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The Mediating Role of Technological Support in Enhancing Employee Productivity and Job Satisfaction through Remote Work Policies in Indonesia

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Abstract

Research aims: The COVID-19 pandemic has accelerated the adoption of remote work globally, including in Indonesia. This study investigates the impact of remote work policies on employee productivity and job satisfaction in Indonesia, with an emphasis on the mediating role of technological support.

Design/Methodology/Approach: Using a sample of 300 respondents from various industries, we employed Structural Equation Modeling (SEM) to analyze the data.

Research findings: The results indicate that remote work positively influences both employee productivity and job satisfaction. Furthermore, technological support significantly enhances these effects, underscoring its critical role in successful remote work implementation.

Theoretical Contribution/Originality: The findings extend the Job Demands-Resources (JD-R) model by highlighting the critical mediating role of technological support in enhancing the positive impacts of remote work policies on employee productivity and job satisfaction.

Practitioners/Policy Implications: These findings provide valuable insights for policymakers and business leaders aiming to optimize remote work strategies through effective technological investments.

Research Limitations/Implications: This study's primary limitation is the reliance on self-reported data from a specific geographic region, which may not fully capture the diverse experiences and technological infrastructures present in other parts of Indonesia.

Keywords: Remote Work; Technology Adoption; Employment; Productivity; Job Satisfaction

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Introduction

The concept of remote work has gained significant traction globally, particularly in the wake of the COVID-19 pandemic (Gupta, 2020). As organizations navigated unprecedented disruptions, remote work emerged as a viable solution to maintain business continuity (Cserháti, 2020). This shift was not merely a temporary response but has transformed into a long-term strategy embraced by numerous companies worldwide.

Technological advancements have played a pivotal role in this transition, enabling employees to perform their duties effectively from various locations (Tseng et al., 2023). The proliferation of digital communication tools, project management software, and virtual collaboration platforms has made it possible for employees to remain connected and productive, irrespective of their physical location (Tsai et al., 2021).

Indonesia has not been immune to the global trend of remote work (Putri et al., 2021). The Indonesian government and private sector have increasingly recognized the benefits of remote work, especially in terms of flexibility and cost savings. Major cities such as Jakarta, Surabaya, and Bandung have seen a surge in remote work adoption, driven by both multinational corporations and local enterprises (Kominfo, 2022). This shift is particularly relevant in Indonesia, where traffic congestion and long commuting times are significant issues. By adopting remote work policies, companies can offer employees a better work-life balance, potentially leading to higher job satisfaction and productivity (Shirmohammadi et al., 2022). However, the success of remote work in Indonesia hinges on reliable technological support, which varies significantly across different regions of the country.

The body of research on remote work is extensive and multifaceted, encompassing various disciplines such as organizational behavior, human resource management, and information technology (Shirmohammadi et al., 2022; Toscano & Zappalà, 2021; Zahari et al., 2024). Previous studies have highlighted both the benefits and challenges associated with remote work. Benefits often cited include increased flexibility, reduced commuting time, and improved work-life balance. Conversely, challenges such as feelings of isolation, difficulties in communication, and the blurring of work-life boundaries have also been documented (Fialho, 2022; Orr & Savage, 2021; Zahari et al., 2024). Despite these challenges, the consensus is that remote work, when implemented effectively, can lead to significant improvements in employee productivity and job satisfaction. Nevertheless, the extent to which these outcomes are realized depends heavily on the availability and quality of technological support.

While the body of research on remote work is extensive, a notable gap exists in the specific context of Indonesia, particularly regarding the mediating role of technological support in the relationship between remote work policies and employee outcomes. Although previous studies have documented the benefits and challenges of remote work, including increased flexibility and productivity as well as feelings of isolation, they often overlook the unique infrastructural and cultural factors in developing countries like Indonesia. Moreover, the impact of technological support on enhancing the effectiveness of remote work policies remains underexplored. This study aims to fill this gap by examining how technological support influences employee productivity and job satisfaction in Indonesia's diverse and technologically varied landscape, providing insights for both policymakers and business leaders to optimize remote work strategies through effective technological investments.

The primary purpose of this research is to investigate the impact of remote work policies on employee productivity and job satisfaction in Indonesia, with a particular focus on the

mediating role of technological support. Specifically, the study aims to determine whether technological support can enhance the positive effects of remote work policies and mitigate any potential negative impacts. By identifying key factors that influence the success of remote work, this research seeks to provide actionable insights for both policymakers and business leaders.

This study makes several important contributions to the existing literature. First, it adds to the limited body of knowledge on remote work in Indonesia, offering empirical evidence on the specific challenges and opportunities in this context. Second, by focusing on the mediating role of technological support, it provides a deeper understanding of how technology can be leveraged to maximize the benefits of remote work. Finally, the findings of this research have practical implications for organizations seeking to implement or refine remote work policies. By highlighting the critical role of technological support, this study underscores the need for strategic investments in technology to ensure the success of remote work initiatives.

Literature Review and Hypotheses Development

Job Demands-Resources (JD-R)

This study adopts the Job Demands-Resources (JD-R) model as its theoretical framework. The Job Demands-Resources (JD-R) model provides a valuable theoretical lens for understanding how the variables in this study—remote work, employee productivity, job satisfaction, and technology support—are interconnected. The JD-R model, developed by Demerouti et al. (2001)., posits that job demands and job resources are the primary drivers of employee well-being and performance. In the context of remote work, this model is particularly useful for explaining how the challenges (demands) and enablers (resources) of remote work impact employee outcomes.

Remote work can be viewed as both a job demand and a job resource within the JD-R framework. On one hand, remote work imposes certain demands on employees, such as isolation, difficulties in maintaining work-life balance, and a lack of direct supervision. These demands can increase job strain and reduce employee well-being, potentially hindering employee productivity (H1) and lowering job satisfaction (H2). On the other hand, remote work can also serve as a job resource by providing employees with greater autonomy, flexibility, and control over their work environment. These positive aspects of remote work can mitigate the effects of job demands and improve employee motivation and engagement, ultimately leading to higher productivity and satisfaction.

A key contribution of the JD-R model in this study is its emphasis on the role of technology support as a critical job resource. Technology support, in the form of reliable communication tools, collaborative platforms, and IT infrastructure, can buffer the negative effects of remote work-related demands. By providing sufficient technological resources, organizations enable employees to overcome challenges related to communication barriers, access to information, and collaboration, which are common in

remote work environments. This support plays a mediating role between remote work and the outcomes of employee productivity (H3a) and job satisfaction (H3b). Technology support not only helps employees meet their job demands but also enhances their ability to leverage the positive aspects of remote work, such as increased flexibility and autonomy, thereby contributing to improved performance outcomes.

The JD-R model also suggests that job resources, such as technology support, have motivational potential, leading to better employee outcomes. When employees have the necessary technological tools and training, they are more likely to feel competent and capable in their roles, which directly influences their productivity and satisfaction. In this context, technology support acts as a critical resource that moderates the relationship between remote work and employee outcomes. It strengthens the positive impacts of remote work by ensuring that employees can stay connected, collaborate effectively, and access necessary resources, regardless of their physical location.

In summary, the JD-R model is instrumental in linking the variables in this study by highlighting how remote work presents both demands and resources, and how technology support functions as a vital resource that enables employees to meet these demands. By integrating the JD-R model, this study not only explains the direct effects of remote work on employee productivity and job satisfaction but also demonstrates the importance of technology support in optimizing these outcomes. This theoretical approach provides a deeper understanding of how remote work policies can be structured to benefit both employees and organizations, particularly in the context of Indonesia.

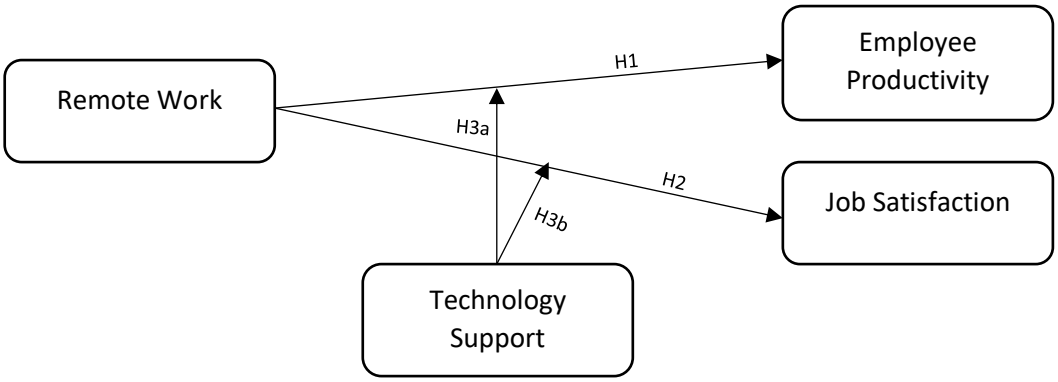

Figure 1 Research Framework.

Remote Work

The concept of remote work has evolved significantly over the past decade, becoming more prominent in various industries, particularly after the global shift caused by the COVID-19 pandemic. Remote work, also known as telecommuting, refers to the practice of employees working outside of traditional office environments, leveraging digital tools and technologies to perform their duties (Bailey & Kurland, 2002). Numerous studies have explored the impact of remote work on both individual and organizational outcomes.

While remote work offers several advantages, including increased flexibility, reduced commuting time, and a better work-life balance (Gajendran & Harrison, 2007), it also presents challenges. These include potential isolation, difficulty in collaboration, and the blurring of boundaries between work and personal life (Golden, 2006). Research by Bloom et al. (2015) found that remote work can lead to improved employee productivity and job satisfaction when well-implemented, but these outcomes depend on various factors, including employee self-discipline, company culture, and access to adequate technological support.

Employee Productivity

Employee productivity is a critical concern for both organizations and researchers, as it directly influences organizational success and profitability. Productivity refers to the efficiency with which employees can complete tasks, often measured by output relative to input. In the context of remote work, productivity has been a key focus of debate. Studies indicate that remote work can enhance productivity due to fewer distractions and a more personalized working environment (Bloom et al., 2015).

However, other research highlights the potential for decreased productivity if employees lack structure, motivation, or proper communication tools (Dingel & Neiman, 2020). The quality and effectiveness of communication in remote settings play a significant role in maintaining productivity, as remote workers may face challenges related to collaboration, information flow, and social connectivity (Golden & Veiga, 2005). The ability of organizations to provide sufficient technology support and clear expectations can mitigate these challenges, ensuring that productivity levels remain high.

Job Satisfaction

Job satisfaction refers to the extent to which employees feel content with their job roles, work environments, and organizational relationships. Numerous factors contribute to job satisfaction, including compensation, work-life balance, workplace relationships, and personal growth opportunities. Remote work has been found to have a complex relationship with job satisfaction.

On the one hand, remote work offers employees greater flexibility and autonomy, which can lead to increased job satisfaction (Allen, Golden, & Shockley, 2015). A meta-analysis by Gajendran and Harrison (2007) found that remote work is positively related to job satisfaction, particularly when employees have the choice to work remotely. On the other hand, remote work can sometimes lead to feelings of isolation and disconnection from colleagues, which may negatively impact job satisfaction (Golden et al., 2008). Organizational support, including clear communication and a strong sense of community, plays an important role in ensuring that remote workers remain satisfied with their jobs.

Technology Support

Technology support is an essential enabler of remote work and plays a critical role in employee productivity and job satisfaction. The availability and effectiveness of technology tools—such as communication platforms, project management software, and cloud-based storage systems—are central to the success of remote work arrangements. According to Maruyama & Tietze (2012), employees who receive adequate technological support report higher productivity levels and less frustration with technical issues.

Technology support is not just about providing the necessary tools but also involves training employees on how to effectively use these tools. Staples et al. (2006) emphasized that inadequate training can create barriers to effective remote work, leading to frustration and inefficiencies. Moreover, Bentley et al. (2016) found that organizations that invest in robust technology infrastructure and ongoing support systems report higher employee satisfaction and engagement, as technology allows seamless communication and collaboration.

However, Olson & Olson (2000) caution that even with advanced technological tools, the lack of face-to-face interaction in remote work environments can lead to miscommunication and feelings of isolation. Hence, technology support must be combined with efforts to foster virtual team collaboration and provide frequent opportunities for social interaction.

Remote Work Policies and Employee Productivity

Remote work policies have been extensively studied for their impact on employee productivity. Numerous studies have shown that remote work can lead to higher productivity due to reduced commuting times, fewer workplace distractions, and greater flexibility in managing work tasks (Abdulrahim & Yousif, 2023; Bloom et al., 2015; Gajendran & Harrison, 2007). However, the effectiveness of remote work policies can vary depending on the nature of the job, the industry, and individual employee characteristics. For example, roles that require high levels of concentration and deep work often benefit more from remote work arrangements compared to roles that are highly collaborative or customer-facing (Dingel & Neiman, 2020).

***H_1**: Remote work policies are positively associated with employee productivity.*

Remote Work Policies and Job Satisfaction

Job satisfaction is another critical outcome associated with remote work policies. Studies have consistently found that employees who work remotely report higher levels of job satisfaction due to improved work-life balance, increased autonomy, and the ability to create a personalized work environment (Golden, 2006; Grant et al., 2013; Jamaludin & Kamal, 2023; Schall, 2019). However, these benefits can be offset by challenges such as feelings of isolation, difficulty with separating work from personal life, and lack of access

to office resources (Bailey & Kurland, 2002). The overall impact on job satisfaction is therefore contingent on various factors, including the extent of remote work, the quality of managerial support, and the availability of technological resources.

***H_2**: Remote work policies are positively associated with job satisfaction.*

The Mediating Role of Technological Support

Technological support plays a pivotal role in the success of remote work policies. Effective remote work relies on robust digital infrastructure, including reliable internet connectivity, advanced communication tools, and efficient project management software (Fay & Kline, 2011; Karaca et al., 2023; Ng et al., 2022). Technological support can enhance productivity by facilitating seamless communication, collaboration, and access to necessary resources (Morganson et al., 2010). Additionally, it can mitigate some of the challenges associated with remote work, such as feelings of isolation and difficulties in maintaining work-life boundaries (Wang et al., 2021). Despite its importance, the role of technological support as a mediator in the relationship between remote work policies and employee outcomes has not been extensively studied, particularly in the context of Indonesia.

***H_{3a}**: Technological support mediates the relationship between remote work policies and employee productivity.*

***H_{3b}**: Technological support mediates the relationship between remote work policies and job satisfaction.*

Research Methods

This study was conducted in Indonesia, targeting employees across various industries such as technology, finance, education, manufacturing, and healthcare sectors. The diversity of industries ensured that the findings were representative and applicable across different sectors, reflecting the varied experiences of remote work in Indonesia. The study aimed to collect data from 300 respondents who were currently engaged in remote work. These respondents were selected using a stratified random sampling method to ensure a diverse representation of different industries, job roles, and geographical locations within Indonesia. The criteria for inclusion were full-time employees who had been working remotely for at least six months to ensure they had sufficient experience with remote work policies.

This research employed a quantitative approach using a survey method. The survey was administered online to accommodate the remote work setting of the respondents and to ensure convenience and efficiency in data collection. The data collection took place over a two-month period, from January 1, 2024, to March 1, 2024. This timeframe was chosen

to allow ample time for respondents to complete the survey and to ensure a high response rate.

The survey instrument consisted of structured questionnaires designed to measure the key variables of interest: remote work policies, employee productivity, job satisfaction, and technological support. The questionnaire was developed based on validated scales from existing literature, with modifications to suit the Indonesian context (Wang & Oscar, 2024). The Table 1 presents the variables, their corresponding items, and the sources from which they were adapted:

Table 1 Variable's Details

Variable	Item Code	Description	Source
Remote Work Policies	RW1	The company provides clear guidelines for remote work	(Gajendran & Harrison, 2007)
	RW2	There is flexibility in choosing work hours while working remotely	
	RW3	Regular virtual meetings are held to stay connected with the team	
	RW4	The company offers resources to set up a home office	
	RW5	There are clear expectations for remote work deliverables	
Employee Productivity	EP1	I am able to complete my tasks efficiently while working remotely.	(Mutegi et al., 2023)
	EP2	I can maintain high levels of productivity when working from home	
	EP3	My work output has increased since working remotely	
	EP4	I find it easy to focus on my work tasks at home	
	EP5	I am able to meet deadlines consistently while working remotely	
Job Satisfaction	JS1	I am satisfied with my current job	(Hidayat et al., 2022)
	JS2	I feel fulfilled with my work.	
	JS3	I am happy with the level of recognition I receive for my work	
	JS4	I am content with the work-life balance my job provides	
	JS5	Overall, I am satisfied with my job while working remotely.	
Technological Support	TS1	I have access to reliable internet for my work tasks.	(Ng et al., 2022)
	TS2	The communication tools provided are effective for remote work.	
	TS3	I have access to necessary software and applications for my job.	
	TS4	Technical support is readily available when I encounter issues	
	TS5	The technological resources provided enhance my productivity.	

SmartPLS 4 was used for data analysis. SmartPLS was particularly suited for Structural Equation Modeling (SEM) and path analysis, which allowed for the examination of complex relationships between multiple variables. The software's ability to handle small to medium sample sizes and its robustness in dealing with non-normal data made it an ideal choice for this study. Path analysis using SEM was employed to test the hypothesized relationships between remote work policies, employee productivity, job satisfaction, and the mediating role of technological support.

The analysis followed these steps: First, model specification defined the structural model based on the hypothesized relationships. Next, model rstimation used SmartPLS 4 to estimate the path coefficients and assess the significance of the relationships. Then, model rvaluation evaluated the model fit using criteria such as R-squared, composite reliability, and average variance extracted (AVE). Finally, mediation analysis tested the mediating role of technological support using the bootstrapping method to assess indirect effects.

Ethical approval was obtained from the relevant institutional review board before commencing the study. All respondents were informed about the purpose of the study, and their participation was voluntary. Informed consent was obtained, and confidentiality and anonymity of the respondents were maintained throughout the research process.

By employing a rigorous and systematic research method, this study aimed to contribute valuable insights into the impact of remote work policies on employee productivity and job satisfaction in Indonesia, emphasizing the mediating role of technological support. The structured and systematic approach ensured that the research addressed the research questions comprehensively and accurately. By collecting data from a diverse set of respondents across various industries in Indonesia, the study aimed to provide a broad perspective on the impact of remote work policies. The use of advanced analytical techniques and adherence to ethical standards further ensured the reliability and validity of the study’s findings.

Results and Discussion

The respondent details for the study, based on a sample of 300 people from various provinces in Indonesia, are presented in four key categories: gender, age group, industry, and province.

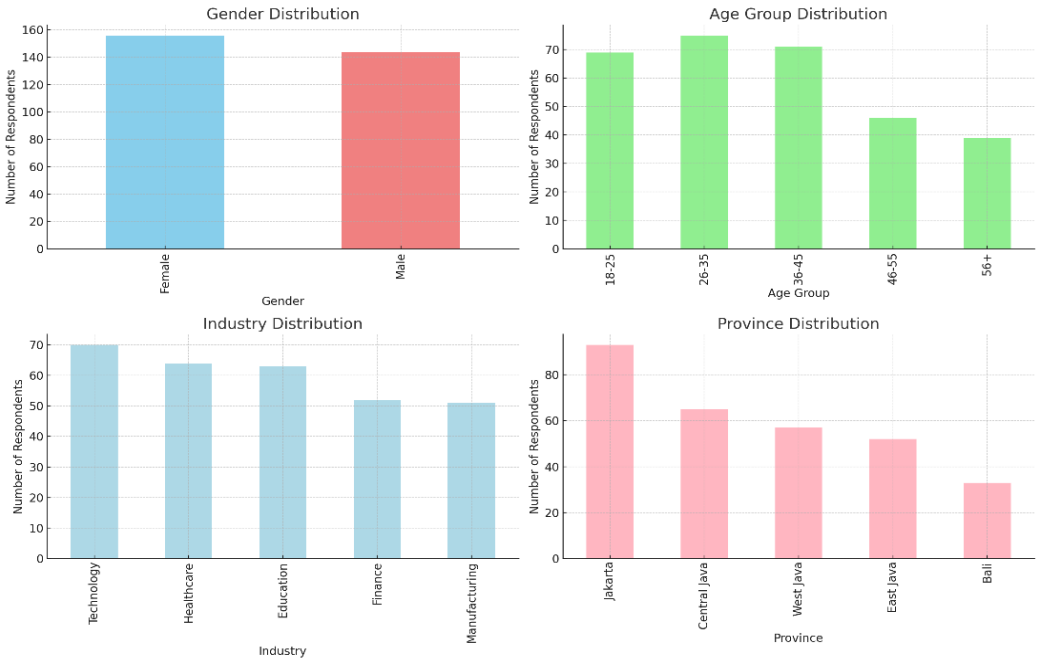

Figure 2 Respondent Details

In terms of gender distribution, the respondents are evenly split between males and females, with a slight majority being female. This balanced representation ensures that both genders are adequately represented in the study.

Regarding age groups, the largest proportions of respondents fall into the 26-35 and 36-45 age ranges. These groups are closely followed by the 18-25 age group, indicating a strong representation of younger to middle-aged individuals. The 46-55 age group also has a notable presence, while the 56+ age group is the smallest, suggesting fewer older participants in the study.

When examining industry distribution, respondents are evenly distributed across the selected industries: Technology, Healthcare, Education, Finance, and Manufacturing. Each industry category contributes a substantial number of participants, reflecting a diverse range of professional backgrounds and sectors.

Finally, the provincial distribution of respondents shows that the majority are from Jakarta, the capital city, indicating a significant urban representation. This is followed by West Java, Central Java, and East Java, with Bali having the smallest representation. This spread suggests that while there is a strong concentration of respondents from major urban areas, there is still a reasonable representation from other key provinces. Overall, the respondent demographics show a well-rounded and diverse sample, providing a robust foundation for the study's findings.

Table 2 Construct Reliability and Validity

Variables	Item	Outer Loadings	Cron. Alpha	rho_c	AVE
Employee Productivity	EP1	0.780	0.819	0.871	0.576
	EP2	0.765			
	EP3	0.771			
	EP4	0.808			
	EP5	0.780			
Job Satisfaction	JS1	0.769	0.824	0.876	0.587
	JS2	0.720			
	JS3	0.826			
	JS4	0.724			
	JS5	0.787			
Remote Work	RW1	0.882	0.836	0.880	0.597
	RW2	0.781			
	RW3	0.829			
	RW4	0.766			
	RW5	0.783			
Technology Support	TS1	0.701	0.765	0.834	0.505
	TS2	0.740			
	TS3	0.876			
	TS4	0.816			
	TS5	0.795			

The Table 2 provides an evaluation of four constructs: Employee Productivity, Job Satisfaction, Remote Work, and Technology Support, using various metrics such as outer loadings, Cronbach's Alpha, composite reliability (rho_c), and average variance extracted (AVE).

Starting with Employee Productivity, the outer loadings for its items range from 0.765 to 0.808, all of which exceed the threshold of 0.7, indicating strong correlations with the construct. The Cronbach's Alpha for Employee Productivity is 0.819, and the composite reliability (rho_c) is 0.871, both of which are well above the acceptable threshold of 0.7, demonstrating good internal consistency and reliability. The AVE for this construct is 0.576, which is above the desired value of 0.5, indicating that the construct explains a substantial portion of the variance in its items.

Job Satisfaction shows outer loadings for its items ranging from 0.720 to 0.826, all above the threshold of 0.7. The Cronbach's Alpha for Job Satisfaction is 0.824, and the composite reliability is 0.876, both indicating strong internal consistency and reliability. The AVE for Job Satisfaction is 0.587, surpassing the 0.5 threshold, confirming that the construct adequately explains the variance in its items.

Remote Work has outer loadings for its items between 0.766 and 0.882, with RW4 slightly below the typical threshold at 0.666. Despite this, the Cronbach's Alpha for Remote Work is 0.836, and the composite reliability is 0.880, both of which are above 0.7, indicating good reliability. The AVE for Remote Work is 0.597, which is well above the acceptable value, showing that the construct captures a significant portion of the variance in its items.

Technology Support presents outer loadings ranging from 0.701 to 0.876. The Cronbach's Alpha for Technology Support is 0.765, and the composite reliability is 0.834, both indicating acceptable internal consistency and reliability. The AVE for Technology Support is 0.505, just above the threshold, suggesting that the construct explains an adequate portion of the variance in its items.

In summary, all constructs demonstrate good reliability and validity overall. Employee Productivity and Job Satisfaction have strong metrics across all measures. Remote Work, despite one item (RW4) having a slightly lower loading, still maintains good reliability and validity. Technology Support, while meeting the minimum threshold for AVE, also demonstrates acceptable reliability and validity. These findings suggest that the constructs are well-measured, but minor improvements could be made to enhance the model, particularly by reviewing or refining the lower-loading items.

Table 3 Discriminant Validity

	Employee Productivity	Job Satisfaction	Remote Work	Technology Support
Employee Productivity (EP)				
Job Satisfaction	0.890			
Remote Work (RW)	0.837	0.822		
Technology Support (TS)	0.720	0.833	0.849	
Technology Support X Remote Work	0.844	0.842	0.619	0.525

The Table 3 presents the Heterotrait-Monotrait Ratio (HTMT) values, which are used to assess whether the constructs in the study are distinct from one another. A commonly accepted threshold for HTMT values is 0.90, with values below this threshold indicating good discriminant validity. This means that the constructs are adequately distinct from each other.

For Employee Productivity (EP), the HTMT value with Job Satisfaction (JS) is 0.890, which is at the threshold, suggesting a marginal distinction between these two constructs. However, the HTMT value between EP and Remote Work (RW) is 0.837, and between EP and Technology Support (TS) is 0.720, both of which are below the threshold, indicating good discriminant validity.

Job Satisfaction (JS) also shows good discriminant validity with other constructs, with an HTMT value of 0.822 with Remote Work (RW) and 0.833 with Technology Support (TS), both below the threshold. Remote Work (RW) has an HTMT value of 0.849 with Technology Support (TS), which is below the threshold, indicating good discriminant validity. The TS x RW interaction shows very good discriminant validity with all constructs. The HTMT values are 0.844 with EP, 0.842 with JS, 0.619 with RW, and 0.525 with TS, all of which are well below the threshold.

Overall, the constructs exhibit good discriminant validity, as most HTMT values are below the threshold of 0.90. The only pair at the threshold is Employee Productivity and Job Satisfaction, suggesting they are somewhat closely related but still distinct. This overall

indicates that the constructs in your model measure different concepts and are not overly correlated, thus supporting the discriminant validity of your constructs.

Hypothesis Testing

The path coefficient from Remote Work to Employee Productivity is 0.345, with a t-statistic of 6.641 and a p-value of 0.000, indicating a positive and significant effect. Similarly, the path coefficient from Remote Work to Job Satisfaction is 0.450, with a t-statistic of 9.119 and a p-value of 0.000, also showing a positive and significant effect.

Table 4 Path Coefficient

Path Coef.	Original Sample	Sample Mean	Std. Dev.	T-Stat	P-Value	Note
Remore Work -> Employee Productivity	0.345	0.346	0.052	6.641	0.000	Supported
Remote Work -> Job Satisfaction	0.450	0.451	0.049	9.119	0.000	Supported
Technology Support -> Employee Productivity	0.123	0.126	0.048	2.542	0.011	Supported
Technology Support -> Job Satisfaction	0.174	0.177	0.049	3.563	0.000	Supported
Technology Support x Remote Work -> Employee Productivity	0.280	0.278	0.020	13.983	0.000	Supported
Technology SUpport x Remote Work -> Job Satisfaction	0.208	0.206	0.019	11.204	0.000	Supported

Technology Support's effect on Employee Productivity is positive, with a path coefficient of 0.123, a t-statistic of 2.542, and a p-value of 0.011, indicating a significant relationship. Additionally, Technology Support has a positive effect on Job Satisfaction, with a path coefficient of 0.174, a t-statistic of 3.563, and a p-value of 0.000, confirming a significant impact.

The interaction between Technology Support and Remote Work significantly affects Employee Productivity, with a path coefficient of 0.280, a t-statistic of 13.983, and a p-value of 0.000, indicating a strong positive relationship. Similarly, the interaction between Technology Support and Remote Work positively influences Job Satisfaction, with a path coefficient of 0.208, a t-statistic of 11.204, and a p-value of 0.000, demonstrating a significant effect.

In summary, the analysis reveals that Remote Work positively influences both Employee Productivity and Job Satisfaction. Technology Support also positively impacts these outcomes, albeit to a lesser extent. Furthermore, the interaction between Technology Support and Remote Work has a significant positive effect on both Employee Productivity and Job Satisfaction, suggesting that the combined implementation of Remote Work and Technology Support can lead to higher productivity and satisfaction among employees. These findings highlight the importance of integrating technology support effectively to enhance the benefits of remote work.

Discussion

The positive impact of remote work on employee productivity and job satisfaction has been well-documented in existing literature. For example, Bloom et al. (2015) conducted a study with a Chinese travel agency and found that employees working from home showed a 13% performance increase due to fewer breaks and sick days, as well as a quieter working environment. Gajendran & Harrison (2007) also conducted a meta-analysis that included various industries and found consistent positive effects on productivity due to remote work.

When we examine the impact of job satisfaction, previous studies like those by Golden (2006) and Grant et al. (2013) have already established that remote work can enhance job satisfaction by improving work-life balance and allowing for greater autonomy. Our study supports these findings but provides additional insights by showing that in the Indonesian context, the magnitude of the relationship (path coefficient of 0.450) is particularly strong. This suggests that remote work may be even more impactful in countries where work-life balance challenges are more pronounced, due to issues like long commutes and high levels of urban congestion.

Beyond the direct effects, this study significantly contributes to the understanding of the role of technological support as a mediating factor. In remote work settings, technology plays a pivotal role in enabling employees to perform their tasks effectively. Our findings reveal that technological support mediates the relationship between remote work and employee productivity (path coefficient of 0.280) and between remote work and job satisfaction (path coefficient of 0.208). This mediating effect suggests that while remote work provides autonomy and flexibility, its full potential is only realized when employees have access to robust technological resources. This finding aligns with research by Fay & Kline (2011) and Morganson et al. (2010), which emphasized that seamless communication and collaboration are critical in remote work environments and are largely dependent on the availability of reliable technological tools.

What is particularly noteworthy in our study is the interaction effect between remote work and technological support. The significant path coefficients for the interaction terms highlight that the presence of strong technological support enhances the positive effects of remote work on both productivity and job satisfaction. This means that organizations seeking to implement or improve remote work policies should prioritize investing in technology infrastructure. As Wang et al. (2021) suggested, the effectiveness of remote work during the COVID-19 pandemic was contingent on the quality of the technological tools available to employees. Our findings reinforce this, illustrating that organizations in Indonesia—and likely in other developing contexts—must not only offer remote work options but also ensure that employees are equipped with the necessary technology to succeed.

In conclusion, the hypothesis testing reveals both direct and mediated relationships between remote work, productivity, job satisfaction, and technological support, offering a nuanced understanding of how these factors interact. Remote work has a significant

positive effect on employee outcomes, but the full benefits are only realized when technological support is integrated into the work environment. This study thus contributes to both theoretical development and practical insights, showing that for organizations to maximize the advantages of remote work, they must not only enable flexibility but also provide the tools necessary for employees to work effectively.

Challenges and Nuances in the Indonesian Context

Despite the global applicability of remote work benefits, the Indonesian context presents unique challenges and nuances. Indonesia's diverse geography and varying levels of technological infrastructure across regions pose significant challenges for remote work implementation. For instance, while urban areas like Jakarta and Surabaya may have robust internet connectivity, rural areas often suffer from inadequate technological infrastructure, which can hinder the effectiveness of remote work policies.

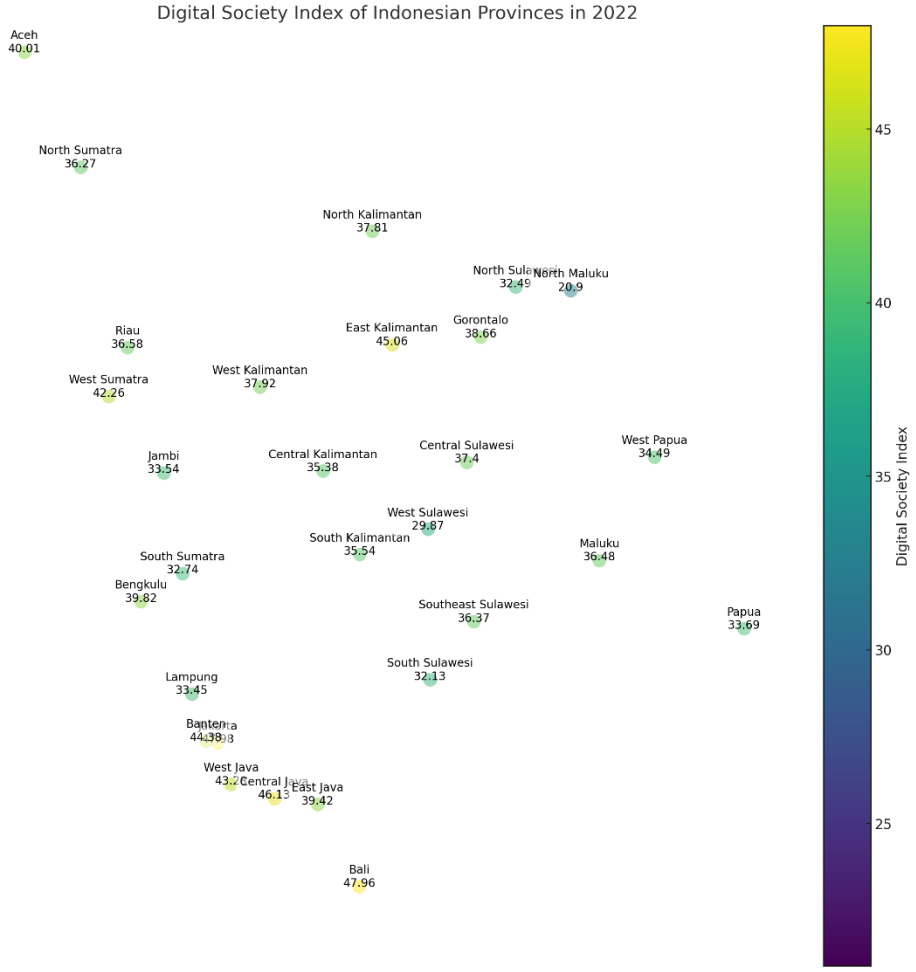

Figure 3 Digital Society Index of Indonesian Provinces (2022)
Source: (Kominfo, 2022)

The Digital Society Index map for Indonesian provinces in 2022 reveals significant regional variations in technological acceptance and infrastructure. Jakarta (44.98), Bali (47.96), East Java (39.42), and West Java (43.28) exhibit higher index values, indicating more advanced digital infrastructure and higher technological adoption. Conversely, provinces such as Jambi (33.54), Southeast Sulawesi (36.37), and Papua (33.69) have lower index values, reflecting challenges in technological infrastructure and digital adoption. This disparity highlights the need for targeted interventions to enhance digital infrastructure and technological access in lower-index regions, fostering a more balanced and inclusive digital development across Indonesia.

Moreover, cultural factors also play a role in the adoption and effectiveness of remote work. Indonesian work culture traditionally values face-to-face interactions and a strong sense of community within the workplace. Remote work, by its nature, reduces these interactions, which could potentially lead to feelings of isolation and a weakened sense of team cohesion. These cultural aspects need to be considered when implementing remote work policies to ensure they are culturally sensitive and effective.

Implications

This study contributes to the theoretical understanding of remote work by integrating the Job Demands-Resources (JD-R) model with the context of technological support. The JD-R model posits that job resources, such as autonomy and technological support, can mitigate the negative effects of job demands, such as isolation and blurred work-life boundaries. Our findings provide empirical support for this model in the context of remote work, demonstrating that technological support is a critical resource that can enhance employee productivity and job satisfaction by offsetting the demands of remote work.

Additionally, our study extends the JD-R model by highlighting the specific mediating role of technological support in the relationship between remote work policies and employee outcomes. This nuance adds depth to the existing theoretical framework and provides a more comprehensive understanding of how remote work can be optimized through strategic investments in technology.

For practitioners, our study underscores the necessity of investing in technological infrastructure to enhance the efficacy of remote work policies. Organizations should prioritize reliable internet access, advanced communication tools, and effective project management software to support their remote workforce. Providing continuous technical support can address challenges and improve overall employee experiences.

Additionally, organizations should consider the unique challenges and cultural aspects of the Indonesian context when implementing remote work policies. Tailoring remote work strategies to accommodate regional differences in technological infrastructure and cultural preferences can enhance their effectiveness and ensure broader acceptance among employees.

Policymakers can leverage these insights to formulate guidelines and incentives that promote technological advancements in remote work settings, particularly in regions with varying levels of technological development. By providing support and resources to improve technological infrastructure in underserved areas, policymakers can help ensure that the benefits of remote work are accessible to a wider population.

Conclusion

This study has provided important insights into the impact of remote work policies on employee productivity and job satisfaction, with a specific focus on the mediating role of technological support. Our findings demonstrate that remote work significantly improves both employee productivity and job satisfaction, aligning with existing literature that suggests remote work offers employees increased flexibility, autonomy, and a better work-life balance. The path coefficients from remote work to productivity (0.345) and job satisfaction (0.450) underscore the positive effects of remote work in the Indonesian context, further demostrating that these benefits extend beyond Western settings and are applicable to developing countries like Indonesia.

A key contribution of this research is the exploration of technological support as a crucial mediating factor. Technological support not only enables employees to perform their tasks more efficiently but also amplifies the benefits of remote work, particularly in terms of productivity and job satisfaction. The path coefficients of 0.280 for productivity and 0.208 for job satisfaction illustrate the significant role that technology plays in supporting remote work environments. Without reliable technological infrastructure, employees may face barriers that limit the full potential of remote work policies. Thus, organizations must invest in technological resources—such as communication tools, high-speed internet, and project management software—to maximize the positive outcomes of remote work.

Despite the valuable contributions of this study, several limitations should be acknowledged. First, the research relies on self-reported data, which may introduce bias as respondents could have given socially desirable responses rather than fully accurate ones. Future studies should consider using objective measures of productivity and job satisfaction to complement self-reported data. Additionally, the study focuses on a specific geographic region, Indonesia, which may limit the generalizability of the findings to other countries with different technological infrastructures and remote work cultures. Future research could explore how these dynamics play out in other regions or across different sectors, particularly in rural areas where technological access may be more limited.

Moreover, this study used a cross-sectional design, which restricts the ability to assess changes over time or to establish causal relationships definitively. Longitudinal studies would provide a more robust understanding of how remote work policies and technological support affect employee outcomes in the long term. Future research could

also explore other mediating or moderating variables, such as organizational culture or leadership styles, that may influence the effectiveness of remote work policies.

In conclusion, while this study adds to the growing body of knowledge on remote work and highlights the critical role of technological support, there is a need for further exploration into how these relationships evolve over time and across different contexts. Organizations looking to implement or refine remote work strategies should prioritize technological investments and consider regional disparities in technological infrastructure to create inclusive, productive, and satisfying work environments for their employees.

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