower-order constructs indicators are duplicated in the higher-order constructs. The other study variables were first-order reflective constructs; consequently, the measurement model for these reflective constructs was assessed through item loadings, reliability analysis (including Composite Reliability and Cronbach's alpha) as well as construct validity tests (such as AVEs and the Fornell-Larcker criterion).

All item loadings have exceeded the 0.707 recommended threshold, with the exception of JBINS2 and SSDCC4, which had loadings of 0.678 and 0.695, respectively. These two items were retained due to their relevance to the construct (content validity) and the potential impact their removal could have on the respective constructs' internal consistency reliability (Hair et al., 2017).

4.1.1 Internal consistency

Cronbach's alpha values exceed 0.7, and the composite reliability exceeds the 0.7 minimum threshold in all instances (see Table 1). This indicates that the measurement items' internal reliability is satisfactory for all the constructs.

4.1.2 Convergent validity

The AVEs of all reflective constructs exceed the 0.5 threshold (See Table 1). Hence, a conclusion can be made that the construct's convergent validity is adequate (Fornell and

Larcker, 1981). For the discriminant validity, the latent variable correlation (LVC) was carried out (See Table 2).

4.1.3 Discriminant validity

This validity was ensured as the diagonal values representing square roots of AVEs were exceeding the corresponding off-diagonal latent correlation values (Gefen et al., 2000; Fornell & Larcker, 1981).

Table 1
Reliability and Convergent Validity Results of Reflective Constructs

Construct	Item	Factor Loading	AVE	Composite Reliability	Cronbach's Alpha
Loneliness (LNS)	L1	0.722	0.588	0.769	0.765
	L2	0.749			
	L3	0.815			
	L4	0.777			
Adverse Working Condition (AWCON)	AWCON1	0.730	0.654	0.743	0.734
	AWCON2	0.833			
	AWCON3	0.858			
Job Insecurity (JBINS)	JBINS1	0.827	0.652	0.873	0.865
	JBINS2	0.678			
	JBINS3	0.859			
	JBINS4	0.833			
	JBINS5	0.827			
Job Security (JBSEC)	JBSEC1	0.738	0.649	0.752	0.730
	JBSEC2	0.869			
	JBSEC3	0.804			
Resistance to Change (RC)	PNCS1	0.810	0.766	0.843	0.712
	PNCS3	0.936			
Need for Change (NC)	PNCS4	0.812	0.634	0.713	0.711
	PNCS6	0.800			
	PNCS7	0.776			
Psychological Well Being (PWB)	PWB2	0.891	0.684	0.860	0.776
	PWB3	0.871			
	PWB4	0.708			
Social Support (SS)	SSDCC1	0.762	0.618	0.883	0.876
	SSDCC2	0.790			
	SSDCC3	0.819			
	SSDCC4	0.695			
	SSDCC5	0.846			
	SSDCC6	0.795			
Virtual Team Performance (VTPF)	VTPF1	0.737	0.610	0.792	0.786
	VTPF4	0.799			
	VTPF5	0.835			
	VTPF7	0.748			

Table 2
Discriminant Validity

	LNS	AWCON	JBINS	JBSEC	RC	NC	PWB	SS	VTPF
LNS	**0.809**								

AWCON	0.791	**0.807**							
JBINS	-0.007	0.07	**0.806**						
JBSEC	0.298	0.339	-0.031	**0.767**					
RC	0.081	0.084	0.27	0.014	**0.796**				
NC	-0.138	-0.1	0.298	-0.178	0.275	**0.827**			
PWB	0.156	0.134	0.233	0.1	0.512	0.236	**0.875**		
SS	-0.075	-0.106	0.227	-0.318	0.173	0.298	0.126	**0.786**	
VTPF	-0.091	-0.14	0.145	-0.162	0.196	0.295	0.181	0.482	**0.781**

4.1.4 Validity of higher order constructs

Perceived job ambiguity, perceived change adaptability, and perceived work effects were treated as formative higher-order constructs. For establishing these constructs validity, Outer Weights, Outer Loadings, and Variance Inflation Factors (VIF) were assessed (Sarstedt et al., 2019). The outer weights appeared to be significant (see Table 3). Additionally, outer loadings were generally above the acceptable threshold of 0.5, with the exception of JBINS2. However, JBINS2 was retained due to its significant outer weights (Sarstedt et al., 2017; Hair et al., 2017). The VIF values have been evaluated for collinearity, with all the values being below the recommended maximum of 5 (Hair et al., 2017). All the measurement models' paths appeared to be significant (see Table 4). Given that all criteria were met, the higher-order constructs validity was confirmed.

Table 3
Validity of Higher Order Constructs

Higher Order Constructs	Indicators	Outer Weight	T Statistics	P Values	Outer Loadings	VIF
Perceived Job Ambiguity	JBINS1	0.161***	3.509	0.000	0.561	2.111
	JBINS2	0.141**	2.906	0.004	0.493	1.451
	JBINS3	0.186**	3.479	0.001	0.649	2.348
	JBINS4	0.177***	4.814	0.000	0.615	2.122
	JBINS5	0.172**	3.055	0.002	0.601	2.161
	JBSEC1	0.241*	2.461	0.014	0.500	1.339
	JBSEC2	0.331***	3.578	0.000	0.686	1.661
	JBSEC3	0.277**	2.72	0.007	0.575	1.486
Perceived Change Adaptability	PNCS1	0.421***	25.363	0.000	0.810	1.440
	PNCS3	0.518***	34.845	0.000	0.859	1.440
	PNCS4	0.260***	14.891	0.000	0.751	1.401
	PNCS6	0.280***	15.652	0.000	0.702	1.456
	PNCS7	0.214***	11.849	0.000	0.677	1.434
Perceived Work Effects	L1	0.174***	12.575	0.000	0.573	1.440

	L2	0.203***	13.846	0.000	0.603	1.516
	L3	0.197***	12.628	0.000	0.664	1.656
	L4	0.229***	14.091	0.000	0.652	1.496
	AWCON1	0.219	14.774	0.000	0.577	1.344
	AWCON2	0.270	19.023	0.000	0.67	1.676
	AWCON3	0.252	15.419	0.000	0.672	1.830

*** Significant at p ≤ 0.001 ** Significant at p ≤ 0.01 * Significant at p ≤0.05 ns Not Significant

Table 4
Path Estimates – Measurement Models – Explanatory Variables

Paths	Coefficient	T Statistics	P Values
Job Insecurity → Perceived Job Ambiguity	0.678***	3.755	0.000
Job Security → Perceived Job Ambiguity	0.689***	3.646	0.000
Resistance to change → Perceived change effects	0.494***	37.265	0.000
Need for Change → Perceived change effects	0.640***	60.782	0.000
Loneliness → Perceived Work Effects	0.634***	32.010	0.000
Adverse Working Condition → Perceived Work Effects	0.604***	41.378	0.000

***** Significant at p ≤ 0.001 ** Significant at p ≤ 0.01 * Significant at p ≤0.05 ns Not Significant**

4.2 Common method bias

It is critical to identify and control common method bias in organizational research, as it may significantly impact the results (Podsakoff, 2003). For the common method bias identification, the Harman single factor test was used. According to factor analysis results with no rotation, a single factor explained 19% of variance, which is well within the acceptable range (Harman, 1960). As a result, we can conclude that there is no evidence of such a bias.

4.3 Hypothesis testing, Structural model, and the Path estimates

PLS results are demonstrated in Figure 2, with the statistics shown in the Tables 5 and 6. Direct effects indicate that Hypothesis H_{3a} is supported as Perceived Change Adaptability has a significant positive influence on VT performance (β=.150, t=3.410, p<.01), whereas, hypothesis H_{1a} and H_{2a} are not supported as Perceived Job Ambiguity and Perceived Work Effects have negative but insignificant influence on VT performance (β=-.066, t=1.005, p=.315) and (β=.042, t=.744, p=.457) respectively.

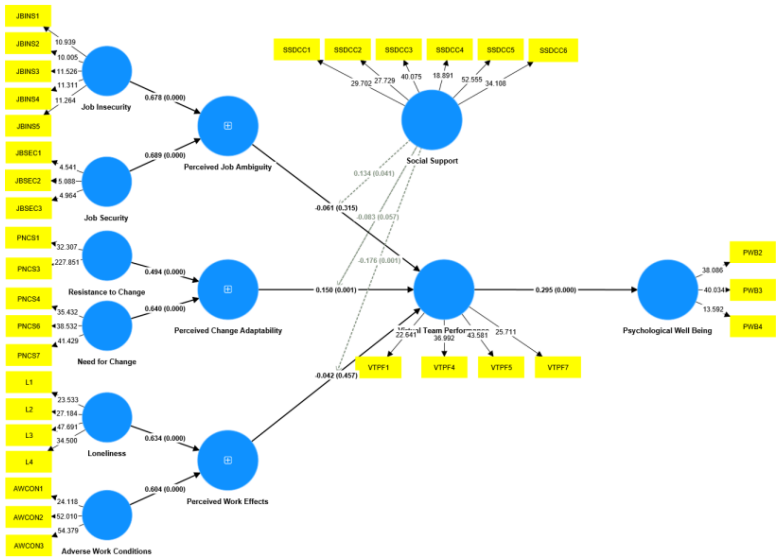

Fig. 2 Structural Model

Table 5
Structural Paths

Paths	Original Sample	T Statistics	P Values	Hypothesis Results
Perceived Job Ambiguity → Virtual Team Performance	-0.066^{ns}	1.005	0.315	H_{1a} not supported
Perceived Work Effects → Virtual Team Performance	-0.042^{ns}	0.744	0.457	H_{2a} not supported
Perceived Change Adaptability → Virtual Team Performance	0.150**	3.410	0.001	H_{3a} supported
Social Support x Perceived Job Ambiguity → Virtual Team Performance	0.134*	2.041	0.041	H_{4a} supported
Social Support x Perceived Work Effects → Virtual Team Performance	-0.176**	3.402	0.001	H_{4b} supported
Social Support x Perceived Change Adaptability → Virtual Team Performance	-0.083^{ns}	1.907	0.057	H_{4c} not supported
Virtual Team Performance → Psychological Well Being	0.295***	7.661	0.000	H_5 supported

*** Significant at p ≤ 0.001 ** Significant at p ≤ 0.01 * Significant at p ≤0.05 ns Not Significant

The moderation analysis results showed that Hypothesis H_{4a} is supported as social support demonstrated a significant positive moderating influence (Moderating effect-1) on the Perceived job ambiguity effect on VT performance (β=0.134, t=2.041, p<.05). Hypothesis H_{4b} was also supported but social support showed a significant negative influence (Moderating

effect-2) on the effect of Perceived work effects on VT performance (β=-.176, t=3.402, p<.01). However, the Social support variable did not moderate (Moderating effect-3) the Perceived change adaptability and VT performance relationship (β=-.083, t=1.907, p=.057).

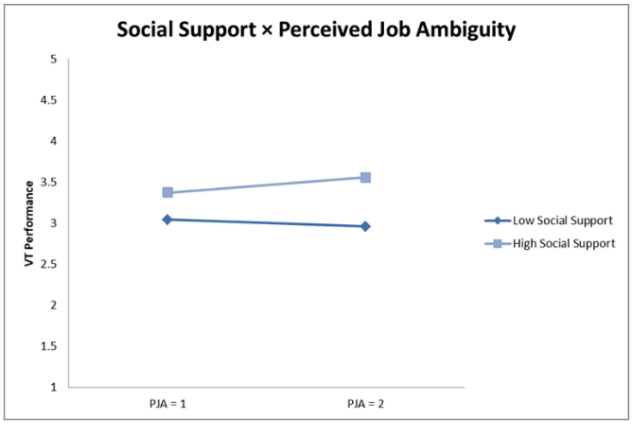

Fig. 3: Slope Analysis of Moderation Effect-1

Figure 3 depicts the moderation effect of "Social Support (SS)" on "Perceived Job Ambiguity (PJA)" and "Virtual Team Performance (VTP)" relationship. It shows that, the line of High SS has a positive slope when compared to the line of Low SS which has a negative slope, which indicates that at Low Social Support levels the Perceived Job Ambiguity is negatively related with VT Performance and at High levels this relationship is positive. Finally, Perceived Job Ambiguity in the presence of High Social Support significantly improves VT Performance.

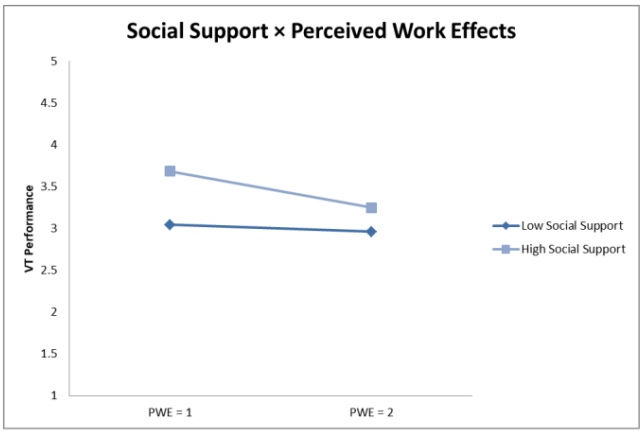

Fig. 4: Slope Analysis of Moderation Effect-2

Figure 4 depicts the moderation effect of "Social Support (SS)" on "Perceived Work Effects (PWE)" and "Virtual Team Performance (VTP)" relationship. It shows that, the line of High SS is has much steeper negative slope than the line of Low SS, which indicates that at High Social Support levels, the negative influence of Perceived Work Effects on VT Performance is higher in comparison with Low levels of Social Support. In conclusion, High Social Support further exacerbates the Perceived Work Effects and VT Performance relationship.

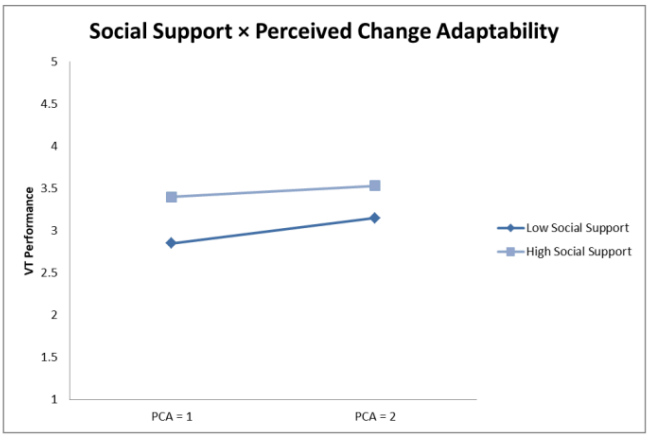

Fig. 5: Slope Analysis of Moderation Effect-3

Figure 5 depicts the moderation effect of "Social Support (SS)" on "Perceived Change Adaptability (PCA)" and "Virtual Team Performance (VTP)" relationship. It shows that, the line of High SS has a less steep positive slope than the line of Low SS, which indicates that at High Social Support levels somewhat weakens the positive Perceived Work Effects relationship with VT Performance when compared with the Low ones. In conclusion, High Social Support marginally weakens the Perceived Change Adaptability and VT Performance relationship.

Table 6
Indirect Effects

Paths	Original Sample	T Statistics	P Values	Hypothesis Results
Perceived Job Ambiguity → Psychological Well Being	-0.018^{ns}	0.976	0.329	H_{1b} not supported
Perceived Work Effects → Psychological Well Being	-0.012^{ns}	0.709	0.478	H_{2b} not supported
Perceived Change Adaptability → Psychological Well Being	0.044***	2.916	0.004	H_{3b} supported

*** Significant at p ≤ 0.001 ** Significant at p ≤ 0.01 * Significant at p ≤0.05 ns Not Significant

Table 6 represents the results of indirect effects. The results reveal that hypothesis H_{3b} is supported as perceived change adaptability has a significant positive influence on

psychological well-being (β=.044, t=2.916, p<.01). On the contrary, hypothesis H_{1b} and H_{2b} are not supported as perceived job ambiguity and perceived work effects have a negative but insignificant relationship with psychological well-being (β=-.018, t=.976, p=.329) and (β=-.012, t=.709, p=.478).

3. Discussion and implications

With the pandemic continuing to impact employees globally, it is crucial to understand its psychological effects on work environment, including perceived change effects and perceived work effects. Our study identified a direct link between the variable of perceived change adaptability and both psychological well-being and virtual team performance. The findings indicated that virtual teams (VTs) influence employees' performance at various levels. Additionally, social support was found to serve as a crucial buffer, aiding employees in managing adverse situations. This highlights the importance of maintaining employee motivation during uncertain times (Buhagiar & Anand, 2021).

Let us look on possible interpretations of most significant and interesting results in more details. The first (following the order of hypotheses as numbered) result worth special discussion is that the Hypotheses H_{1a} and H_{1b} are both not supported, with perceived job ambiguity not having a statistically significant positive influence on neither VT performance nor psychological wellbeing.

A first suggestion of this result explanation can be linked to a well-known phenomenon of difference in human stress reaction: it can be suggested that the people with “active” stress reaction would be more prone to perceiving job insecurity as a challenge stimulating to overcome it (Lu, Du & Xu, 2016), while the people with “passive” stress reaction would decrease performance in case of job insecurity, thus demonstrating a positive correlation with security (Antino et al., 2022). So, it can be supposed that the sample researched in the study consists of people with both types of stress reactions, thus balancing the influence of two

perceived job ambiguity components on the psychological wellbeing and, to some extent as its result, performance.

The "passive" stress reaction suggestion seems at a first glance a more logical hypothesis, as lots of evidence exist about greater job security increasing the level of motivation according to schemes like Maslow's pyramid (from "deficiency needs" to "growth needs"), thus increasing performance (Lăzăroiu, 2015; Long et al., 2022), including that of distributed and virtual teams (Guo, Qiu & Gan, 2022; Harris & Cha, 2022). Another argument widespread in literature is that increased job security is positively correlated with the employees' planning longevity (Blagov, Begler, Pleshkova, 2021) leading, among all, to an increased propensity for development of professional competencies, (Baluyos, Rivera & Baluyos, 2019), that can also positively influence the performance.

The suggestion about people with "active" stress reaction perceiving job insecurity as a stimulating challenge is less obvious, requiring greater attention and more scrutinized research. E.g., there is evidence that the more qualified the job, the less significant would be the influence of such stress-induced effort on performance (Wydyanto & Mahaputra, 2021; Jaques, 2022), so in addition to testing stress reactions of virtual and distributed teams participants recommendation from the suggestions related to various stress types can include analysis of how do various moderating factors (including, but not confined to, job qualification) influence the relationship between the perceived job ambiguity, stress reaction, psychological wellbeing and performance (not to say that all that seems to be a potentially fruitful topic of further research).

The next interesting result is that the hypotheses H_{2a} and H_{2b} , considering the influence of the perceived work effects, are also not supported.

The logic behind this result can be based on the same idea about various stress reaction types that has been presented in the discussion of the perceived job influence: for some VT participants such perceived work effects as loneliness and adverse working conditions can be acting as a stimulating challenge, while for others these effects would act depressingly in terms of both psychological wellbeing and performance (Parent-Lamarche & Boulet, 2021; Kaur, Kumari & Pandey, 2022).

Considering the results of testing the hypotheses H_{3a} and H_{3b}, showing significant positive influence of the perceived change adaptability on both the VT performance and the psychological wellbeing, the main possible explanatory suggestion could be that such objective and strong external influence as the CoViD pandemic could create a strong sense of loyalty in a significant percentage of organizations whose employees participated in the sample – a loyalty of a level that can decrease the *ceteris paribus* usual level of resistance to change (Aulia & Soetjipto, 2021; Ayodeji-Ogundiran, Burrell & Lewis, 2021).

Indeed, if a respondent understands the urgency and importance of changes, she could be more inclined to increase her work effort to help her surroundings, including the employer organization, to overcome the threat and its consequences (Arshad & Sabeen, 2021; Idulfilastri & Zamralita, 2022).

Considering the moderating variables, the social support positive influence on the perceived job ambiguity effect on VT performance does seem considerably expected, as the evidence of such correlation is supported by dozens of studies (not to say "supported by common sense"): indeed, if we return to the logic behind the discussion of the job security & insecurity variables, we can unite "insecurity" and "ambiguity" into a higher-level construct of "uncertainty", and lots of evidence in psychological literature exists on social support mitigating negative effects of both objective and subjectively perceived uncertainty, including that in the workplace (Charoensukmongkol & Phungsoonthorn, 2022; Petrie et al., 2022).

A more intriguing result is the significant negative social support moderating influence on the perceived work effects and VT performance relationship, not being statistically significant without that mediation. This result is rather counterintuitive, as evidence in literature suggests that social support is able to mitigate the perceived negative work effects hardships (van Zoonen et al., 2021; Göktaş & Özdinç, 2022); a possible explanation could be suggested that social support can be interpreted as a high level of "in-group collectivism" increasing resistance to adoption of new technologies perceived as pressure from senior management (Gwin, 2021)

Applying event system theory, we found that uncertainty about future employment can significantly impact various employees' attitudes and behavior. This uncertainty is likely to affect employees' short- and long-term organizational commitment. Despite the presence of supportive leadership, job insecurity remains prevalent, highlighting the extent of ambiguity and uncertainty that the Covid-19 has introduced among the employees.

In general, it can be said that the pandemic disrupted the status quo regarding the work and job attributes of employees, causing synchronization, collaboration, and efficiency in a virtual space to become stressful, resulting in individual exhaustion. Our investigation revealed, however, that there is a considerable impact on PJA, PCE, and PWE. Even before the release of Covid-19, it was evident that modern developments, changes in the economy, and geopolitical instability made it impossible to ensure employment stability for all individuals in contemporary work situations (Etehadi & Karatepe, 2019).

5.1 Theoretical Implications

While surely lots of studies have looked on job ambiguity, change adaptability, and work effects in competitive environments, research on these factors during the exceptional circumstances of Covid-19 with its impact on virtual team performance and psychological

well-being is limited. Our study is trying to fill the gap, empirically examining the influence of these parameters on the virtual team performance and their employees' psychological well-being post-pandemic. This research is among the few to investigate the job (in)security and burnout effects on organizational commitment during the pandemic, assessing the personal and organizational outcomes of these effects. Furthermore, our study highlights the social support role, demonstrating its critical importance in mitigating the effects of job ambiguity, change effects, and work effects during uncertain times and crises.

By focusing on virtual team (VT) performance and psychological aspects during the Covid-19 pandemic, applying event system theory, we conceptualized the pandemic as a significant work-related event due to its novelty as perceived by the employees. This perspective allowed us to explore how Covid-19's unique characteristics impacted VT performance and psychological well-being. Our findings reveal the negative disruption and novelty effects on perceived job ambiguity (PJA), perceived change effects (PCE), and perceived work effects (PWE). These insights not only enhance our understanding of how the pandemic influenced employee performance and psychological outcomes but also deepen our knowledge of the potential links between post-pandemic conditions and employee behaviors.

Secondly, by examining PJA, PCE, and PWE within the contexts of India, Russia, and Morocco, and their relationship to VT performance and psychological well-being, we further contribute to the growing literature body on these factors. Existing articles have often overlooked the PJA, PCE, and PWE implications on the VT performance, focusing instead on health and life quality. We argue that VT performance and psychological well-being are crucial, especially in the post-Covid-19 era and future crises.

Thirdly, we found a critical role that social support plays in buffering the PJA effects, thus suggesting that the employees feeling secure in their jobs during uncertain times more tend to exhibit strong VT performance and high psychological well-being.

Additionally, this study holds academic significance as it investigates employees' perceptions of PJA, PCE, and PWE during and after the pandemic. Our results underscore the social support importance, particularly in Asian contexts, showing its significant suppressive effect on PJA, PCE, and PWE. Despite the presence of skilled workers in Asia, Africa, and Russia, these concepts remain underexplored. The study also establishes an event system theory based theoretical foundation to validate the causal relationships between PJA, PCE, and PWE, and their impact on VT performance and psychological well-being. Understanding these factors is crucial for organizational performance and productivity, especially in organizational attempts to recover from crises. Furthermore, the value of organizational resources, including social and leadership support, is essential for effective crisis management and achieving organizational goals (Agarwal et al., 2009; Jauch & Kraft, 1986; Buhagiar & Anand, 2021; Kozachenko et al., 2021).

5.2 Practical Implications

In the crisis times, the study results offer various practical implications for managing perceived job ambiguity (PJA), perceived change effects (PCE), and perceived work effects (PWE). First, the study highlights that PJA significantly impacts virtual team (VT) performance, and social support can help employees manage virtual stress and continue to perform effectively, benefiting their psychological well-being. Organizations should explore various strategies to enhance psychological health and VT performance during crises. Additionally, fostering a supportive organizational culture and improving communication can help build employee confidence and reduce perceptions of PJA, PCE, and PWE.

Second, managers should take proactive and informed actions to mitigate the negative effects of PJA, PCE, and PWE, aiming to boost employee commitment and motivation. The more robust the organizational support during a crisis, the more likely employees are to reciprocate with support for the organization. It is crucial to create stress-free work environments and establish flexible communication channels that allow employees to express their concerns and opinions. Social support should be examined from multiple angles, including peer, leadership, and organizational levels, to understand its impact on PJA, PCE, and PWE.

Managers need to address issues related to PJA, PCE, and PWE identified by organizational members. Building strong social connections and a supportive culture, and ensuring that employees feel their concerns are acknowledged, can enhance VT performance. Measures should be implemented to help employees view their roles as integral to the organization's success. PJA, PCE, and PWE should be anticipated and minimized, as they can significantly affect employee commitment, performance, and organizational outcomes. Leaders should work to reduce these factors for VT performance improvement, especially in the crisis events context.

In summary, organizations must take into account the employee perceptions of PJA, PCE, and PWE, especially in scenarios similar to Covid-19. Ensuring job security, reducing stress, preventing isolation, and facilitating appropriate change are essential steps for managing employee well-being and performance in future crises.

5.3 Limitations and future research

While the described study does definitely provide important theoretical insights and practical recommendations, it does obviously have some limitations. Firstly, it did not consider a broad spectrum of external factors that could impact perceived job ambiguity (PJA), perceived change effects (PCE), and perceived work effects (PWE). The study relied on

subjective measures based on employee perceptions. Thus, the future research stages research should develop towards additional variables incorporation, and towards usage of such objective and verifiable performance metrics as the profit margins or HR policies, to provide a more comprehensive assessment.

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Appendix A: Demographic Profile of Respondents

S.No	Demographic Profile		Response %
1	Age	21 to 30 years	61.7
		31 to 40 years	21.1
		41 to 50 years	12.4
		51 to 60 years	4.3
		60 and above years	0.6
2	Gender	Male	63.7
		Female	36.3
3	Occupation	Faculty/Professor/Lecturer/Tutor	15.4
		Director/Dean/HOD	2.0
		Administrative/Non-teaching Staff	5.3
		Front Line Employees	7.3
		Manager(s)	14.6
		Entrepreneur/Own business	8.9
		Government Staff/Government Company/Government Institutions	7.3
		Employee in a company/firm	38.9
4	Nationality	India	46.5
		Morocco	25.4
		Russia	28.2

Appendix -B : Scales used for survey instrument
Perceived Job Ambiguity (Job Security+Job Insecurity)

Job Insecurity

- Lose your job and be laid off permanently
- Find your department or division's future uncertain
- Lose your job by being pressured to accept early retirement

- Lose your job and be moved to a lower level job within the organization
- Lose your job and be laid off for a short while
- Lose your job by being fired

Job Security

- I am confident that I will be able to work for my organization as long as I wish.
- If my job were eliminated, I would be offered another job in my current organization.
- My current organization would transfer me to another job if I were laid off from my present job

Perceived change effects (Resistance to Change+Need for change)

Resistance to Change

- I think that it's a negative thing that we are going through this change
- I believe that the change will harm the way things are done in the organization
- I believe that the change will benefit the organization

Need for change

- I believe this change is needed
- There is no urgency to do this change
- This change is necessary.
- It is clear to me why we need this change

Perceived work effects (Loneliness+Adverse work conditions)

Loneliness

- I lack companionship.
- I feel isolated from others.
- People are around me but not with me.
- There is no one I can turn to.
- There are people I can turn to (reverse-scored).
- I do not feel alone (reverse-scored).
- There are people I feel close to (reverse-scored).
- I can find companionship when I want (reverse-scored).

Adverse work conditions

- Cuts in financial resources (salaries, bonuses, resources for training and development)
- Layoffs
- Negative attitudes from the side of employment/manager (yelling, excessive criticism, mobbing – physical and mental abuse, threatening)
- Fear of losing your job

Moderator

Social Support

- Is there someone available to whom you can count on to listen to you when you need to talk?
- Is there someone available to you to give you good advice about a problem?
- Is there someone available to you who shows you love and affection?
- Is there someone available to help with daily chores?
- Can you count on anyone to provide you with emotional support (talking over problems or helping you make a difficult decision)?
- Do you have as much contact as you would like with someone you feel close to, someone in whom you can trust and confide in?
- Are you currently married or living with a partner?

Effects

Virtual Team Performance

- Adequately completes assigned duties
- Engages in activities that will directly affect his or her performance
- Fails to perform essential duties ®
- Fulfills responsibilities specified in job description
- Meets formal performance requirements of the job
- Neglects aspects of the job he or she is obliged to perform ®
- Performs tasks that are expected of him or her

Psychological Wellbeing

- In most ways, my life is close to ideal.
- The conditions of my life are excellent.
- I am satisfied with my life.
- So far, I have gotten the important things I want in life.
- If I could live my life over, I would change almost nothing.

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