



THE RELATIONS BETWEEN TECHNOLOGICAL, ORGANIZATIONAL, ENVIRONMENTAL, AND INDIVIDUAL FACTORS AND REMOTE WORKERS' PERFORMANCE: A COMPARATIVE STUDY OF THE IT SECTORS IN INDIA AND NORTH MACEDONIA

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Abstract

This study examines the relationships between technological, organizational, environmental, and individual factors and IT employees' perceptions of how remote work contributes to their performance, using an extended Technology-Organization-Environment (TOE) framework for comparative analysis between India and North Macedonia. A quantitative research design was employed, collecting survey data from 421 IT professionals working remotely – 213 from India and 208 from North Macedonia, which served as a basis for a multiple linear regression analysis. The findings indicate that organizational, environmental, and individual factors play a significant role in the relations between these factors and the perceived contribution of remote work to performance, whereas technological factors do not exhibit a statistically significant relation. The cross-country comparison revealed that, despite demographic and experiential differences, both countries exhibited similar trends in the determinants of remote work performance. This study contributes to the growing body of research on remote work by extending the TOE framework to include individual factors. It offers practical insights for organizations seeking to optimize remote work strategies by focusing on management support, home-work environment improvements, and employee well-being. The findings are particularly relevant for IT companies looking to enhance remote-work productivity and adaptability in diverse regional contexts.

Keywords: Remote work, Technology-Organization-Environment framework, Employee performance

1 INTRODUCTION

Driven by innovation, efficiency, and connectivity across industries, the information technology (IT) sector has emerged as a key component of the global economy. However, with the rapid transition to work from home (WFH) or remote working, particularly accelerated by the COVID-19 pandemic, the IT sector faces unique challenges and opportunities that set it apart from other industries (Olawale et al., 2024; Afrianty et al., 2022). This sector is inherently reliant on technology, making it both highly adaptable to remote working environments and vulnerable to the nuances of technological, organizational, environmental, and individual factors that can significantly influence employee performance (Hesselbarth et al., 2024). Often referred to as the new way of working, remote work represents a flexible, work-from-anywhere approach to working that involves the use of information and communication technologies, telecommuting, and distance working (Mukherjee & Narang, 2023). In this study, we use the term "remote work" to refer to work arrangements where employees perform their jobs outside of traditional office environments, typically from home. However, we recognize that the phrase "distributed work" has become increasingly popular in recent years, referring more generally to work done by geographically dispersed individuals or groups that may operate asynchronously and across time zones (Hesselbarth et al., 2024). While "remote work" focuses on working away from a central office, "distributed work" also captures the collaborative and structural dynamics of dispersed teams. In the IT sector, where virtual teamwork is common, we use "remote work" to reflect both physical distance and distributed work characteristics, aligning with terminology used in current empirical studies. Unlike traditional industries, the IT workforce focuses on knowledge-based tasks, software development, and digital infrastructure, making it reliant on cutting-edge technology and virtual platforms (Messenger & Gschwind, 2016). Adopting remote work policies in IT has been driven by technological advancements, changes in employee expectations, and a growing recognition of the benefits of remote work.

The transition to remote work in the IT sector reflects larger technological and societal changes. This level of digital preparedness has enabled IT profes-

sionals to carry out nearly all their tasks remotely while maintaining their high levels of performance and effectiveness (Oriekhoe et al., 2024; Oyewole et al., 2024; Okoye et al., 2024; Joel et al., 2024). The increasing prevalence of remote work in the IT industry has drawn attention to the variables affecting worker performance in this setting. The remote work benefits include increased productivity, improved work-life balance, and access to a broader talent pool (Haque, 2023). Moreover, organizations have observed significant cost savings due to reduced needs for physical office spaces (Johnson, 2021). Supporting the positive impact, Vesal et al. (2024) revealed that remote work is more likely to increase worker performance than financial incentives. While remote work aligns with the sector's digital nature, challenges like data security, technical infrastructure, and communication breakdowns require organizations to rethink employee management and support (Sahut & Lissillour, 2023).

A thorough lens for analyzing these elements is provided by the Technological, Organizational, and Environmental (TOE) framework. The TOE framework, originally developed by Tornatzky and Fleischer (1990), categorizes the factors influencing organizational processes into three domains: technological (tools and infrastructure), organizational (internal policies and culture), and environmental (external or contextual conditions). With organizations quickly implementing tools and platforms to support remote work, technology has emerged as a crucial enabler of WFH or remote working. Remote working in the IT sector is bringing new changes – long commutes have been replaced with applications like Zoom and other conference modes of working. More specifically, a broad range of remote technology operations has become a "new normal" for organizations in the IT sector (Grant & Russell, 2020). However, this shift has also led to new dynamics in employee performance, driven by various factors including technology, environment, and organizational practices. Yet, by only analyzing the factors that relate to the organization and the environment, we believe that we leave out a vital part of the performance of the workforce – the employees themselves. Considering this, we include individual factors such as job fulfillment, mental health, and flexibility in the analysis to build upon the existing TOE framework, thus proposing a TOE-I model. These factors are also beneficial to the inves-

tigation of the enablers and disruptors of remote workers' performance as they relate to the personal characteristics of personal job crafting, perceptions, and intentions about the job in the specific technological setting (Aligarh et al., 2021).

The performance of employees in the IT industry is highly dependent on the efficiency and efficacy of technical tools and resources. Organizational factors such as leadership support, communication, and company culture also influence how well employees adapt and thrive in remote work settings (Mihelič et al., 2021; Sahut & Lissillour, 2023). Remote options will still thrive for individual contributors and roles best suited to asynchronous work. Companies expect an increased focus on performance-based evaluations, technology for seamless virtual integration, and evolving company cultures adapting to this dynamic ecosystem (Majumdar, 2024). Cloud computing, virtual communication tools, collaboration software, and high-speed internet have become indispensable elements of the contemporary work-from-home environment. So, while these flexible working arrangements have offered flexibility and productivity boosts on a personal level, they have also brought challenges in terms of maintaining spontaneous communication between colleagues as well as team cohesion (Šešok et al., 2024). There are also other difficulties to consider, like cybersecurity threats, tech fatigue, and problems with the sufficiency of resources. It is indisputable that organizations need to use the right technology to change the way they operate now to ensure the performance of employees (Abed, 2020). Organizational factors encompass the leadership, policies, culture, and management practices that relate to remote working. The environmental factor – the home setting, which was not originally designed as a workspace, can present challenges such as inadequate ergonomic setup, distractions, and an imbalance between work and personal life. Organizational factors, including leadership, culture, and support systems, are crucial in determining the success of WFH arrangements. On the other hand, individual factors contribute to positioning the perceptions, mental health, motives, and characteristics of remote workers in this setting.

Thus, the study aims to investigate the relations of technological, organizational, environmental, and individual factors on employees' perception of how

remote work contributes to their performance within the IT sector, through a comparative analysis of India and North Macedonia. The rationale behind selecting India and North Macedonia as the subjects of this comparative analysis is their unique and perceptive differences in the growth of the IT industry, the uptake of new technologies, and remote work patterns. These two countries offer a compelling contrast due to their different stages of IT sector maturity, technological infrastructure, and organizational practices, while also displaying some similarities, which proposes an interesting juxtaposition in terms of the research context. Despite the growing research on remote work, there remains a scarcity of empirical studies specifically focusing on IT professionals' perceived performance under remote settings, especially through a holistic lens. Existing literature tends to emphasize either technological or organizational factors in isolation, often overlooking the critical role of individual-level factors such as personal well-being and job fulfillment. Additionally, few studies compare these dynamics across regions with differing IT sector maturity, leaving a gap in understanding how remote work challenges and enablers may vary across cultural and economic contexts. This research aims to address these gaps by extending the TOE framework and conducting a comparative study between India and North Macedonia.

The paper is structured as follows. Sections 2 and 3 present the theoretical framework and hypotheses development from the TOE-I framework, together with an in-depth explication and reasoning behind the chosen methodological approach. Section 4 describes research results and findings, while Section 5 presents the discussion of the findings, the implications, and pathways for future research. In the end, the conclusion summarizes the key findings.

2 THEORETICAL BACKGROUND

2.1 Performance and remote work in the context of India and North Macedonia

Considering that India is one segment of our research context, prior studies have analyzed the factors that stimulate positive employee well-being and performance as opposed to those that negatively affect it. Organizations with greater digital ma-

turity and automation through the integration of Industry 4.0 (I4.0) technologies have benefited significantly from it after the COVID-19 outbreak, as they have been able to sustain productivity levels effectively (Narayanamurthy & Tortorella, 2021). Because remote work performance relies heavily on communication technologies to coordinate the work, it is necessary to examine the relationship between the nature of the task and the effectiveness of communication technology that impacts team performance (Garro-Abarca et al., 2021). Further studies show that using digital technologies significantly improves coordination, communication, knowledge sharing, and decision-making, leading to better job performance (Duan et al. 2023). In this sense, contemporary theoretical contributions open new avenues for understanding how digital tools are used in digital work and how that affects productivity (Dincelli & Yayla, 2022). They facilitate understanding the potential of technologies and how people may adopt technology to reach that potential to accomplish their goals and perform better at work.

Moreover, it was found that the established IT infrastructure, the ability to autonomously perform tasks, and the flexibility positively influence the work-life balance, performance, and satisfaction of workers from the IT sector (Jamal et al., 2021). Yet, when they felt a higher workload pressure, were isolated from their work peers, distracted from their families at home, and believed the tasks to be interdependent, they experienced stress and exhaustion from work (Jamal et al., 2021; Noonan & Glass, 2012). Mukherjee and Narang (2023) conducted an exploration of the positive experiences associated with remote work in India. They identified several aspects contributing to the growing popularity of work-from-home practices, including greater performance and efficiency, flexibility, and reduced commutes. Therefore, a sizable percentage of workers viewed the possibility of continuing to work from home in the future with positivity (Mukherjee & Narang, 2023).

Experiences regarding performance and the employees' lives while remote working have also been analyzed in the European context, where North Macedonia is located as the second segment of the research context in this cross-country study. Technological and social trends have been especially

pronounced in the country, shifting more jobs into the country's IT sector, with recent years showing drastic employment growth in the sector (Apostolova Nikolovska & Dimitrovska, 2021). Moreover, the sector's biggest challenges involve a lack of quality staff and knowledge management practices as well as high employee turnover rates, yet it is noted that it remains one of the most attractive sectors, especially for youth, which is evident by the high job satisfaction rates (Levkov et al., 2020). Hence, remote work has become an integral part of the Macedonian sector, too, much like the cases of other countries.

As the post-COVID period has been marked with prevailing remote work practices in the country, some studies point out that Macedonian remote workers in the IT sector highly value the working space and experience as important factors for being successful in this type of working arrangement (Đukanović et al., 2022). Additionally, Macedonian remote workers tend to look positively towards this flexible work arrangement as they see it as an option for reducing stress while being more productive (Đukanović et al., 2022). Additional analysis of Macedonian digital workers and their performance showed that prior experience or job tenure, individual skills, motivation, and collaboration with team members are significant precursors to productivity (Postolov & Kitanovikj, 2024). Moreover, the well-being of Macedonian remote workers is also seen as crucial for maintaining and improving performance while remote working (Eftimov & Kitanovikj, 2024). Yet, there is still a growing gap in the literature concerning the state, attitudes, and perceptions related to the performance of employees in the IT sector who are working remotely, or which aspects they believe enhance performance in these settings.

Furthermore, in the European context, it was found that remote work is a feasible working arrangement that can generate benefits and positive outcomes for both the organization as an entity and the workforce itself (Barabaschi et al., 2022). A study focusing on Italian employees concluded that when the presence of autonomy, trust, and motivation is strong, the physical presence, per se, isn't a central tenet to ensuring high-performance levels of workers (Barabaschi et al., 2022). The resolution and willingness of employees to continue working remotely

have been emphasized by other researchers. Błaszczuk et al. (2022) explored the preferences and performance perceptions of employees in Poland who see a change in the remote working model as a positive phenomenon. Additionally, a large portion of the workforce stated that they would be willing to leave the organization if they felt forced to change the working model (Błaszczuk et al., 2022).

Connections between the model of working in question and performance have been the subject of studies in other research contexts, like Australia and Canada. The perceived individual performance is high despite the shift to working from home due to the pandemic lockdowns. Not only that, but employees who continued working remotely were also found to have higher performance, concentration, and an increased notion of organizational belonging (Durakovic et al., 2023; Chow et al., 2022). Tleuken et al. (2022) paid attention to the concept of a residential built environment on high performance in a remote work setting, which includes health and safety, the type of indoor environment, working comfort, the presence of facilities, and more. As a result, it was demonstrated that the residential built environment's indirect impact on employee satisfaction through the mediation of productivity is more fundamental than its direct impact (Tleuken et al., 2022).

While much of the existing literature explores remote work in various industries, there is limited research that specifically focuses on IT professionals. The IT sector faces unique challenges due to its reliance on technology in the remote working system. So, there is a need for more focused studies on how these challenges shape the perceived employee performance in this industry. The literature sheds light on several WFH components, including home environment, organizational support, and technology tools. However, it is unclear how these elements relate to worker performance in the IT industry. Most research that is now available concentrates on isolated factors or sectors other than IT, leaving a gap in the specific context of IT professionals who deal with expectations and challenges. Moreover, there is limited empirical research that quantifies the relative role of each factor, which is crucial for developing targeted strategies to enhance employee performance in remote work set-

tings. Further, there is a need to understand how the factors relating to the perceived employee performance in remote work differ across these two regions, especially in the context of cultural and economic differences. The present study reflects on comparing remote work experiences and challenges across different countries, particularly between India and North Macedonia, where employees reflect on how remote work contributes to their performance. While several studies focus on the technological and organizational aspects of remote work, the present study highlights the impact of the home environment as a workspace in the IT sector.

2.2 Theoretical framework and hypotheses development

In this study, the Technological, Organizational, and Environmental (TOE) framework classifies technology, organization, and environment as the three sets of factors that contribute to how employees perceive remote work shapes performance in an organization. These factors facilitate employee work performance in the context of remote work by providing the necessary infrastructure, policies, and supportive environments. As such, we believe they play an important part in the smooth transition to remote work, fostering adaptability, integrating technology, and cultural shifts within the organization.

Over the years, the TOE framework has been frequently applied in contexts beyond technology adoption, although this is the area where it was first applied. Moreover, it has been used to study e-learning systems (Alshamaila et al., 2013), mobile payments (Mahakittikun et al., 2021), e-commerce readiness (Oliveira & Martins, 2010), digital transformation, innovation, bank performance (Abdurrahman et al., 2024), entrepreneurial business performance (Singh et al., 2024), and more. These studies reflect the flexibility of the TOE model in capturing the relations of contextual factors on organizational and, more recently, individual-level behaviors. This framework provides a helpful lens for evaluating how internal (organizational) and external (technology and environmental) factors interact to create performance results in digitally intensive work contexts, such as remote work.

Although the TOE framework explains technology adoption at the corporate level, its adaptability enables it to be used to explain individual-level outcomes in digitally mediated situations (Tornatzky & Fleischer, 1990). Technological, organizational, and environmental domains shape the infrastructure, practices, and constraints within which employees work in a remote work setting (Nguyen et al., 2022).

Technological factors. Due to the nature of remote and distributed work, technology plays a massive role in the overall performance of organizations and employees (Orel et al., 2025). In this setting, technology encompasses the digital infrastructure, tools, and competencies that enable employees to work remotely, supporting task execution, facilitating communication and collaboration between team members and across the organizational structure (Ng et al., 2022). Researchers note that technological readiness and digital orientation, ensuring employees have a reliable internet connection and necessary devices, is a minimum requirement for effective WFH arrangements (Ng et al., 2022). In practice, companies that invest in solid IT infrastructure and collaboration tools (e.g., cloud-based productivity suites, video conferencing, project management software) can significantly boost remote workers' performance by smoothing communication and workflow interruptions (Yang, 2024). However, technological factors also include potential challenges that must be managed, such as technostress, technical difficulties in the form of unreliable connections, software issues, or cybersecurity concerns, which may disrupt their performance (Mariani et al., 2023). As a result, this study focuses on the sentiments of achieving a technical advantage and effectiveness during remote work while testing employees' digital orientation. Considering that, we believe that the employees in the IT industries in the two countries perceive their performance levels as higher with the presence of the right set of technological factors (e.g., network stability, digital infrastructure). Thus, we propose the following hypothesis:

H1: Technological factors are positively and significantly associated with employees' perceptions of remote work's contribution to their performance.

H1a: Technological factors are positively and significantly associated with Indian employees' perceptions of remote work's contribution to their performance.

H1b: Technological factors are positively and significantly associated with Macedonian employees' perceptions of remote work's contribution to their performance.

Organizational factors. These factors refer to the workplace policies, support systems, culture, and managerial practices that shape remote work's impact on performance, govern the motivation of employees, and the work alignment (Ng et al., 2022). A strong finding across studies is that organizational support and management readiness are pivotal for successful remote work, where companies that adapt their practices by implementing clear work-from-home policies, providing necessary equipment, and establishing guidelines (for communication, data security, performance expectations, etc.) create an environment where remote workers can thrive (Reshma et al., 2025). We believe that support from senior leadership, such as ensuring resources and training are available for remote staff and fostering a culture that values flexibility and outcome-based performance (rather than rigid micromanagement), has been linked to better workforce productivity and satisfaction. Thus, the items used for measuring this factor consider the work culture, communication with the supervisor, level of assigned workload, and work assignment diversity. Subsequently, the hypothesis related to this is as follows:

H2: Organizational factors are positively and significantly associated with employees' perceptions of remote work's contribution to their performance.

H2a: Organizational factors are positively and significantly associated with Indian employees' perceptions of remote work's contribution to their performance.

H2b: Organizational factors are positively and significantly associated with Macedonian employees' perceptions of remote work's contribution to their performance.

Environmental factors. In the context of remote workers' perceived performance, by environmental factors we understand the external and contextual elements that influence remote work, including both the physical environment of the home workspace and the broader external environment of the business or the employer (Giang et al., 2021). Remote employees work in varying home conditions where some may have a dedicated, ergonomic office with minimal distractions, while others juggle work in shared spaces or with family demands. As a result, it was demonstrated that heterogeneity in the physical home office environment helps explain differences in productivity, where employees who reported higher satisfaction with home office factors such as furniture comfort, noise levels, air quality, lighting, and overall workspace setup also reported higher productivity and lower burnout (Stroom et al., 2024). Here, we also include the influence of the family members and the collaboration with external business stakeholders and clients. As a result, we hypothesize the following:

H3: Environmental factors are positively and significantly associated with employees' perceptions of remote work's contribution to their performance.

H3a: Environmental factors are positively and significantly associated with Indian employees' perceptions of remote work's contribution to their performance.

H3b: Environmental factors are positively and significantly associated with Macedonian employees' perceptions of remote work's contribution to their performance.

Individual factors. Building on the current model, we propose the TOE-I model to incorporate individual factors such as self-management, adaptability, and mental well-being since remote work necessitated these factors (Grant et al., 2013). As a result, in this factor we measure the individual work fulfilment, the impact of the individual skills and competencies, personal work flexibility, and mental health. This extension offers a more holistic understanding of employee performance in remote settings and contributes to the theoretical coherence of our model. This theoretical expansion is aligned with recent research highlighting the interplay between external structures and individual agency in

digital work contexts (Dincelli & Yayla, 2022). Considering this, the next hypothesis is:

H4: Individual factors are positively and significantly associated with employees' perceptions of remote work's contribution to their performance.

H4a: Individual factors are positively and significantly associated with Indian employees' perceptions of remote work's contribution to their performance.

H4b: Individual factors are positively and significantly associated with Macedonian employees' perceptions of remote work's contribution to their performance.

Drawing from the TOE-I framework and the research objective, the central research question is: how do technological, organizational, environmental, and individual factors associate with the perception of how remote work contributes to the performance of employees in the IT industry?

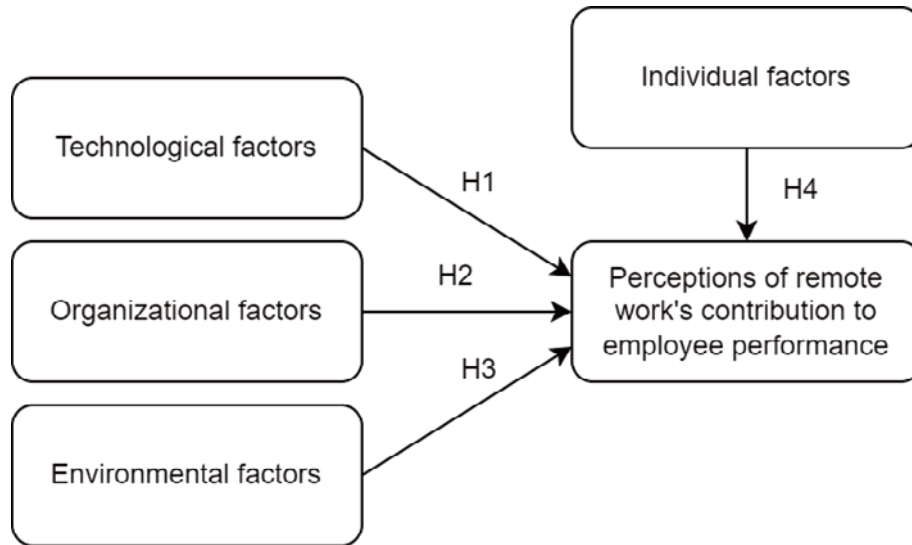
Subsequently, the conceptual model (Figure 1) visually presents the relationships between the variables, which are empirically tested.

The above conceptual model consists of several critical components, including technological, organizational, and environmental factors, which collectively relate to the employees' perceived performance levels. Similar models have been put forward by other studies, which explore performance on a firm level and in different contexts (Mahakittikun et al., 2021). In addition, we include a new set of individual factors as demonstrated by Aligarh et al. (2021). We believe these elements work synergistically to provide a comprehensive framework for understanding the dynamics of employee performance in technology-driven environments. This model underscores the importance of aligning external and internal factors to optimize remote work settings so that employees meet their performance goals.

3 RESEARCH METHODOLOGY

To fulfill the research objective of analyzing the relationships of technological, organizational, environmental, and individual factors on IT employees'

Figure 1: Research model



perception of how remote work contributes to their performance in remote working environments within the IT sector in India and North Macedonia, we collected data from employees in the IT sectors of the two respective countries, who are working remotely. Namely, the data was obtained through a questionnaire, disseminated in January 2024.

At the beginning of the questionnaire, all participants needed to provide personal consent for participation in the research endeavor. At the same time, the respondents' full anonymity was ensured. The questionnaire consisted of three distinct parts, where the first one consisted of two eliminatory questions to fit the desired criteria of the data sample. In this sense, the first two questions asked the respondents to provide the industry where they were currently working and if they were working remotely exclusively, so that we could later filter and include data from participants who worked in IT and were working exclusively remotely. Then, followed the second group of questions – the questions related to distinct aspects of technological, organizational, and environmental factors, to which the participants answered whether they believed a particular aspect related to their performance while remote working on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). In this sense, the survey items were adapted from past studies, which were grounded in the TOE-I framework, to ensure the scales were validated.

Each of the analyzed variables was measured with five items (examples of which are provided in the appendix). The items describing technological factors, such as "I believe remote work enables me to achieve technical advantage," and "Digital orientation helps me achieve better results during remote work," were adapted from Aligarh et al. (2021). The items referring to organizational factors and performance were adopted from Ng et al. (2022), and incorporated the likes of "My organization has a work culture that enables me to achieve better results during remote work," and "My communication with my manager(s) is at a level that enables me to achieve better results during remote work." The items regarding environmental factors, including "The influence of the family members in my household affects my performance during remote work," and "The feedback from clients helps me to achieve better results during remote work," were adopted from Nguyen et al. (2022). The items related to the individual factors were adapted from Grant et al. (2013) and consist of statements like "My individual skills and competencies help me to achieve better results during remote work," and "My mental health improves when working remotely instead of regular work arrangements."

Eventually, the third set of questions related to the country where they live and work, job position, gender, age, marital status, and family type were included to assess the demographic characteristics of

the participants (depicted in Table 1). To avoid the potential challenges of common method bias and to disrupt some potential interference between questions, the questions' order was randomized, and other post-hoc statistical remedies were conducted, which are explained further.

A pilot test was conducted with a sample of 27 respondents, after which the survey and the items were refined. The final survey after the pilot testing was utilized for the data collection process. After the data cleaning procedure, the final sample included 421 participants (213 from India and 208 from North Macedonia), ensuring a balanced approach

to the data analysis and interpretation. Furthermore, to enhance reliability, two items measuring the technological factors and one item from the individual factors, were removed. The final set of items is presented in full in the Appendix.

For the data analysis, we relied on multiple linear regression modeling using IBM SPSS version 25. This methodological approach finds a wide range of applications for testing the relations between one dependent variable and several independent ones (Hair et al., 2006). Table 2 presents the differences in the analyzed factors between the two countries.

Table 1: Demographic characteristics of the respondents

Demographic	India		North Macedonia	
	Frequency	(%)	Frequency	(%)
<i>Age</i>				
18-25 years	33	15.49	30	14.42
26-35 years	136	63.85	111	53.37
36-45 years	31	14.55	47	22.60
46-55 years	13	6.10	18	8.65
56+ years	0	0	2	0.96
<i>Gender</i>				
Female	96	45.07	77	37.02
Male	116	54.46	127	61.06
Other/Prefer not to disclose	1	0.47	4	1.92
<i>Job experience</i>				
0-5 years	117	54.93	65	31.25
6-10 years	49	23.00	49	23.56
11-20 years	38	17.84	59	28.37
21-30 years	9	4.23	29	13.94
31+ years	0	0.00	6	2.88
<i>Marital status</i>				
Not married	131	61.50	107	51.44
Married	81	38.03	96	46.15
Separated/Widowed	1	0.47	5	2.40
<i>Family type</i>				
Nuclear	144	67.61	143	68.75
Joint	69	32.39	65	31.25

Table 2: Mean indicators for each factor for India and North Macedonia

Country	Technological factors	Organizational factors	Environmental factors	Individual factors
India	4.122	4.014	4.072	4.155
North Macedonia	3.959	3.903	3.779	4.035

As can be seen in Table 1, most respondents in both countries belong to the 26-35 years age group (India: 63.85%, North Macedonia: 53.37%), followed by the 36-45 years age group (India: 14.55%, North Macedonia: 22.60%). This suggests that the workforce in the IT sector is predominantly young, an important factor when analyzing adaptability to remote work technology, digital skills, and performance. Yet, the presence of older respondents (46+ years) is significantly lower, indicating that younger professionals are more likely to be more engaged in remote IT work. Furthermore, the 0-5 years of experience group is the largest in India (54.93%) but lower in North Macedonia (31.25%), while a larger proportion of North Macedonian respondents have 11-20 years of experience (28.37%), and 21-30 years of experience (13.94%) compared to India. This may indicate that the Indian IT remote workforce is relatively younger in terms of experience, which might influence their perspectives on productivity, collaboration, and adaptation to remote work tools. Additionally, the nuclear family structure is dominant in both countries (India: 67.61%, North Macedonia: 68.75%). Namely, a significant portion of respondents also live in joint family setups (India: 32.39%, North Macedonia: 31.25%). This could implicate remote work efficiency, especially in joint families where shared living spaces might pose distractions and performance challenges.

4 RESULTS AND FINDINGS

To investigate the relations of each TOE-I factor per the proposed theoretical framework on the dependent variable, employees' perceived contribution of remote work on their performance, we used a multiple regression analysis approach. We believe this methodology was suitable for determining the relationships between the chosen variables, which have been explained in the existing theory of the research field.

Before the analysis assessment, we verified the state of multicollinearity and construct reliability. Considering that, to improve validity and reliability, all items that had loadings that were lower than 0.5 were not included (Hair et al., 2006), which was previously highlighted in the methodological description. The final loadings ranged from 0.518 to 0.824. Moreover, to assess the internal consistency, we used Cronbach's alpha. The final set of items all had a Cronbach's alpha coefficient higher than 0.70, as a recognized threshold, reaffirming the consistency (Nunnally, 1978). These results are presented in Table 3.

To ensure the negative effects of common method bias don't interfere with the regression model, we conducted several statistical remedies. First, the Kaiser-Meyer-Olkin (KMO) (.888) and Bartlett's Test of Sphericity ($p < .001$) analyses were

Table 3: Results of reliability measurement

Constructs	Factor loadings	Alpha coefficients
Individual factors	0.518 – 0.733	0.740
Technological factors	0.612 – 0.676	0.711
Organizational factors	0.786 – 0.797	0.877
Environmental factors	0.551 – 0.736	0.723
Employee performance	0.646 – 0.824	0.878

applied, confirming that the data meets the core pre-conditions for factor analysis and that the items are sufficiently correlated to justify extracting one or more latent factors, considering that KMO is above the 0.5 threshold and Bartlett's test of sphericity score is below the 0.05 threshold (Hair et al., 1998).

A non-response bias test has also been conducted (Armstrong & Overton, 1977). Moreover, an independent t-test and chi-square test were performed based on the inputs of the first and the last 100 respondents (Chatterjee et al., 2023). Thus, we used a one-way ANOVA to compare the means of multiple groups, which were formed by the first and last 100 respondents (Bag et al., 2021) as the factor variable, looking for non-significant results (p -value $> .05$). As a result, no value proved to be significant, meaning that there is no difference between the first and the last 100 respondents (Table 4).

In the case of self-reported data, such as the one in this study, there is a potential for common method bias due to consistency motif and the respondents' willingness to improve their social desirability (Podsakoff et al., 2003). To assess whether this type of bias is present, besides randomizing the questions'

order, statistical analyses were also conducted. Namely, a Harman single factor test (SFT) was performed post hoc as suggested by Kock (2020) and Aguirre-Urreta and Hu (2019). The result indicated that the first factor explained just 44% of the variance, which is below the recommended value of 50% (Kock, 2020), demonstrating that the obtained results are more likely to reflect the true relations between the variables in question rather than being influenced by one common method factor.

Table 5 presents descriptive statistics, including the mean and standard deviation for each item, along with the correlation matrix, illustrating the degree of linear relationship among the independent variables and their correlation with the dependent variable. The findings reveal that all bivariate correlations among the independent variables remain below 0.9, aligning with the recommendations of Hair et al. (2006). Furthermore, the variance inflation factor (VIF) was utilized to evaluate multicollinearity, with values ranging from 1.824 to 2.222, all below the threshold of 5, which is in line with the suggestion outlined by Hair et al. (2006). This indicates that multicollinearity is not a significant concern in this study.

Table 4: ANOVA results

		Sum of Squares	df	Mean Square	F	Sig
Individual factors	Between groups	0.329	1	0.329	0.491	0.483
	Within groups	128.078	199	0.643		
	Total	128.407	200			
Technological factors	Between groups	0.142	1	0.142	0.301	0.573
	Within groups	93.687	199	0.471		
	Total	93.829	200			
Organizational factors	Between groups	0.786	1	0.786	1.169	0.268
	Within groups	149.673	199	0.752		
	Total	150.459	200			
Environmental factors	Between groups	0.08	1	0.08	0.13	0.83
	Within groups	117.34	199	0.589		
	Total	117.42	200			
Employee performance	Between groups	0.161	1	0.161	0.215	0.645
	Within groups	140.804	199	0.707		
	Total	140.965	200			

Table 5: Descriptive statistics and correlation matrix

Variables	IF	TF	OF	EF	EP
Mean	4.096	4.076	3.967	3.948	4.068
S.D.	0.692	0.716	0.697	0.671	0.757
Individual factors	1				
Technological factors	0.686**	1			
Organizational factors	0.662**	0.692**	1		
Environmental factors	0.712**	0.702**	0.722**	1	
Employee performance	0.724**	0.669**	0.779**	0.721**	1

Note: **Correlation is significant at the 0.01 level (two-tailed).

The results of the regression analysis of the association of technological, organizational, environmental, and individual factors and the contribution of remote work in employees' performance in IT companies, together with the model summary, are presented in Table 6. The adjusted R Square demonstrates that these factors explain 83.6% of the variance in the dependent variable, while the remaining 16.4% can be attributed to other variables.

The individual factors' coefficient $B = 0.300$ with a t-value of 6.535 and p-value < 0.001 suggests that individual factors significantly contribute to the dependent variable. The standardized beta coefficient (Beta = 0.275) indicates a moderately strong association compared to other variables. On the other hand, the results for the technological factors indicate that these factors do not have a statistically significant relation at conventional significance levels ($p < 0.05$). The low Beta = 0.063 further suggests a weak relation with the dependent variable. We be-

lieve this may be likely due to the assumption that technology does not play a drastically significant role in how employees perceive remote work's contribution to their performance in the IT sector, considering they heavily rely on technology during the in-office work arrangements, as well. The variable referring to the organizational factors shows the strongest association, with $B = 0.469$, Beta = 0.432, and a highly significant t-value of 10.108 ($p < 0.001$). With $B = 0.191$, Beta = 0.169, and a significant t-value of 3.753 ($p < 0.001$), the environmental factors also significantly relate to the dependent variable, though to a lesser extent than organizational factors.

Thus, it can be summarized that H1 is not supported, while H2-H4 are supported after the bivariate correlations and multiple linear regression operation. More precisely, in the case of technological factors (H1), although the zero-order correlation is significant, the effect is no longer significant once the other three factors are entered in the regression

Table 6: Regression model based on the data from India and North Macedonia

Variables	B	SE B	Beta	t-value	Sig.	VIF
Individual factors	0.300	0.046	0.275	6.535	<0.001	1.947
Technological factors	0.067	0.045	0.063	1.480	0.140	2.111
Organizational factors	0.469	0.046	0.432	10.108	<0.001	1.824
Environmental factors	0.191	0.051	0.169	3.753	<0.001	2.222
Model Summary	R-square			0.836		
	Adjusted R-square			0.832		
	Std. error of the estimate			0.4168		
ANOVA Regression	F = 242.207, Sig = < 0.001					

model. In terms of the other factors (H2-H4), the positive relationship persists after adjusting for the other variables with a relatively strong effect.

Generally speaking, the F-statistic ($F = 242.207$, $p < 0.001$) indicates that the overall regression model is statistically significant, meaning that the independent variables collectively associate with the dependent variable.

To go deeper into the country comparison, we conducted two separate regression models to assess whether some significant contrasts emerge, or the situation is similar for both remote workers in India and North Macedonia. Table 7 presents an overview of the regression model based on the data acquired from Indian remote workers ($N = 213$).

The model was significant, $F(4, 208) = 169.075$, $p < .001$, and explained 76.5 % of the variance (Adj. $R^2 = .760$). Organizational factors ($\beta = .374$, $p < .001$), individual factors ($\beta = .365$, $p < .001$), and environ-

mental factors ($\beta = .206$, $p < .001$) emerged as positive predictors, whereas technological factors were non-significant ($\beta = .027$, $p = .642$). No issues with multicollinearity ($VIFs < 3.1$) or autocorrelation (Durbin-Watson = 2.06) were detected. This is in line with the findings from the main model that reflected both countries and remote work perceptions (H1a = not supported; H2a-H4a = supported). Yet, some differences are evident, one of the most prominent ones being that both organizational and individual factors have the strongest relations with a near equal degree of strength. This signals that the support from the organizational structure and the individual characteristics can strongly shape remote workers' perceptions, whereas additional aspects of the broader environment remain less significant.

On the other hand, Macedonian remote workers' beliefs are contrasted. The regression model for this part of the dataset is provided in Table 8.

Table 7: Regression model based on the data from India

Variables	B	SE B	Beta	t-value	Sig.	VIF
Individual factors	0.394	0.058	0.365	6.759	<0.001	1.581
Technological factors	0.030	0.065	0.027	0.466	0.642	2.025
Organizational factors	0.404	0.062	0.374	6.497	<0.001	1.728
Environmental factors	0.222	0.060	0.206	3.696	<0.001	1.738
Model Summary	R-square				0.765	
	Adjusted R-square				0.760	
	Std. error of the estimate				0.35736	
ANOVA Regression	F = 169.075, Sig = < 0.001					

Table 8: Regression model based on the data from North Macedonia

Variables	B	SE B	Beta	t-value	Sig.	VIF
Individual factors	0.266	0.063	0.258	4.240	<0.001	1.239
Technological factors	0.149	0.057	0.157	2.620	0.009	1.189
Organizational factors	0.418	0.059	0.411	7.120	<0.001	1.015
Environmental factors	0.132	0.055	0.130	2.420	0.016	1.753
Model Summary	R-square				0.665	
	Adjusted R-square				0.658	
	Std. error of the estimate				0.42575	
ANOVA Regression	F = 100.675, Sig = < 0.001					

Evidently, the model was significant, $F(4, 203) = 100.68$, $p < .001$, explaining 66.5 % of the variance ($\text{Adj. } R^2 = .658$). Technological factors ($\beta = .157$, $p = .009$), organizational factors ($\beta = .411$, $p < .001$), individual factors ($\beta = .258$, $p < .001$), and environmental factors ($\beta = .130$, $p = .016$) are all positively related to the perceived performance. Multicollinearity was low ($\text{VIFs} < 2$), and residuals showed no autocorrelation ($\text{Durbin-Watson} = 2.05$). Hence, H1b-H4b are supported, meaning that all aspects are mostly significant with varying degrees to Macedonian remote workers in the IT sector. Considering the contextual background, which is different from India, economically, technologically, politically, and societally, we can deduce that this type of workers still relies on a variety of factors when thinking of distributed work and flexible work arrangements' influence on their performance.

Both regressions fit their national subsamples very well, but the Indian model is notably stronger based on the percentage of explained variance. Organizational conditions are the single most powerful driver in both countries ($\beta \approx .41$), confirming that leadership, culture, and HR practices are pivotal for remote work success regardless of context. Individual factors rank second everywhere, but their role in the relation is stronger in India ($\beta = .365$) than in North Macedonia ($\beta = .258$), suggesting that personal attitudes and competencies matter more where large-scale remote work has matured. Environmental factors play a modest yet significant role in both settings ($\beta \approx .13-.21$), reflecting that macro-level (and familial) support, such as regulation, infrastructure, and societal norms, adds incremental but not dominant value. The sharpest contrast lies in technology, though. In North Macedonia, the technological construct is a small yet significant predictor in the relationship, indicating that access to robust digital tools and IT support still differentiates performance. In India, by contrast, the technological coefficient is nearly zero and statistically nonsignificant. A plausible interpretation we posit is that when high-quality technology is broadly available, as is typical for mature IT-services hubs, the marginal return of additional tech diminishes, leaving organizational and human enablers to carry the load. In less technologically saturated environments, on the other hand, closing the digital gap still pays off.

5 DISCUSSION AND IMPLICATIONS

The research sought to investigate the relations of technological, organizational, environmental, and individual factors with employees' perceptions of remote work's contribution to their performance in the IT sector in North Macedonia and India. Based on the research findings, the proposed hypotheses H2, H3, and H4 have been supported while H1 was not supported. More precisely, when the two countries are analyzed separately, H1a is not supported, yet H2a, H3a, and H4a are supported (findings from the Indian context), echoing the situation with the total sample, when seen holistically. All hypotheses related to North Macedonia (H1b-H4b) were supported. Subsequently, the contextual background and the implications of the study are provided as follows.

Moreover, while previous studies have explored the influence of technological, organizational, and environmental factors on work outcomes (Ng et al., 2022), this study has made several theoretical and empirical contributions to the emerging literature on remote work performance, as outlined in the next subsection. This research endeavor is one of the first ones that employs the TOE framework in remote work settings as a cross-country comparison between two countries. Additionally, it provides new value by expanding the TOE framework with individual factors and a direct assessment of the relationship between the surrounding factors and the perceived effect of remote work on employees' performance in IT companies. The overall results (for the entire model and India) point out that within the TOE-I factors, the strongest positive association is attributed to organizational, environmental, and individual factors, while the technological ones were not significantly affiliated with the performance. We believe that this is because technology does not play a drastically significant role in remote workers' performance in the IT sector, considering they heavily rely on technology during in-office work, too. Nevertheless, all these factors explain 83.6% of the variance in the model. However, this set of factors still plays a major role in North Macedonia, which we attribute to the long road the country has towards higher digitalization and overall technological saturation.

Comparatively, contextual distinctions between the two analyzed countries exist that might explain the similarities and differences. As previously showcased in Table 2, the Indian part of the sample ranked the factors generally higher as predictors of their perceptions of performance, yet without major differences, as the Macedonian average ranged from 3.78 to 4.03, whereas the Indian one was between 4.01 and 4.15.

Moreover, Indian companies were able to shift quickly to remote or hybrid modes because national labor statutes leave the “place of work” largely to contractual agreement; during the pandemic, this gap was filled by firm-level policy improvisation (Mukherjee & Narang, 2023). North Macedonia, by contrast, amended its Labor Law in 2020 so that any home-based or telework arrangement must be specified in the employment contract and reported to labor authorities, thereby formalizing employer obligations for health and safety outside the office (Apostolova Nikolovska & Dimitrovska, 2021). Hence, these different regulatory trajectories may help explain why technological factors do not play a major role in shaping employees’ perceptions of remote work and how it affects performance in either sample. IT professionals in both countries have already normalized work-anywhere arrangements, so marginal changes in infrastructure have added little to the collective situation once minimum connectivity is in place.

Culturally speaking, evidence shows India scores lower on uncertainty avoidance than most European societies, whereas the Western-Balkan cluster (including North Macedonia) is among the highest (Kumar et al., 2023; Tomovska Misoska et al., 2024). Indian IT teams, therefore, may tolerate ad-hoc scheduling improvisation, while Macedonian teams seek explicit rules and timetables. Both cultures are high in power distance (Kumar et al., 2023; Tomovska Misoska et al., 2024), so employees may tend to depend strongly on managerial direction. Hence, we believe this may shed light on why organizational factors emerged as the strongest driver of the employees’ beliefs, as supportive leadership and clear goal setting offset hierarchical distance in India (Venumuddala & Kamath, 2023), while policy clarity reduces uncertainty in North Macedonia (Apostolova Nikolovska & Dimitrovska, 2021).

Regarding the economic complexity and the motivation for choosing distributed work, it has been found that in India, the economic value of remote work is tied to avoiding costly mega-city commutes and enabling relocation to lower-cost regions (Mukherjee & Narang, 2023). In North Macedonia, where domestic IT wages trail Western European rates, remote work is attractive because it opens access to better-paid international contracts (Đukanović et al., 2022). Considering this, we also found that environmental factors, especially the quality of the home workspace, significantly relate to the perceptions of remote work’s role in enhancing performance, where savings on travel and/or housing in India and cross-border income gains in North Macedonia both depend on having a functional home office.

5.1 Contribution to literature

This study contributes to the literature in the following ways. First, by modifying the classic TOE framework (Tornatzky & Fleischer, 1990) to examine employee performance in a remote work setting, it goes beyond its initial scope of explaining organizational technology adoption. While previous research has applied TOE to firm-level adoption results (Abed, 2020; Mahakittikun et al., 2021), this study shows its applicability at the individual level, providing a new theoretical lens to examine how remote work systems shape perceptions of performance levels.

Second, the study strengthens recent recommendations for integrating personal dimensions in work performance research by integrating individual factors like flexibility, mental health, and job fulfillment into the TOE-I framework (Grant et al., 2013). This fills a significant gap in the model’s literature, which has often ignored behavioral and psychological factors. Third, by identifying organizational and environmental factors as stronger indicators of employee perceptions shaping how they view remote work and performance than technological ones, the study adds to the growing body of research on remote work performance. This suggests a change in performance factors as technology becomes more pervasive, unlike past research that focused on digital technologies as the main facilitators of remote work (Duan et al., 2024; Garro-Abarca et al., 2021).

Fourth, this study provides a comparative cross-country perspective between India and North Macedonia. While much of the remote work literature is based on data from Western economies, this study provides evidence from two culturally and economically distinct IT sectors, responding to the lack of geographic diversity in existing studies (Barabaschi et al., 2022; Đukanović et al., 2022). Despite contextual differences, the consistency of findings supports the broader generalizability of the TOE-I model.

Finally, the study challenges assumptions that technology is always a significant driver of performance in digital work settings. For IT professionals, technology is more of a baseline requirement than a differentiating performance factor (Narayana-murthy and Tortorella 2021). This has implications indicating that future frameworks should shift attention toward organizational and human-centric variables in digital work design.

5.2 Practical implications

The findings offer practical guidance for IT organizations, managers, and policymakers aiming to optimize remote work arrangements. These implications are particularly relevant given the varying institutional, economic, and cultural landscapes of India and North Macedonia. While India's IT sector is characterized by a younger workforce and rapid digital growth, North Macedonia's IT industry is smaller and more evolved in terms of employee experience within the European framework of digital transformation. Despite these differences, the findings reveal similar patterns in both nations, emphasizing the universal importance of organizational support, individual readiness, and environmental conditions in shaping perceptions of remote work's role in performance.

Among the TOE-I factors, organizational aspects had the strongest positive association. This underscores the importance of leadership and communication in remote and workplace culture. The results indicate that clear communication, management support, and well-structured remote work policies should be prioritized by organizations for better employee engagement and productivity. This finding

echoes the work of Garro-Abarca et al. (2021), who found that effective communication and strong managerial support enhance team performance in virtual settings. Furthermore, organizations that support training and development programs and structured performance evaluations are better positioned to sustain productivity and job satisfaction in remote environments (Ng et al., 2022; Barabaschi et al., 2022).

The study reveals that environmental factors play a major role, too. This supports previous research indicating that an employee's home setting, workspace design, and family support influence productivity (Tleuken et al., 2022). Organizations can help reduce distractions by promoting ergonomic work environments and providing financial assistance for home office arrangements. Promoting work-life balance is essential to avoid burnout and enhance long-term performance outcomes (Đukanović et al., 2022; Eftimov & Kitanovikj, 2024).

The inclusion of individual factors such as personal characteristics, skills, job fulfillment, and mental well-being in the TOE-I framework proved to be a valuable addition in this study. This is in line with research highlighting that autonomy, motivation, and job crafting enhance employee productivity in remote settings (Grant et al., 2013). Given these findings, organizations should prioritize mental health support, provide professional development opportunities, and encourage flexible work arrangements to maximize individual potential.

Finally, while technological factors were not statistically significant in the model when the two countries were considered together as one, and in the case of India, too. This does not imply that technology is unimportant. Instead, it illustrates how digital infrastructure is a constant in the "work equation" for IT professionals. Therefore, organizations should focus not just on providing tools but on ensuring their seamless integration and minimizing digital fatigue through streamlined platforms and cybersecurity support (Narayanamurthy & Tortorella, 2021; Duan et al., 2024).

The comparative nature of this study offers insights into the different remote work experiences between India and North Macedonia. The demographic data suggest that the IT workforce in India is younger, with a higher proportion of employees hav-

ing 0-5 years of experience, whereas North Macedonia has a more experienced IT workforce. This difference may change perceptions of remote work, as younger professionals might be more adaptable to digital work environments, while experienced employees may require additional support in transitioning to remote settings (Apostolova Nikolovska & Dimitrovska, 2021). Despite these differences, both countries exhibit similar trends in the significance of organizational, environmental, and individual factors, reinforcing the universality of their roles in how remote work can influence performance.

Namely, for Indian firms, investments should concentrate on organizational culture and employee development, while Macedonian organizations, however, can still gain measurable benefits from upgrading collaboration platforms and IT support while simultaneously strengthening organizational and individual capabilities. The findings also caution that the salience of the “T” pillar in the TOE-I framework is context-dependent, as it can behave like a performance lever where diffusion remains uneven. Additionally, organizations should enhance leadership training, establish clear communication channels, and develop structured policies to support remote workers. They may even consider offering financial assistance for home office setups and encouraging employees to create distraction-free work environments. With a growing focus on mental health and employee well-being, companies should integrate wellness programs, mental health support, and professional development opportunities to enhance job satisfaction and performance. Eventually, while technology is a necessary enabler, organizations should focus on improving the usability and integration of remote work tools rather than simply providing access to them.

5.3 Limitations and future research

Although this study provides valuable insights, it does not come free of some limitations, which at the same time represent potential avenues for future research. First, the study focuses on IT professionals, which may limit its generalizability to other industries. Second, the study relies on self-reported data when it comes to employees’ perceptions of how remote work shapes performance and the fa-

cilitating factors. So, even though post-hoc statistical remedies are applied, future research could measure performance using more objective indicators or triangulated with supervisors’ assessments. Third, while the study identifies key factors relating to performance, qualitative research methods such as interviews could provide additional insights into employee experiences. In this sense, future research can implement a mixed-methods approach to analyze this research problem. Lastly, longitudinal studies may help assess how these factors evolve as remote work practices continue to develop. To further enhance, future research could incorporate macro-level institutional indicators (e.g., cultural values, labor laws, digital policy maturity) to deepen comparative insights.

6 CONCLUSION

With this research endeavor, we set out to investigate how technological, organizational, environmental, and individual factors relate to IT employees’ perception of how remote work contributes to their performance. Moreover, this study extends the TOE framework by incorporating individual factors and provides empirical evidence on the determinants of remote work beliefs on performance in the IT sector. Using a quantitative research approach, data were collected from 421 remote IT professionals in India and North Macedonia through structured surveys. The multiple regression analysis revealed that organizational, environmental, and individual factors are positively and significantly associated with employees’ perceptions of remote work’s contribution to their performance, while technological factors have a more limited direct relation in the case of India, while in the Macedonian context, all factors contributed to remote work’s perceived effect on performance with varying degrees of significance. These insights offer guidance for organizations seeking to optimize remote work strategies, ensuring that employees remain engaged, productive, and satisfied in an evolving digital work environment. The comparative analysis between India and North Macedonia highlights notable differences in workforce demographics, with India exhibiting a younger, less experienced IT workforce, whereas North Macedonia features more seasoned professionals.

Overall, this research contributes to a deeper understanding of the factors relating to remote work perceptions and performance and highlights practical steps organizations can take to enhance employee outcomes. As remote work continues to shape the future of the IT sector, we believe companies should adopt proactive strategies that address organizational culture, employee well-being, and environmental support to maximize the benefits of this evolving work model. Moreover, the

study contributes to theory by applying the TOE-I framework to include individual factors and by applying it to employee performance as an area where this model is underutilized. It also enriches empirical understanding by demonstrating that organizational and environmental dimensions play a stronger role than technology in shaping remote work perceptions, particularly in the IT sector of more developed countries as opposed to less developed ones.

EXTENDED SUMMARY/IZVLEČEK

Ta študija preučuje razmerja med tehnološkimi, organizacijskimi, okoljskimi in individualnimi dejavniki ter zaznavami IT-zaposlenih o tem, kako delo na daljavo prispeva k njihovi uspešnosti, pri čemer uporablja razširjen okvir tehnologija–organizacija–okolje (Technology-Organization-Environment; TOE) za primerjalno analizo med Indijo in Severno Makedonijo. Uporabljen je bil kvantitativni raziskovalni načrt z anketnimi podatki 421 IT-strokovnjakov, ki delajo na daljavo – 213 iz Indije in 208 iz Severne Makedonije. Ti podatki so bili podlaga za večkratno linearno regresijsko analizo. Rezultati kažejo, da imajo organizacijski, okoljski in individualni dejavniki pomembno vlogo v razmerjih med temi dejavniki in zaznanim prispevkom dela na daljavo k uspešnosti, medtem ko tehnološki dejavniki niso izkazali statistično pomembne povezave. Primerjava med državama je razkrila, da kljub demografskim in izkustvenim razlikam obe državi kažeta podobne trende v določanju dejavnikov uspešnosti dela na daljavo. Študija prispeva k rastočemu obsegu raziskav o delu na daljavo s tem, da okvir TOE razširi z vključitvijo individualnih dejavnikov. Ponuja praktične vpoglede za organizacije, ki želijo optimizirati strategije dela na daljavo s poudarkom na podpori managementa, izboljšavah domačega delovnega okolja ter skrbi za dobrobit zaposlenih. Ugotovitve so posebej relevantne za IT-podjetja, ki želijo povečati produktivnost in prilagodljivost dela na daljavo v različnih regionalnih kontekstih.

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Appendix

Survey items used in the research study

Factors	Items	Source
Technological factors	I believe remote work enables me to achieve technical advantage.	Adapted from Aligarh et al. (2021)
	I believe technology makes me more effective during remote work.	
	Digital orientation helps me achieve better results during remote work.	
Organizational factors	My organization has a work culture that enables me to achieve better results during remote work.	Adapted from Ng et al. (2022)
	My communication with my manager(s) is at a level that enables me to achieve better results during remote work.	
	My organization provides employee training opportunities that enable me to achieve better results during remote work.	
	My organization gives me an adequate amount of responsibility that enables me to achieve better results during remote work.	
	My manager(s) assign(s) me diverse work assignments that enable me to achieve better results during remote work.	
Environmental factors	The influence of the family members in my household affects my performance during remote work.	Adapted from Nguyen et al. (2022)
	The feedback from the environment helps me to achieve better results during remote work.	
	Working with multiple stakeholders helps me to achieve better results during remote work.	
	Trust from my surroundings affects my performance during remote work.	
	The feedback from clients helps me to achieve better results during remote work.	
Individual factors	Work fulfilment helps me to achieve better results during remote work.	Adapted from Grant et al. (2013)
	My individual skills and competencies help me to achieve better results during remote work.	
	Flexibility affects my performance during remote work.	
	My mental health improves when working remotely instead of regular work arrangements.	
Perceptions of remote work's contribution to employee performance	Remote work improves my working practices and processes.	Adapted from Ng et al. (2022)
	Remote work makes my work more objectively evaluated and recognized.	
	Remote work has been beneficial regarding financial rewards and benefits.	
	Remote work improves my plans and goals setting.	