INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN ACCOUNTING, FINANCE AND MANAGEMENT SCIENCES

OPEN ACCESS JOURNAL

Vol 14, Issue 4, (2024) E-ISSN: 2225-8329

Cultivating Remote Work Excellence: The Role of Work Environment, Work-Life Balance, Technology, and HR Policies in Central Malaysia's Manufacturing Industry

Nadrul Shaqman Bin Nor Zainal, Ramila Devi Ram Sing*, Nik Hasfizul Safuri Bin Hassan, Kumaran Kanapathipillai

UNITAR International University, Kelana Jaya Malaysia

Email: nadrul.shaqman@unitar.my, ramila@unitar.my, nikhasfizul.safuri@unitar.my

Corresponding Author Email: kumaran@unitar.my

To Link this Article: http://dx.doi.org/10.6007/IJARAFMS/v14-i4/23876 DOI:10.6007/IJARAFMS/v14-i4/23876

Published Online: 31 December 2024

Abstract

This study investigates the impact of organizational and technological factors on the productivity of remote workers in the manufacturing industry in central Peninsular Malaysia. Remote work is becoming more common, and understanding how to keep productivity high is essential for these companies. Multiple manufacturing companies that employ remote workers were chosen and an online survey done to gather insights. The survey on 176 employees focused on several key areas: work environment, work-life balance, technology infrastructure, and human resource policies, and how these areas affect remote worker productivity. This research employed a purposive sampling method amongst managers and lower-level employees. This research found that having a solid technology infrastructure to have a significant positive relationship boosts the productivity of remote workers. Work environment, work life balance and human resource policies were also significant but to a lesser extent. This research highlights the unique dynamics within the manufacturing sector, which may differ from other industries where remote work is more prevalent. Thus, due to the significant influence of these factors on remote worker productivity within the manufacturing industry, organizations can focus more on investing in technology infrastructure, enhancing the work environment, promoting work-life balance, and reevaluating human resource policies to enhance remote worker productivity.

Keywords: Remote Worker Productivity, Manufacturing Industry, Technological Infrastructure, Work Environment, Work-Life Balance, Human Resource Policies

Introduction

Remote work is commonly referred to as a work setting in which employees are not in a traditional office setting when performing their work duties, usually their work is done from home or any alternative location that is at the workplace. *(Beckel & Fisher, 2022)*. Remote work also allows individuals to complete their task and work through digital means, such as the internet, video conferencing, and other communication technologies. *(Lal, Dwivedi, & Haag, 2021)*. Remote work gives employees the autonomy to manage their work schedules and locations, allowing them to achieve a better balance between work and personal life while also resulting in cost savings for both employees and employers. However, this flexibility can also give rise to several challenges for the employees. These challenges include the potential for communication breakdowns, blurred lines between work and personal life, which can lead to a loss in productivity by the employees (Sharma, et al., 2024).

The challenges faced by employees participating in remote work is not similar to those who works in the office. Before the introduction of remote work, an employee traditionally is required to work in an office or a workplace where they carry out their responsibilities. This requires an employee to have face-to-face interactions with colleagues, supervisors, and other stakeholders in the same work environment. *(Beckel & Fisher, 2022)*. Furthermore, the nature of a shared workspace allows employees to collaborate, communicate, and engage in real-life team-building activities. This arrangement brings forth several benefits, such as fostering better interpersonal relationships, promoting immediate problem-solving, and enabling real-time collaboration *(Supriya, et al., 2024)*. However, it may also present challenges, such as increased commuting time and expenses, limited flexibility in work schedules, and the potential for distractions within the shared workspace *(Beckel & Fisher, 2022)*.

Research Problem

This study is conducted to examine the challenges and investigate the factors influencing productivity differences between remote and in-person work environments in Malaysia. This is made more crucial as there was an increased shift towards adopting remote work due to the COVID-19 pandemic (Majid et al., 2022). Additionally, this study aims to provide insights for better organizational strategies and policy decisions by comparing the effectiveness of remote and traditional work settings. It was reported that remote work offers benefits such as eliminating commute times and reducing workplace distractions (Kowalski & Slebarska, 2022). However, another study has highlighted the challenges of remote work, which includes communication barriers and difficulties in managing work priorities, that remains a significant concern to employers. (Mahesh, 2024).

It was reported in another study that remote work productivity is affected by the following factors, which includes, resource availability (especially technological), and communication effectiveness (Daril et al., 2023). Another study in Malaysia purported that physical, psychological, and technological factor poses as essential determinants of productivity in Malaysia (Nan et al., 2023). These studies were conducted mainly during the pandemic which may not fully reflect the post-pandemic situation, particularly in central peninsular Malaysia. This further emphasizes the need for more current research that captures the region's evolving socio-economic, cultural, and technological landscape (Raj et al., 2023).

We embarked on this research to investigate and suggest a comprehensive analysis of remote work productivity that focuses on this region. More importantly, it offers structured insights on the factors influencing remote work setting that allows employees to overcome these prevailing challenges. Finally, this research also aims to suggest actionable recommendations for organizations, policymakers and towards future research in this area, which will work towards improving the productivity and also the economic growth in Malaysia.

The significance of this study lies in its effort to bridge the knowledge gap regarding the impact of remote work on productivity. Through a comparative methodology, it aims to uncover meaningful differences between remote and in-person work environments, providing evidence-based insights to guide the development of more effective and sustainable work models. By addressing the lack of comprehensive empirical data on this topic, this research contributes valuable understanding to the discourse on work productivity in Malaysia.

Research Objectives

The objective of this research is to examine the following:
RO1: If there is a significant relationship between work environment and remote worker's productivity.
RO2: If there is a significant relationship between work-life balance and remote worker productivity.
RO3: If there is a significant relationship between technology infrastructure and remote worker's productivity.
RO4: If there is a significant relationship between human resource policies and remote worker's productivity.

Literature Review

Employees are crucial to organizations where their performance is evaluated based on task completion, efficiency, and productivity (Saurombe et al., 2022). During the COVID-19 pandemic, employee performance was severely affected by various unprecedented restrictions like the limitation of movement, and this have significantly impacted employee performance. The management of organizations across the globe, and particularly Malaysia, were compelled to take drastic actions. This unprecedented shift has transformed work approaches, raising critical questions about its effects on productivity—an area that remains uncertain yet pivotal in shaping the future of work (Kitagawa et al., 2021).

Investing in employees' development, well-being, and engagement drives productivity, efficiency, and profitability. (Aftab et al., 2023). In the pursuit of understanding the relationship between employee productivity and job demands, a framework was proposed by Arnold and Demerouti (2001). This Job Demand-Resources model suggest that high workloads and unclear goals, can adversely affect employee outcomes, whereas job resources—such as autonomy and social support—positively influence motivation and satisfaction.

Productivity Impact

Remote work, a subject of debate, was practiced before the pandemic, mainly in higher-paying jobs. (Gegerfelt & Sandstrom, 2023). In 2020, remote working percentages varied: nearly half in the US and Europe, 34.5% in Japan, and 44% in Malaysia. (Kitagawa et al., 2021). Remote work can positively impact employee well-being and present challenges such as lack of supervision and a monotonous environment. (Anakpo et al., 2023). Despite these challenges, some employees and organizations thrived in remote settings. McKinsey & Company found that over 20% of the workforce could work remotely 3 to 5 days a week without significant productivity declines. (Henke et al., 2022). In another study however, it was reported that remote work satisfaction decreased in Japan due to inconducive environment to work from the employee's homes. (Umishio et al., 2022). In Malaysia, a PWC survey showed that only 19% prefer in-person work, with 71% valuing face-to-face interactions for learning and job satisfaction. (PwC Malaysia, 2022); (Scally, 2021). The reason why employees yearn for a face-to-face interaction for learning and job satisfaction is probably due to the stimulation of neurotransmitters like dopamine and oxytocin, which can enhance empathy and teamwork. (Harter, 2023). A conventional office setting additionally, allows employees to concentrate and separate work from personal life, fostering social interactions and business connections. (Saurombe et al., 2022).

This study employs the JD-R model to understand how remote work factors influence productivity, providing insights for organizations to optimize remote work performance.

The Relationship Between Work Environment and Remote Worker's Productivity

H_1 : There is a significant relationship between work environment and remote worker's productivity.

Research shows that environmental factors significantly influence productivity. Gu Zhenjing et al. (2022) found that workspace design, noise levels, and ergonomic considerations affect task performance. Sarah and Ruiz (2020) emphasized that digital tools enhance collaboration in remote work. However, remote work poses challenges like home distractions and insufficient social engagement, which can negatively impact productivity. (InclusivEdge HR, 2023). Urbaniec et al. (2022) noted that technical difficulties and inadequate IT infrastructure can hinder efficiency.

The physical environment is crucial. Halpern (2014) found that natural light boosts job satisfaction and productivity. Kaplan (1995) reported similar findings with plants in offices. The social and cultural environment also matters. Paisal et al. (2020) showed that a positive social climate increases productivity and (Predrag et al., 2022) Found that a strong organizational culture has similar effects. Despite existing research, gaps remain, especially regarding remote work in Malaysia.

The Relationship Between Work-Life Balance and Remote Worker's Productivity

H_2 : There is a significant relationship between work-life balance and remote worker's productivity.

Research highlights the importance of employee well-being for productivity. Haseeb (2023) found that job satisfaction, stress levels, and work conditions significantly shape productivity. Shivangi and Gautam (2023) emphasized that work-life balance is influenced by the work

environment, affecting task performance efficiency. The relationship between work-life balance and productivity is complex. Patricio (2023) argued that in-person work offers better social interactions and support, enhancing mental and emotional well-being. However, in-person settings can also increase stress due to long commutes, office politics, and lack of flexibility. Most studies focus on individual factors affecting work-life balance, neglecting organizational influences. There is limited research on the specific impact of remote work environments on work-life balance and productivity, especially in Malaysia.

The Relationship Between Technology Infrastructure and Remote Worker's Productivity

H_3 : There is a significant relationship between technology infrastructure and remote worker's productivity.

The Job Resources (JD-R) Model suggests that job demands, such as technology infrastructure, influence employee productivity by affecting their resources, such as skills and motivation. (Demerouti & Bakker, 2008). High job demands with low resources can lead to burnout and decreased productivity, while high demands with high resources can enhance productivity. Studies highlight the significant role of technology infrastructure in shaping productivity (Bakker & Demerouti, 2001; Demerouti & Bakker, 2008). Bones (2024) found that reliable internet, efficient communication tools, and adequate hardware/software systems are critical for facilitating work processes. Lakhwani et al. (2020) argued that effective IT management improves organizational performance.

However, technology infrastructure can also pose challenges. Urbaniec et al. (2022) identified technical difficulties such as insufficient IT infrastructure, inadequate hardware, lack of protocols, poor internal communication, and insufficient digital skills as barriers to remote work efficiency.

The Relationship Between Human Resources Policies and Remote Worker's Productivity

H_4 : There is a significant relationship between human resource policies and remote worker's productivity.

High job demands with low resources can lead to burnout and decreased productivity, while high demands with high resources can enhance productivity (Arnold & Demerouti, 2001) Abubakar et al. (2019) found that clear and consistent policies improve productivity by providing security and stability. Olusegun (2023) argued that effective HR policies enhance work output, task completion rates, and efficiency. Gajendran and Harrison (2007) noted that flexible work arrangements, like telecommuting, improve productivity by reducing distractions and increasing job satisfaction.

Al-Shameri et al. (2024) found that remote work policies may cause confusion and negatively impact productivity. Nazeer et al. (2023) argued that ineffective implementation of remote work policies can hinder productivity without adequate support and resources. Rafael et al. (2022) emphasized the importance of effective communication protocols in remote work settings to prevent misunderstandings and productivity loss.

Despite extensive research, most studies focus on the general impacts of HR policies on productivity, neglecting specific challenges remote workers face in Malaysia (Aftab, Khahro,

Memon, Memon, & Mustafa, 2023; Olusegun, 2023; Abubakar, Elrehail, Alatailat, & Elçi, 2019). There is also a lack of research on how policy implementation shapes productivity outcomes.

Based on the discussions above on the relationships of factors such as work environment, work-life balance, technological infrastructure and human resource policies, and productivity impact, the following conceptual framework has been created to show the relationship between these factors.

Conceptual Framework

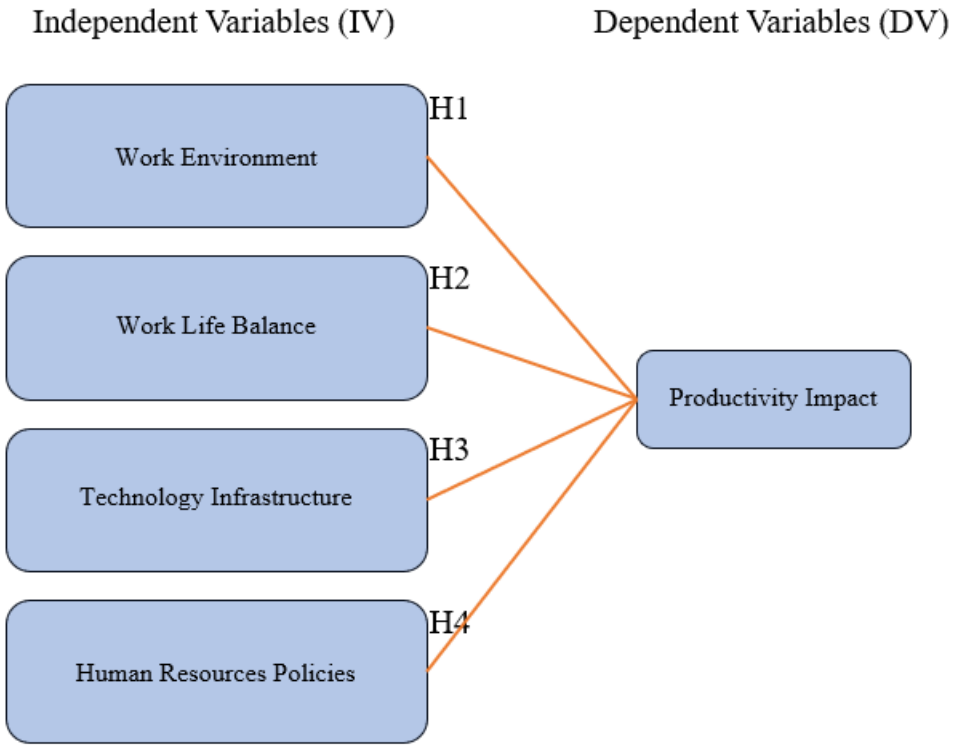

Figure 1: Conceptual Framework

Research Methodology

This research targets employees from the manufacturing industry in the central region of Peninsular Malaysia, primarily in Selangor. Employees in this sector are significant contributors to Malaysia's GDP, highlighting its critical role in the nation's economy (Statista, 2024; OpenDOSM, 2024). The study focuses on employees in managerial positions and below, with experience in both remote and in-person work settings.

Krejcie and Morgan's (1970) table is used to determine the sample size, resulting in a target of 176 participants for the population. This ensures adequate representation for accurate and reliable findings (Chua, 2006). To enhance representativeness, purposive sampling is employed to select participants from diverse backgrounds, thereby minimizing selection bias (Jawad & Tajik, 2022). This non-probability sampling method is particularly suitable due to its efficiency, especially given time constraints (Khan, 2020). Data will be collected through structured questionnaires and analyzed using SmartPLS, ensuring robust and comprehensive insights.

Measurement Model

The following components used to measure each variable:

Work Environment	Physical workspace, Collaboration opportunities, and Communication channels (Lisa, 2022).
Work-Life Balance	Job satisfaction, Mental Health, and Balancing Work with Personal Life (Rashida & Duraipandian, 2014).
Technology Infrastructure	Availability, Reliability, and Effectiveness of Internet Connections and Tools (Jaana-Piia et al., 2020).
Human Resource Policies	Clarity, Supportiveness, and Effectiveness (Shamoel, 2023).
Productivity Impact	Output Quality, Task Completion Time, and Overall Performance (Ramos-Villagrasa et al., 2019).

This comprehensive measurement model ensures accurate analysis and provides valuable insights for organizational decision-making in optimizing remote and in-person work environments in Malaysia.

Findings and Interpretation

This section presents the analysis and findings on the impact of organizational and technological factors on remote workers' productivity in the manufacturing industry in the central region of Peninsular Malaysia. The analysis provides insights into how these factors influence productivity among remote workers.

Demographic Profile

The demographic profile of the 176 respondents is summarised in the table below.

Table 1

Demographic Profile

Variable	Category	Frequency	Percentage (%)
Age Range	21-30 years old	3	1.7%
	31-40 years old	73	41.5%
	41-50 years old	99	56.3%
	51-60 years old	1	0.6%
Education Level	College / Diploma	26	14.8%
	Degree	126	71.6%
	Master	24	13.6%
Working Industry	Manufacturing	43	24.4%
	Non-Manufacturing	133	75.6%
Current Working Environment	Remote Worker	176	100.0%
Work Based Location	Central Region of Peninsular Malaysia	168	95.5%
	Other Region	8	4.5%

The respondents are predominantly aged 41-50 (56.3%) and 31-40 (41.5%), with a highly educated sample where 71.6% hold a degree. Most are from non-manufacturing sectors (75.6%), ensuring diverse insights. All respondents are remote workers, primarily based in the

central region of Peninsular Malaysia (95.5%). This demographic profile highlights a mature, educated workforce from vital economic regions, providing valuable insights into the impact of organizational and technological factors on remote worker productivity in the manufacturing industry.

Mean and Standard Deviation (SD) Analysis

Table 2

Descriptive Statistics (N=176)

Factors	Mean	Std. Deviation
Work Environment	3.81	0.58
Work-Life Balance	3.78	0.92
Technology Infrastructure	3.46	0.55
Human Resource Policies	2.87	0.49
Productivity Impact	3.44	0.51

This Section Presents the Mean and Analysis of Key Variables

The Work Environment factor has a mean of 3.81. Work-Life Balance has a mean of 3.78. This shows that the respondents put more emphasis on the importance of both these factors as compared to other variables. Human Resource Policies have the lowest mean of 2.87 and this is most likely due to the fact that employees are not in control of changes in these policies.

Reliability Analysis

Table 3

Reliability Analysis (N = 176)

Variables	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
HR	0.913	0.919	0.941	0.800
PR	0.973	0.975	0.979	0.902
TI	0.965	0.967	0.972	0.853
WB	0.966	0.969	0.974	0.883
WE	0.889	0.894	0.948	0.900

The reliability test results presented in Table 4.3 demonstrate that the scales used to measure the variables in this study generally exhibit good (0.889) to excellent (0.975) internal consistency, as indicated by Cronbach's Alpha values. Overall, all Cronbach's Alpha values in this study surpassed the 0.80 value and this exhibits a preferred internal consistency value (Cortina, 1993).

Path Coefficient Analysis

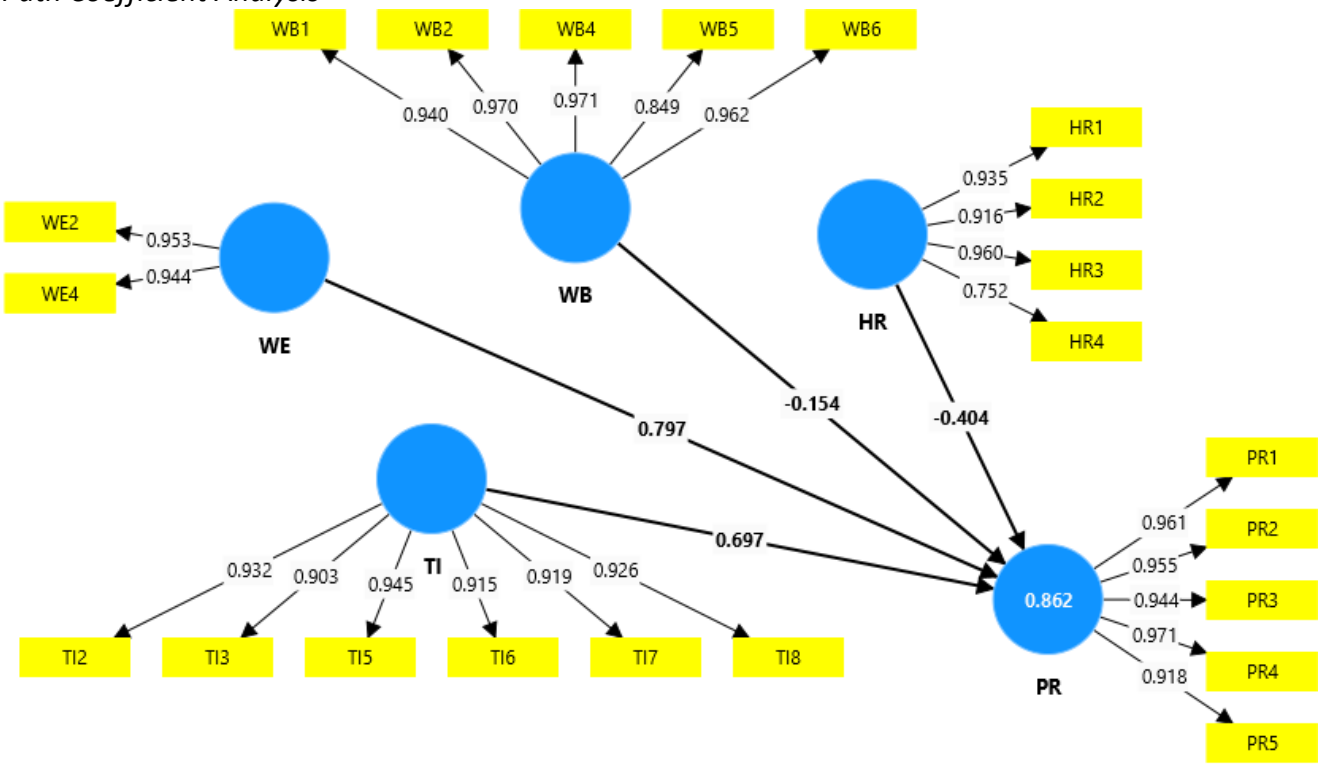

Figure 2: Measurement model analysis

Table 5
Coefficient of Determination

Variables	R-square	R-square adjusted
PR	0.862	0.859

R-square (0.862) means that 86.2% of the variation in productivity impact (PR) is explained by the independent variables in the model. This value suggests that the model provides a strong explanation for the dependent variable. On the other hand, R-square adjusted (0.859) accounts for the number of predictors in the model and adjusts the R-square value to prevent overestimation. With an adjusted R-square of 85.9%, the model still explains a very high proportion of the variance in productivity impact. The slight decrease compared to the R-square indicates that the independent variables are well-chosen and not overly complex. As such, the model demonstrates excellent explanatory power, with most of the variance in productivity impact being attributed to the independent variables. The small difference between the R-square and the adjusted R-square values indicates that the coefficient of determination for this model is both robust and parsimonious (Ozili, 2023).

Table 6
Path Coefficient Analysis

Variables	Original sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T statistics (|O/STDEV|)	P values	Hypothesis
HR --> PR	-0.404	-0.403	0.058	6.901	<0.001**	Accepted
TI --> PR	0.697	0.697	0.049	14.340	<0.001**	Accepted
WB --> PR	-0.154	-0.153	0.067	2.291	0.022*	Accepted
WE --> PR	0.797	0.795	0.070	11.387	<0.001**	Accepted

**denotes significant at 1% level
*denotes significant at 5% level

Discussion

$\boldsymbol{H_1}$: Relationship between Work Environment and Remote Worker's Productivity
The hypothesis asserts a significant positive relationship between the work environment and remote worker productivity at the 1% level, aligning with prior research that underscores the importance of a supportive work environment (Davis et al., 1997; Morgeson et al., 2006; Kim et al., 2020). Better psychological and physical states increase the productivity levels among employees (Tleuken et. al., 2022).

$\boldsymbol{H_2}$: Relationship between Work-Life Balance and Remote Worker's Productivity
This hypothesis indicates a statistically significant but negative relationship at 5% level. Therefore, the data collected suggest that work-life balance has a meaningful impact on remote worker productivity in this study, which is consistent with the findings of a recent study by Rahman and Sing (2024). This finding emphasizes the importance of work-life balance in enhancing employee well-being and productivity (Greenhaus & Allen, 2011; Allen et al., 2013; Beauregard & Henry, 2009). WLB helps reduce stress, improve employees' physical, emotional, and mental health, minimize mistakes, and foster greater advocacy for the company.

$\boldsymbol{H_3}$: Relationship between Technology Infrastructure and Remote Worker's Productivity
This suggests a significant positive relationship at 1% level between technology infrastructure and productivity. These findings align with established research highlighting the critical role of reliable and advanced technology in enabling effective remote work practices (Venkatesh & Bala, 2008; Maruping et al., 2009). Studies by Bailey and Kurland (2002) and Raghuram et al. (2001) further support this view, emphasizing technology's ability to address traditional challenges in remote work environments. However, research by Bentley et al. (2016) suggests that while technology is essential, it cannot guarantee productivity improvements without adequate management and support structures. Despite this, the current study's findings strongly advocate for investing in robust technology infrastructure as a key element in fostering successful remote work strategies within the manufacturing industry.

$\boldsymbol{H_4}$: Relationship between Human Resource Policies and Remote Worker's Productivity
This indicates a significant negative relationship between HR and productivity. This finding aligns with research emphasizing the influence of HR policies on shaping employee attitudes and behaviors (Boselie et al., 2005; Wright & Nishii, 2013). However, it contrasts with the

perspective of Pfeffer (1998), who highlighted the substantial impact of strategic HR practices on overall organizational performance. The negative impact could be due to poorly aligned HR practices, such as inadequate training, lack of career development, and failure to manage workloads or foster engagement, can lead to disengagement, burnout, and decreased productivity. Research indicates that employees who are satisfied and happy with HR policies perform better, making it easier for management to motivate them toward greater productivity (Singh & Mohanty, 2012).

Conclusion

The findings of this study reveal key factors that influence remote worker productivity in the manufacturing industry, with technology infrastructure emerging as the most significant driver. Strong technology infrastructure supports smooth workflows, enabling remote workers to be productive and efficient, explaining the positive relationship. While the work environment and work-life balance also affect productivity, their impact is less pronounced. A positive and supportive work environment significantly enhances productivity by providing the necessary physical, psychological, and social conditions that foster high performance. However, while work-life balance is important, the lack of clear boundaries or over-flexibility can sometimes lead to negative consequences, such as stress or distraction, reducing productivity. Despite not being statistically significant, human resource policies still play a role in shaping the productivity landscape. Misaligned or poor HR practices can lead to disengagement, stress, and burnout, ultimately lowering productivity. These results emphasize the need for continuous investment in technology infrastructure and support systems, as well as a holistic approach to work environment and work-life balance to improve remote work outcomes.

Based on these findings, the study suggests several recommendations for enhancing remote worker productivity in the manufacturing industry. Organizations should prioritize robust technology infrastructure, ensuring reliable and user-friendly tools for remote work, and create supportive work environments with ergonomic furniture and dedicated workspaces. Promoting work-life balance through flexible hours and wellness programs can also improve productivity, even though its statistical impact was minimal. Additionally, while human resource policies had a negligible effect on productivity, they should still be tailored to support remote work, focusing on performance evaluation, training, and support. Overall, investing in these areas and fostering a culture of continuous improvement can help organizations leverage remote work to boost productivity and employee well-being.

Limitations and Future Research

This study has several limitations that should be addressed in future research. The scope of the study is confined to the manufacturing industry in the central region of Peninsular Malaysia, which may limit the generalizability of the findings. Future research should broaden the scope to include various regions and industries to determine the applicability of these results across different contexts. Comparing results across diverse geographical and industrial settings can provide a more comprehensive understanding of the factors influencing remote worker productivity.

Additionally, this study is cross-sectional, capturing data at a single time. Longitudinal studies could offer deeper insights into how the relationships between these factors and productivity

evolve, identifying long-term trends and assessing the lasting impacts of organizational and technological changes on remote worker productivity. Future research should also consider incorporating variables such as employee engagement, job satisfaction, and leadership styles. Exploring the interplay between these variables and those examined in this research could provide valuable insights into optimizing productivity in remote work environments.

Moreover, qualitative research methods like interviews and focus groups should complement quantitative findings. These methods can uncover nuanced reasons behind the statistical relationships observed and provide a richer contextual understanding. Future studies should also investigate the impact of external factors like economic conditions, technological advancements, and regulatory changes on remote worker productivity. Understanding how these external factors interact with organizational and technological factors can offer a more holistic view of remote work dynamics.

In conclusion, this study underscores the significant influence of organizational and technological factors on remote worker productivity within the manufacturing industry in the central region of Peninsular Malaysia. Investing in technology infrastructure, enhancing the work environment, promoting work-life balance, and reevaluating human resource policies can potentially enhance remote worker productivity. Future research should build upon these findings by exploring broader contexts, incorporating additional variables, and utilizing qualitative methods to deepen our understanding of remote work dynamics.

Contribution

This study has contributed to the body of knowledge through the research on the relationship between key productivity factors in the manufacturing industry, particularly emphasizing the importance of technology infrastructure, work environment, work-life balance, and human resource policies and how it impacts remote workers. This research found that there are significant relationships between each of these variables (HR, TI, WB, WE) with productivity (PR). Subsequently, this research also provides organizations, particularly those in the manufacturing industry in Malaysia, with practical and actionable recommendations on areas of improvements such as investing in investing in technology infrastructure, enhancing the work environment, promoting work-life balance, and tailoring human resource policies to better support remote work.

References

Abubakar, M. A., Elrehail, H., Alatailat, M. A., & Elçi, A. (April-June, 2019). Knowledge management, decision-making style and organizational performance. Journal of Innovation & Knowledge, 4(2), Pages 104-114. doi:https://doi.org/10.1016/j.jik.2017.07.003

Aftab, H. M., Khahro, S. H., Memon, N. A., Memon, Z. A., & Mustafa, A. (27 May, 2023). Relationship between Job Satisfaction and Employee Performance in the Construction Industry of Pakistan. Sustainability. doi:https://doi.org/10.3390/su15118699

Allen, T. D., Johnson, R. C., Kiburz, K. M., & Shockley, K. M. (2013). Work-family conflict and flexible work arrangements: Deconstructing flexibility. Personnel Psychology, 66(2), 345-376.

Anakpo, G., Nqwayibana, Z., & Mishi, S. (2023). The Impact of Work-from-Home on Employee Performance and Productivity: A Systematic Review. Sustainability, 15(5):4529. doi:https://doi.org/10.3390/su15054529

Arnold, B. B., & Demerouti, E. (2001). The Job Demands-Resources Model of Burnout. Journal of Applied Psychology.

Bailey, D. E., & Kurland, N. B. (2002). A review of telework research: Findings, new directions, and lessons for the study of modern work. Journal of Organizational Behavior, 23(4), 383-400.

Bakker, A. B., & Demerouti, E. (2001). The Job Demands-Resources Model: A theoretical framework for understanding the relationship between job demands, job resources, and employee outcomes. Journal of Managerial Psychology, 16(3), 264-275.

Beauregard, T. A., & Henry, L. C. (2009). Making the link between work-life balance practices and organizational performance. Human Resource Management Review, 19(1), 9-22.

Beckel, J. L., & Fisher, G. G. (2022). Telework and Worker Health and Well-Being: A Review and Recommendations for Research and Practice. International Journal of Environmental Research and Public Health, 2-32.

Beckel, J., & Fisher, G. (2022). Telework and Worker Health and Well-Being: A Review and Recommendations for Research and Practice. Int J Environ Res Public Health.

Bentley, T. A., Teo, S. T., McLeod, L., Tan, F., Bosua, R., & Gloet, M. (2016). The role of organizational support in teleworker wellbeing: A socio-technical systems approach. Applied Ergonomics, 52, 207-215.

Bhardwaj, P. (2019). Types of Sampling in Research. Journal of the Practice of Cardiovascular Sciences, 5(3):p 157-163. doi:10.4103/jpcs.jpcs_62_19

Bones, I. (20 Jan, 2024). 7 IT Infrastructure Components Explained. Retrieved March, 2024, from AllSafeIT: https://www.allsafeit.com/blog/it-infrastructure-components

Boselie, P., Dietz, G., & Boon, C. (2005). Commonalities and contradictions in HRM and performance research. Human Resource Management Journal, 15(3), 67-94.

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., . . . Walker, K. (2020). Purposive sampling: complex or simple? Research case examples. J Res Nurs., 25(8):652-661. doi:10.1177/1744987120927206

Chinna, K., & Yuen, C. W. (2015). Statistical Analysis Using SPSS. (2nd ed.) (Vol. 22). Pearson Malaysia.

Chua, L. C. (2006). Sample Size Estimation Using Krejcie and Morgan and Cohen Statistical Power Analysis: A Comparison. Jurnal Penyelidikan IPBL. Retrieved from https://www.academia.edu/8303970/SAMPLE_SIZE_ESTIMATION_USING_KREJCIE_AND_MORGAN_AND_COHEN_STATISTICAL_POWER_ANALYSIS_A_COMPARISON

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. Journal of applied psychology, 98.

Daril, M. A., Azman, N. S., Wahab, M. I., Subari, K., khan, N., & Irum, S. (2023). The Impact of Work from Home on Productivity among Manufacturing Industry Workers During MCO. Journal of Optimization in Industrial Engineering, Vol.16, Issue 1, Winter & Spring 2023, 2190–223. doi:10.22094/JOIE.2023.1973928.2020

Davis, M. A., Schoorman, F. D., & & Donaldson, L. (1997). Toward a stewardship theory of management. Academy of Management Review, 22(1), 20-47.

Demerouti, E., & Bakker, A. B. (2008). Burnout and work engagement: An etiological model. Journal of Applied Psychology, 93(3), 537-549.

Demerouti, E., & Bakker, A. B. (2018). The Job Demands-Resources Model: A decade of research on the consequences of job demands and job resources for employee well-being. Journal of Occupational Health Psychology, 23(2), 153-165.

Gegerfelt, J., & Sandstrom, M. (2023). How remote work affect employee productivity. Uppsala University. Retrieved from https://www.diva-portal.org/smash/get/diva2:1779091/FULLTEXT01.pdf

Gravetter, F., & Wallnau, L. (2014). Essentials of Statistics for the Behavioral Sciences. (8th ed.). Wadsworth, Belmont, CA.

Greenhaus, J. H., & Allen, T. D. (2011). Work-family balance: A review and extension of the literature. Handbook of Occupational Health Psychology (2nd ed), 165-183.

Harter, J. (2 March, 2023). How Important Is Time in the Office? Retrieved from Gallup: https://www.gallup.com/workplace/468599/important-time-office.aspx

Haseeb, A. (6 May, 2023). The link between employee well-being and organizational success: exploring the evidence. Retrieved March, 2024, from Linkedin: https://www.linkedin.com/pulse/link-between-employee-well-being-organizational-haseeb-aslam-pmp-/

Henke, J. B., Jones, S. K., & O'Neill, T. A. (2022). Skills and abilities to thrive in remote work: What have we learned. Frontiers in Psychology. doi:https://doi.org/10.3389/fpsyg.2022.893895

InclusivEdge HR. (October, 2023). The Benefits of Remote Work: How Flexibility Attracts Top Talent. Retrieved March, 2024, from Linkedin: https://www.linkedin.com/pulse/benefits-remote-work-how-flexibility-attracts-ongte/

Jaana-Piia, I. M., Ahola, S., & Joensuu, J. (April, 2020). A Novel Construct To Measure Employees' Technology-Related Experiences of Well-Being: Empirical Validation of the Techno-Work Engagement Scale (TechnoWES). Scandinavian Journal of Work and Organizational Psychology. doi:10.16993/sjwop.79

Jawad, G., & Tajik, O. (December, 2022). Convenience Sampling. ResearchGate. doi:10.22034/ijels.2022.162981

Khan, N. (2020). Critical Review of Sampling Techniques in the Research Process in the World. University of Agriculture, Peshawar, Institute of Development Studies. doi:http://dx.doi.org/10.2139/ssrn.3572336

Kim, T., Mullins, L. B., & Yoon, T. (2020). Supervision of remote employees: An investigation of leadership styles and employee well-being. Journal of Organizational Effectiveness: People and Performance, 7(3), 253-270.

Kitagawa, R., Kuroda, S., Okudaira, H., & Owan, H. (2021). Working from home and productivity under the COVID-19 pandemic: Using survey data of four manufacturing firms. Plos One. doi:https://doi.org/10.1371/journal.pone.0261761

Kowalski, G., & Slebarska, K. (2022). Remote Working and Work Effectiveness: A Leader Perspective. International Journal of Environmental Research and Public Health, 19(22):15326. doi:10.3390/ijerph192215326

Lakhwani, M., Dastane, O., Satar, N. S., & Johari, Z. (2020). The Impact of Technology Adoption on Organizational Productivity. Journal of Industrial Disribution & Business, Vol 11 No 4 (2020) 7-18. doi:https://doi.org/10.13106/JIDB.2020.VOL11.NO4.7

Lal, B., Dwivedi, Y. K., & Haag, M. (2021). Working from Home During Covid-19: Doing and Managing Technology-enabled Social Interaction With Colleagues at a Distance. Information System Frontiers, 1333-1350.

Lisa, T. (June, 2022). The Impact of Hybrid Work on Productivity:. Retrieved March, 2024, from https://kth.diva-portal.org/smash/get/diva2:1696127/FULLTEXT01.pdf

Mahesh, D. (2024). Remote Work: Challenges and Strategies for Effective Management. Shanlax International Journal of Management, 145–49. doi:https://doi.org/10.34293/management.v11iS1 -Jan.7156

Majid, A., Sufyan, M., Ameer, I., & Mustak, M. (21 Sept, 2022). Remote work and the COVID-19 pandemic: An artificial intelligence-based topic modeling and a future agenda. doi:10.1016/j.jbusres.2022.113303

Maruping, L. M., Magni, M., & Thatcher, S. M. (2009). A technology configuration theory of team effectiveness: Effects of team technology fit and informational technology use. MIS Quarterly, 33(2), 325-357.

Morgeson, F. P., Johnson, M. D., Campion, M. A., Medsker, G. J., & Mumford, T. V. (2006). Understanding reactions to job redesign: A quasi-experimental investigation of the moderating effects of organizational context on perceptions of performance behavior. Personnel Psychology, 59(2), 333-363.

Nan, L. Y., Nee, H. Y., Ren, H. H., & Johan, M. R. (2023). Improving Employee Performance on Work Efficiency: A survey in employee productivity in Malaysia during Covid-19 Pandemic Age. Jurnal Intelek. Retrieved from https://ir.uitm.edu.my/id/eprint/82878/1/82878.pdf

Olusegun, O. A. (July, 2023). The Link Between Motivation and Organizational Performance: An Exploration of Factors Influencing Employee Motivation and its Impact on Organizational Success. International Journal of Business Ethics and Governance. doi:http://dx.doi.org/10.51325/ijbeg.v6i1.118

OpenDOSM. (2024). Manufacturing Statistics. Retrieved from OpenDOSM: https://open.dosm.gov.my/dashboard/manufacturing-statistics

Ozili, P. K. (2023). The Acceptable R-Square in Empirical Modelling for Social Science Research. In Social Research Methodology and Publishing Results (pp. 134-143).

Pfeffer, J. (1998). Seven practices of successful organizations. California Management Review, 40(2), 96-124.

Predrag, M., Kuzmanovic, B., Mitić, S., & Terek, E. (2022). The effects of organizational culture on job satisfaction and financial performance. Journal of Engineering Management and Competitiveness, 12(1), 44-56.

Pritha, B. (3 Feb, 2022). Independent vs. Dependent Variables | Definition & Examples. Retrieved March, 2024, from Scribbr: https://www.scribbr.com/methodology/independent-and-dependent-variables/

PwC Malaysia. (July, 2022). What Malaysians think about work today, PwC's Workforce Hopes and Fears Survey 2022 (Malaysia report). Retrieved March, 2024, from

https://www.pwc.com/my/en/publications/2022/pwc-workforce-hopes-and-fears-survey-2022.html

Raghuram, S., Garud, R., Wiesenfeld, B., & Gupta, V. (2001). Factors contributing to virtual work adjustment. Journal of Management, 27(3), 383-405.

Raj, R., Kumar, V., Nagendra Kumar Sharma, S. S., & Seema Mahlawat, P. V. (2023). The Study of Remote Working Outcome and its Influence on Firm Performance. Social Sceinces & Humanities Open, 8(1):100528. doi:10.1016/j.ssaho.2023.100528

Ramos-Villagrasa, P. J., Barrada, J. R., Fernandez-del-Rio, E., & Koopmans, L. (2019). Assessing Job Performance Using Brief Self-report Scales: The Case of the Individual Work Performance Questionnaire. Journal of Work and Organizational Psychology, 195 - 205. doi:https://doi.org/10.5093/jwop2019a21

Rashida, B., & Duraipandian, K. (November, 2014). DEVELOPMENT OF AN INSTRUMENT TO MEASURE WORK LIFE BALANCE OF IT PROFESSIONALS IN CHENNAI. International Journal of Management (IJM), 5(11), 21-33. Retrieved April, 2024, from https://iaeme.com/MasterAdmin/Journal_uploads/IJM/VOLUME_5_ISSUE_11/10120140511002.pdf

Rohit, R., Vimal, K., Nagendra, K. S., Sumanjeet, S., Seema, M., & Verma, P. (29 April, 2023). The study of remote working outcome and its influence on firm performance. Social Sciences & Humanities Open, 8(1). doi:https://doi.org/10.1016/j.ssaho.2023.100528

Sarah, M. S., & Ruiz, J. (20 May, 2020). Challenges and barriers in virtual teams: a literature review. Discover Applied Sciences, 2. doi:https://doi.org/10.1007/s42452-020-2801-5

Saurombe, M. D., Rayners, S. S., Mokgobu, K. A., & Manka, K. (2022). The perceived influence of remote working on specific human resource management outcomes during the COVID-19 pandemic. SA Journal of Human Resource Management, 20(0), a2033. doi:https://doi.org/10.4102/sajhrm.v20i0.2033

Scally, A. (2021). Productivity in a changing workplace. Property Journal. Retrieved from https://ww3.rics.org/uk/en/journals/property-journal/productivity-in-a-changing-workplace--.html

Shamoel, H. (August, 2023). The Impact of Remote Work on HR Practices:Navigating Challenges, Embracing Opportunities. European Journal of Human Resource Management Studies. doi:10.46827/ejhrms.v7i1.1549

Sharma, C., Rashi, Sharma, A., Jha, A., Prakash, B., & Arya, S. (2024). The Role of Emotional Intelligence in Fostering Employee Engagement and Resilience. European Economic Letters, 57-63.

Shivangi, S., & Gautam, P. (2023). Dimensions of Employee Well-Being at Work: A New Analytic Framework. In Advances in Modelling and Optimization of Manufacturing and Industrial Systems (pp. 523-532). doi:10.1007/978-981-19-6107-6_37

Statista, R. D. (2024). Distribution of the manufacturing value added in Malaysia in 2023, by sector. Retrieved from Statista: https://www.statista.com/statistics/942316/malaysia-manufacturing-value-added-by-sector/#:~:text=In%20total%2C%20about%2023%20percent%20of%20the,country%27s%20GDP%20was%20generated%20by%20the%20manufacturing%20industry.

Supriya, Y., Bhulakshmi, D., Bhattacharya, S., Gadekallu, T. R., Vyas, P., Kaluri, R., . . . MAHMUD, M. (2024). Industry 5.0 in Smart Education: Concepts,Applications, Challenges, Opportunities,and Future Directions. IEEE Access, 81938-81967.

Umishio, W., Kagi, N., Asaoka, R., Hayashi, M., Sawachi, T., & Ueno, T. (2022). Work productivity in the office and at home during the COVID-19 pandemic: A cross-sectional

analysis of office workers in Japan. Infoor Air, 32(1): e12913. doi:https://doi.org/10.1111/ina.12913

Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. Decision Sciences, 39(2), 273-315.

Wright, P. M., & Nishii, L. H. (2013). Strategic HRM and organizational behavior: Integrating multiple levels of analysis. HRM and Performance: Achievements and Challenges, 97-110.