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Remote Work Dynamics in Semiconductor MNCs in Klang Valley: The Impact of Work Environment, Technological Infrastructure, and Work-Life Balance on Employee Productivity Moderated by Gender

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ABSTRACT

The shift towards remote work has become a prominent feature of contemporary workplaces, driven by technological advancements and changing organizational paradigms. This study investigates remote work dynamics within semiconductor multinational corporations (MNCs) in Klang Valley, focusing on the interplay between work environment, technological infrastructure, work-life balance, and employee productivity. Social Exchange Theory (Blau, 1964), Operational model of analysis (Leitão et al., 2019) and Task-to-Performance Chain Theory (Goodhue and Thompson, 1995) guides the exploration of how these factors influence productivity, while Predictors and outcomes of LMX Model (Tziner et al., 2020) informs the examination of gender as a moderating factor. Utilizing a quantitative research approach, data was collected through structured surveys administered to employees of semiconductor MNCs in the Klang Valley region. The survey instrument captured key variables related to the work environment, technological infrastructure, and work-life balance. Statistical analyses, including regression modeling and moderation analysis, were employed to examine the relationships between these variables and productivity while considering gender as a moderating factor. The findings provide empirical evidence regarding the impact of the work environment, technological infrastructure, and work-life balance on employee productivity in remote settings within the semiconductor industry. Additionally, investigating gender as a moderating factor uncovers potential disparities in remote work experiences and outcomes between male and female employees. This study contributes to a deeper understanding of remote work dynamics, offering insights into organizational policies and practices to optimize productivity and foster inclusivity in remote work arrangements.

Keywords: Work Environment, Technological Infrastructure, Work-life Balance, and Employee Productivity
JEL Classification: J24, J29, O3

1. INTRODUCTION

The contemporary work landscape has undergone significant transformations driven by technological advancements, globalization, and evolving attitudes towards work-life balance. One notable shift is the increasing prevalence of remote work, which allows employees to perform their job duties from locations outside of the traditional office environment, facilitated by digital communication technologies (Allen et al., 2021). While remote work offers numerous benefits, including increased flexibility and access to a broader talent pool, it also presents challenges that may impact employee productivity and well-being. Within the semiconductor industry, where collaboration, innovation, and access to specialized resources are crucial, the effectiveness of remote work arrangements is of particular interest. Semiconductor MNCs often rely on collaborative workspaces, specialized equipment, and face-to-face interactions to facilitate innovation and problem-solving. Transitioning to remote work may disrupt

these established workflows and hinder employee collaboration and knowledge sharing. Additionally, semiconductor MNCs require high-speed internet, reliable communication platforms, and secure data storage to facilitate remote collaboration and ensure the seamless flow of work-related information (Chen et al., 2020). Inadequate technological infrastructure may impede employees' ability to perform their duties effectively and contribute to feelings of isolation and disengagement.

Moreover, semiconductor MNCs often operate in fast-paced environments with demanding workloads and tight deadlines. Remote work may blur the boundaries between work and personal life, leading to increased employee stress and burnout (Bloom et al., 2020). The lack of physical separation between workspaces and living spaces may make it challenging for employees to disconnect from work and recharge, potentially impacting their overall well-being and job satisfaction.

Gender dynamics further complicate the remote work landscape, with evidence suggesting differential experiences and outcomes between male and female employees, as proposed by Gender Orientation Theory (Bird et al., 1984). Women, who often bear a disproportionate share of caregiving responsibilities, may face unique challenges in balancing work and family commitments in a remote work environment. Additionally, gender biases and stereotypes may influence perceptions of remote work effectiveness, further exacerbating disparities in opportunities and advancement prospects.

The lack of research related to technology infrastructure on employee productivity has caused this variable to be studied and proven to have an impact on employee productivity, especially in semiconductor MNCs industry. In addition, it also states that there is a moderating effect of gender on two variables. Besides that, the integrated between three such as Operational model of analysis (Leitão et al., 2019), Task-to-Performance Chain Theory (Goodhue and Thompson, 1995) and Predictors and outcomes of LMX Model (Tziner et al., 2020) which has never been done by most of the previous studies makes it the contribution of this study.

Addressing these challenges requires a comprehensive understanding of the remote work dynamics within semiconductor MNCs in Klang Valley. By identifying the factors that influence remote work effectiveness and exploring the moderating effect of gender, this study aims to provide valuable insights for organizational leaders, policymakers, and employees. Ultimately, the goal is to develop evidence-based strategies and policies that optimize remote work arrangements, foster inclusivity, and promote employee well-being and productivity in the semiconductor industry.

The primary objective of this study is to explore the dynamics of remote work within semiconductor MNCs in the Klang Valley and understand their impact on employee productivity. The research aims to achieve the following objectives:

1. To examine the significant relationship between the work environment, technological infrastructure, and work-life balance and gender disparities to employee productivity in semiconductor MNCs
2. To examine the moderating effect of gender on the relationship between these predictors; work environment, technological infrastructure, and work-life balance and employee productivity in semiconductor MNCs.

2. LITERATURE REVIEW

Prior research by Olawale et al. (2024); Lee (2022); Ravi and Anulakshmi (2021); Irawanto et al. (2021); Haridas et al. (2021); and Prasetyaningtyas et al. (2021) in the domain of "work from home and employee productivity" reveals a significant positive correlation between factors such as work-life balance, work stress, job satisfaction, and technical perspectives on overall employee productivity. Nevertheless, it is important to note that these studies were predominantly conducted during the COVID-19 pandemic, during which governmental restrictions may have led respondents to view these factors more favorably. The extent to which remote work dynamics impact employee productivity post-COVID remains contentious. Some research even indicates that remote work can negatively affect work-life balance (Prasetyaningtyas et al., 2021), as fixed working hours blur the boundaries between work and personal life (Irawanto et al., 2021). Furthermore, perceptions of work-life balance vary across age groups, with older individuals generally exhibiting higher satisfaction than younger counterparts (Richert-Kaźmierska and Stankiewicz, 2016). Another study focusing on respondents aged 21-26 found minimal impact of gender diversity on physical environment, work-life balance, work flexibility, and employee productivity (Haridas et al., 2021).

The growing stress and pressures, along with organizational changes, have underscored the significance of investigating the impact of work-life balance (Bell et al., 2012). Job stress imposes a considerable emotional toll on employee well-being and a significant financial burden on organizational performance (Blackburn et al., 1986; Skakon et al., 2010). Stress, a commonly studied element, can be mitigated through partial remote work, which positively affects employee productivity (Lestari and Manggiasih, 2022). However, studies focusing on the availability of IT infrastructure are scarce. Benitez et al. (2018) found that flexibility in technology infrastructure enhances employees' work-life balance and productivity. Additionally, technological vigilance in terms of hardware, software, network, security, maintenance, information quality, and interoperability plays a crucial role in boosting both employee and organizational performance (Qatawneh and Al-Okaily, 2024; Lakhwani et al., 2020).

The work environment significantly influences work-life balance, employee engagement, and productivity. Inadequate safety, health, and comfort—such as poor lighting and ventilation, excessive noise, and lack of emergency access—can lead to low performance and occupational health issues, resulting in high absenteeism and turnover (Massoudi and Hamdi, 2017). Pech and Slade (2006) suggest that the focus is often on symptoms of disengagement, such as distraction, lack of interest, poor decisions, and high absence, rather than the root causes. Research by Massoudi and Hamdi (2017) on 50 employees in a private bank demonstrated that the

office environment affects employee productivity, with behavioral components of the office environment having a greater impact than physical components alone. Technological innovations have emerged to provide more accessible services for the community, so the banking business world must recognize the importance of using this new technology (Gasparin et al., 2020). In addition to technology, a company motivates employees to be enthusiastic at work and produce optimal work for what is expected by the company (Hermawan, 2020; Nardo et al., 2019; Sapta et al., 2020).

The discussed variables are often governed by theoretical models. In this context, Social Exchange Theory (Blau, 1964) and Gender Orientation Theory (Bird et al., 1984) are particularly relevant. Social Exchange Theory explores how reciprocal exchanges and resource transactions between employees and organizations enhance employee productivity in remote work settings. It emphasizes the significance of mutual benefits and positive interactions in fostering trust, commitment, and satisfaction. According to this theory, employees engage in social relationships with their organizations based on the principle of reciprocity, exchanging inputs (e.g., time, effort, skills) for outcomes (e.g., rewards, recognition, support). In the context of remote work, employees may perceive the quality of their work environment, technological infrastructure, and work-life balance as inputs in the social exchange process. Favorable work conditions and resources provided by the organization are expected to lead to increased commitment, satisfaction, and performance among employees. This study aims to explore how the perceived quality of remote work arrangements influences employee productivity within semiconductor MNCs by applying Social Exchange Theory.

Conversely, Gender Orientation Theory examines gender as a moderating factor in remote work dynamics, highlighting the influence of societal norms and expectations associated with gender roles on individuals' experiences and outcomes. This theory posits that gender-related factors, such as socialization experiences, stereotypes, and cultural norms, shape individuals' work behaviors and outcomes. In remote work contexts, gender may moderate the relationship between work environment, technological infrastructure, work-life balance, and employee productivity. For instance, women may face unique challenges related to work-family balance and access to resources compared to men, resulting in differential outcomes in remote work effectiveness. By incorporating Gender Orientation Theory, this study aims to examine how gender influences the remote work experiences and productivity outcomes of employees within semiconductor MNCs.

While prior research has explored the influence of various factors such as work environment, technological infrastructure, and work-life balance on employee productivity in remote work settings, there is a notable lack of studies examining gender as a moderator in these relationships. Gender-related factors may interact with work-related variables to shape individuals' experiences and outcomes in remote work contexts, underscoring the need for studies that explicitly investigate the moderating effect of gender (Bellezza et al., 2019; Eagly and Wood, 2012).

2.1. Conceptual Framework

Social exchange theory (SET) is one of the gold standards to understand workplace behavior (Cropanzano and Mitchell, 2005). Cropanzano et al. (2017) defined the SET as (i) an initiation by an actor toward the target, (ii) an attitudinal or behavioral response from the target in reciprocity, and (iii) the resulting relationship. The conceptual framework of this study base on understanding of on the idea that social behavior is the result of an exchange process. According to this theory, people weigh the potential benefits and risks of their social relationships. When the risks outweigh the rewards, they will terminate or abandon the relationship. The purpose of this exchange is to maximize benefits and minimize costs.

This study integrated three model such as Operational model of analysis (Leitão et al., 2019) (Figure 1), Task-to-Performance Chain Theory (Goodhue and Thompson, 1995) (Figure 2) and Predictors and outcomes of LMX Model (Tziner et al., 2020) (Figure 3) incorporates the following components:

1. The work environment encompasses the physical and social aspects of the workplace, including collaborative spaces,

Figure 1: Operational model of analysis (Leitão et al., 2019)

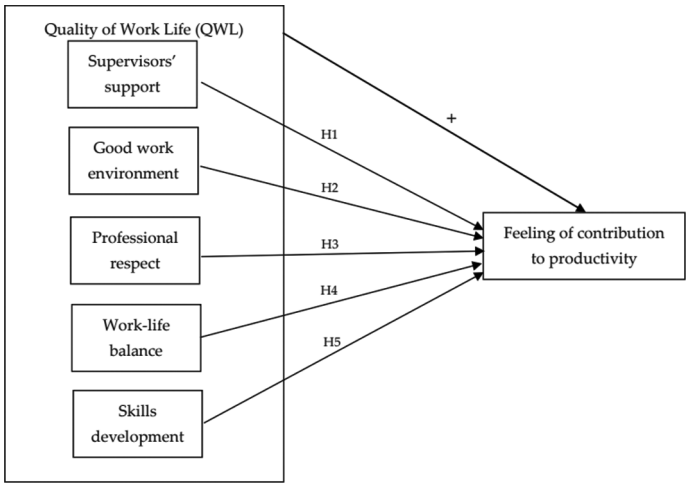


Figure 2: Task-to-Performance Chain Theory (Goodhue and Thompson, 1995)

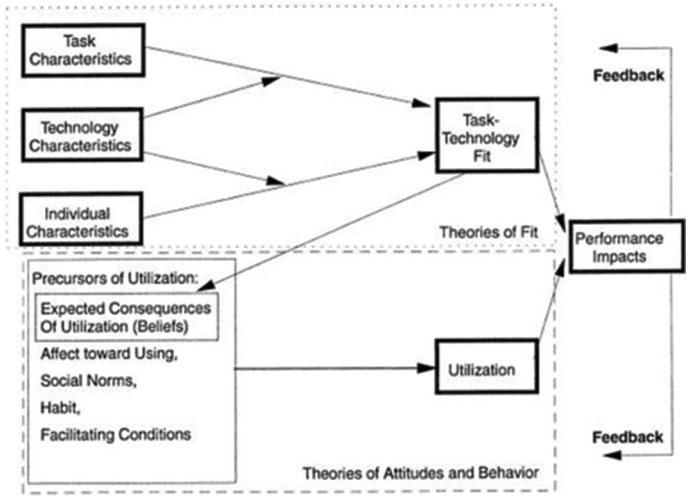
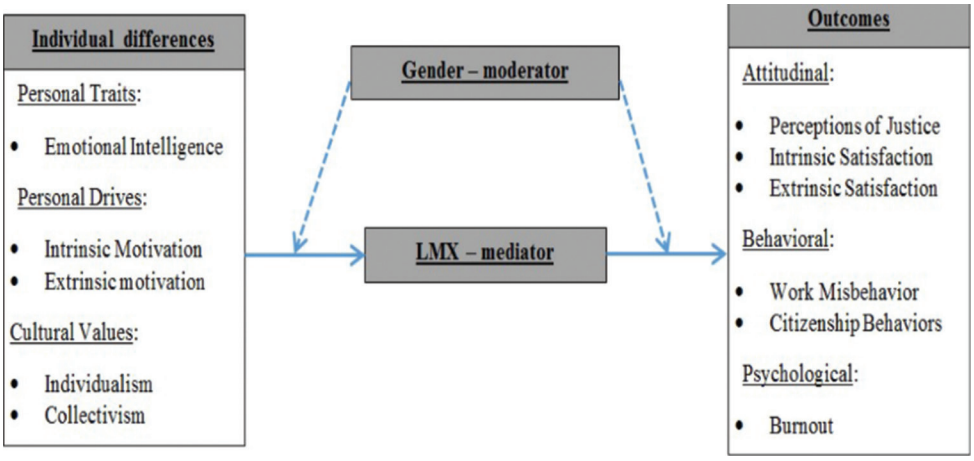


Figure 3: Predictors and outcomes of LMX Model (Tziner et al., 2020)

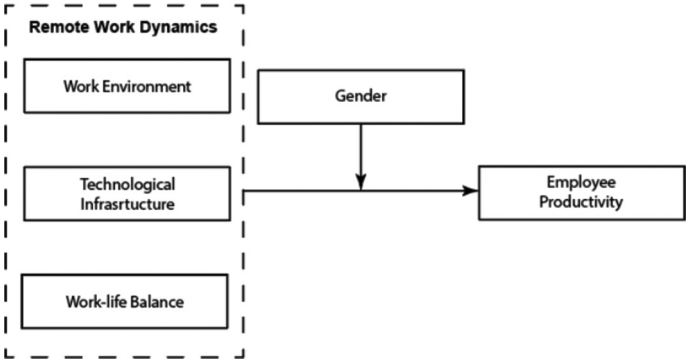


equipment accessibility, and interpersonal interactions (Bloom et al., 2020).

2. Technological infrastructure refers to the availability and quality of digital tools and resources necessary for remote work, such as high-speed internet, communication platforms, and secure data storage (Chen et al., 2020).
3. Work-life balance pertains to employees' ability to effectively manage their professional responsibilities and personal commitments, minimizing conflict and stress (Bartik et al., 2020).
4. Employee productivity reflects the efficiency and effectiveness of individuals' work performance, including task completion, goal attainment, and contributions to organizational objectives (Gajendran and Harrison, 2007).
5. Gender serves as a moderating factor that influences the strength and direction of the relationships between the independent variables (work environment, technological infrastructure, work-life balance) and the dependent variable (employee productivity). Gender differences may lead to variations in experiences, perceptions, and outcomes in remote work settings, necessitating consideration in the analysis (Ibarra et al., 2020).

The conceptual framework of study base on integrated of models as in Figure 4.

Figure 4: Conceptual Framework



Source: Operational model of analysis (Leitão et al., 2019), Task-to-Performance Chain (Goodhue and Thompson, 1995) and Predictors and outcomes of LMX Model (Tziner et al., 2020)

3. RESEARCH METHODOLOGY

This research adopted a quantitative methodology, focusing on precise measurements to elucidate the interrelationships between variables (Salkind and Frey, 2019). The study population consisted of employees from three small-scale semiconductor multinational corporations (MNCs) located in Klang Valley, Malaysia. The selection of this cohort was predicated on its pivotal role as the foremost contributor to Malaysia's GDP, accounting for a substantial 25% (Noh and Rofi, 2024). The semiconductor sector's significance in Malaysia is profound, acting as a catalyst for economic expansion, spurring innovation, generating high-skilled employment opportunities, and fostering a competitive advantage on the global stage.

The determination of the sample size was guided by Krejcie and Morgan's (1970) table. With an estimated total population of 250 employees across these three MNCs, a sample size of 152 was calculated. To mitigate the potential for incomplete responses, a 10% buffer was incorporated, as recommended by Salkind and Frey (2019). Consequently, a total of 167 questionnaires were disseminated. A simple random sampling technique was meticulously chosen to ensure the representation of the diverse experiences of employees at all hierarchical levels within the three semiconductor MNCs.

The primary data collection instrument was a questionnaire utilizing a 5-point Likert Scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). This instrument was developed following the "adopt and adapt" principle, drawing from various sources; Ipsen et al. (2021), Kassar (2023), Hamour et al., (2023), and Martucci (2023). The questionnaire was segmented into three sections: Section A covered the Demographic Profile of the Respondents; Section B addressed the Independent Variables: Work Engagement (WE), Turnover Intention (TI), and Work-Life Balance (WLB); and Section C focused on the Dependent Variable: Employee Performance (EP). Out of the 167 questionnaires distributed to the intended participants, only 130 fully completed questionnaires were returned, with 3 responses removed since they were regarded as outliers. The total response rate for this study is 76.05%. According to the American Association for Public Opinion Research (AAPOR), a response rate of 60 percent falls within the acceptable range (Smith et al., 2015). SPSS and Smart-PLS were used to test the relationship between the mitigating variables.

3.1. Validity and Reliability

According to Amirrudin et al. (2021), reliability analysis can be interpreted using the rule of thumb for strength assessment. A Cronbach's Alpha score between 0.70 and 1.00 for each construct signifies very good reliability (Hair et al., 2017). For the four developed instruments, the Cronbach's Alpha scores, as presented in Table 1, indicate a good fit, falling within the suggested threshold.

4. DATA ANALYSIS

The summary of demographic data is presented in Table 2. The gender distribution reveals a higher number of male employees compared to female employees, underscoring the persistent challenge of gender diversity within the industry. Furthermore, the scarcity of inclusive policies, inadequate maternity leave, and a predominantly male-dominated culture are principal factors contributing to the low female participation in this sector.

In terms of racial composition, Malays represent the highest proportion at 65.4%, aligning with their status as the majority ethnic group in Malaysia. This is followed by Indians at 22%, Chinese at 9.4%, and other races at 3.1%. A significant 59.8% of the workforce falls within the 35-54 age category, reflecting a mature workforce. This demographic is often preferred due to their experience, stability, leadership, mentoring capabilities, and commitment.

Regarding educational attainment, 48.8% of the workforce holds a bachelor's degree, followed by 38.6% with a diploma. The working

Table 1: Construct reliability and validity (n=127)

Variables	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
EP	0.843	0.890	0.895	0.682
TI	0.897	0.942	0.922	0.704
WE	0.851	0.916	0.898	0.689
WLB	0.883	0.922	0.905	0.577

Figure 5: Remote work dynamics structural model

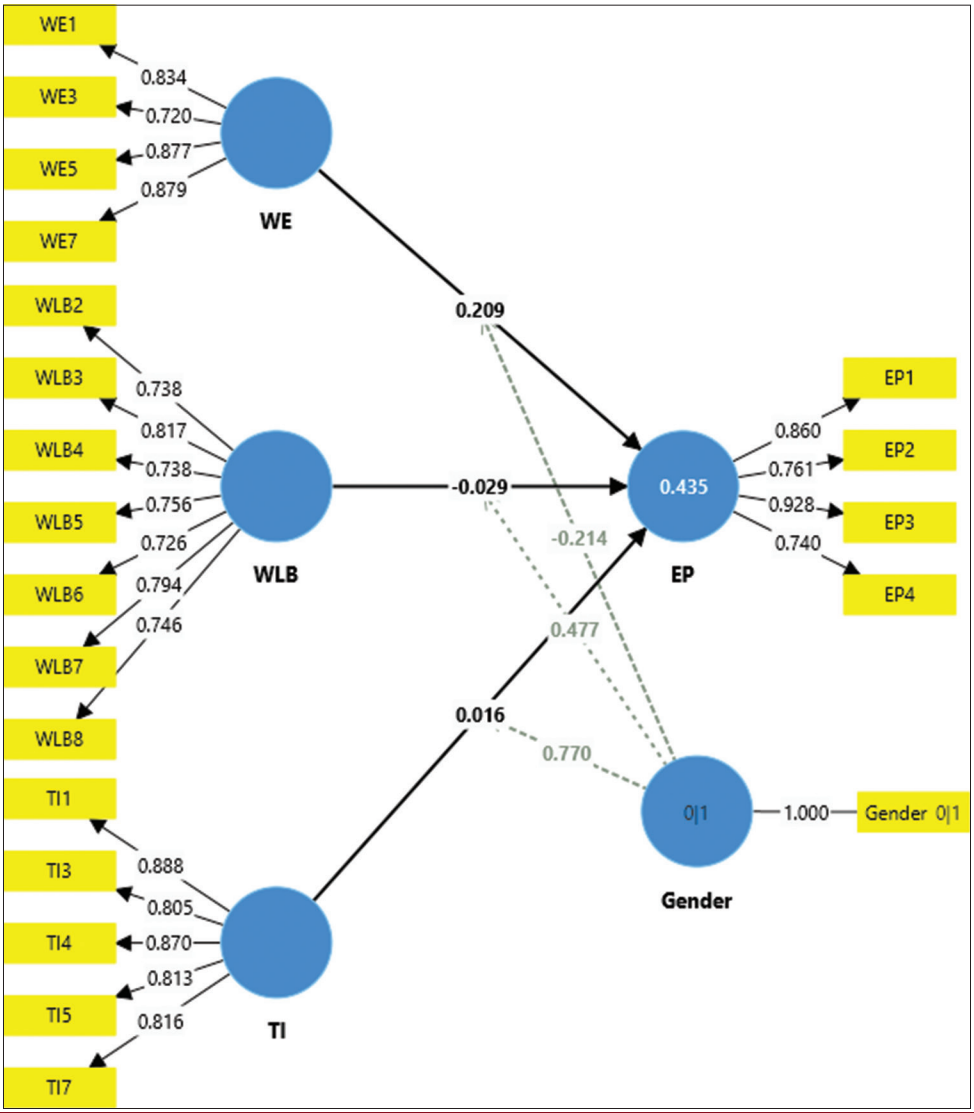


Table 2: Demographic profiling (n=127)

Variables	Frequency	Percentage
Gender		
Male	71	55.9
Female	56	44.1
Race		
Malay	83	65.4
Indian	28	22
Chinese	12	9.4
Others	4	3.1
Age (in years)		
Below 25	6	4.7
26-34	31	24.4
35-45	76	59.8
45-55	14	11
Highest education		
Master	16	12.6
Bachelor	62	48.8
Diploma	49	38.6
Working tenure (in years)		
Below 5	10	7.9
5-10	27	21.3
11-15	46	36.2
Above 16	44	34.6

tenure data indicates that 36.2% of the employees are long-term, with an average of 11-15 years of experience in the industry.

4.1. Exploratory Factor Analysis

To examine RO 1, investigating the relationship between the exogenous latent variables—work environment, technological infrastructure, and work-life balance—and employee productivity (the observed endogenous variable) moderated by gender, the ensuing hypothesis is formulated.

4.1.1. Hypothesis I

Null hypothesis: There exists no significant relationship between the exogenous latent variables of Work Environment, Technological Infrastructure, and Work-Life Balance and the endogenous variable, Employee Productivity, when considering gender as a moderating factor.

To evaluate the outer model (or measurement model) and determine how well the items (questions) load on the hypothetically defined constructs (Ab Hamid et al., 2017), some constructs were deleted, ensuring the factor loadings exceeded the cut-off value of 0.70 (Aibinu and Al-Lawati, 2010). This indicates that the reliability of each item was robust, thereby reinforcing the allocation of each item to its specified latent variables. All results are presented in Tables 3-6.

According to cross-loading analysis, each item must demonstrate higher loadings on its designated parent construct compared to other constructs within the study. If an item exhibits higher loadings on a different construct than its intended parent construct, it signifies issues with discriminant validity (Hair et al., 2010). In this instance, the items exhibit proper discriminant validity. Figure 5 shows the structural model for Remote Work Dynamics Factors with a cutoff point of 0.7, and the path coefficients are presented in Table 5.

Table 3: Outer factor loadings

Variables	EP	TI	WE	WLB
EP1	0.860			
EP2	0.761			
EP3	0.928			
EP4	0.740			
TI1		0.888		
TI3		0.805		
TI4		0.870		
TI5		0.813		
TI7		0.816		
WE1			0.834	
WE3			0.720	
WE5			0.877	
WE7			0.879	
WLB2				0.738
WLB3				0.817
WLB4				0.738
WLB5				0.756
WLB6				0.726
WLB7				0.794
WLB8				0.746

The analysis reveals that, given the $P < 0.01$, the null hypothesis is rejected for the relationships between Gender and Employee Productivity, as well as Gender and Technological Infrastructure to Employee Productivity, at the 1% level of significance. With a $P < 0.05$, the null hypothesis is rejected at the 5% level for the relationship between Gender and Work-Life Balance to Employee Productivity. Conversely, no significant differences are observed between Technological Infrastructure, Work Environment, Work-Life Balance, and Employee Productivity. Additionally, no significant difference is detected between Gender and Work Environment concerning Employee Productivity.

To further scrutinize RO_2, exploring the moderating impact of gender on the overarching relationship among the predictors—namely, work environment, technological infrastructure, work-life balance, and employee productivity—the following hypothesis is formulated.

4.1.2. Hypothesis II

Null hypothesis: There is no significant difference between Male and Female with respect to Factors of Remote Work Dynamics in Semiconductor MNCs in Klang Valley.

Since the $P < 0.01$, the null hypothesis is rejected at the 1% level of significance concerning the variable of work-life balance between male and female employees. Based on the mean rank, male employees have a more favorable opinion of work-life balance perceptions than their female counterparts in the semiconductor industry.

With a $P < 0.05$, the null hypothesis is rejected at the 5% level for the variable of technological infrastructure. The mean scores again indicate that male employees hold a more favorable view of work-life balance perceptions compared to female employees in the semiconductor industry. This disparity may be attributed to traditional gender roles that disproportionately

Table 4: Cross loading for discriminant validity

Variables	EP	Gender	TI	WE	WLB	Gender x WE	Gender x TI	Gender x WLB
EP1	0.86	0.108	0.254	0.18	0.308	0.203	0.479	0.493
EP2	0.761	0.021	0.18	0.152	0.158	0.066	0.42	0.351
EP3	0.928	0.049	0.405	0.219	0.324	0.209	0.599	0.524
EP4	0.74	0.364	−0.076	0.28	0.026	0.157	0.152	0.23
Gender	0.159	1	−0.299	0.021	−0.216	0.017	−0.302	−0.202
TI1	0.231	−0.124	0.888	0.017	0.602	0.052	0.409	0.288
TI3	0.163	−0.286	0.805	−0.074	0.512	0.025	0.431	0.301
TI4	0.287	−0.412	0.87	0.187	0.653	0.243	0.646	0.509
TI5	0.115	−0.195	0.813	0.03	0.474	0.002	0.448	0.239
TI7	0.203	−0.18	0.816	−0.009	0.542	0.126	0.49	0.29
WE1	0.149	0.017	0.032	0.834	0.074	0.548	0.051	0.094
WE3	0.142	0.005	−0.025	0.72	−0.009	0.448	0.114	0.2
WE5	0.276	0.029	0.071	0.877	0.127	0.631	0.172	0.247
WE7	0.219	0.012	0.073	0.879	0.15	0.637	0.175	0.245
WLB2	0.28	−0.285	0.717	0.076	0.738	0.127	0.555	0.49
WLB3	0.272	−0.133	0.475	0.079	0.817	0.186	0.266	0.487
WLB4	0.15	−0.033	0.357	−0.021	0.738	0.108	0.256	0.329
WLB5	0.145	−0.148	0.474	0.178	0.756	0.178	0.304	0.521
WLB6	0.099	−0.138	0.517	0.121	0.726	0.177	0.273	0.391
WLB7	0.183	−0.098	0.477	0.134	0.794	0.221	0.311	0.507
WLB8	0.129	−0.263	0.494	0.09	0.746	0.149	0.26	0.52
Gender x WE	0.204	0.017	0.132	0.694	0.214	1	0.243	0.36
Gender x WLB	0.5	−0.202	0.412	0.248	0.616	0.36	0.696	1
Gender x TI	0.517	−0.302	0.593	0.166	0.445	0.243	1	0.696

Table 5: Representation of work environment, technological infrastructure, and work-life balance variables and gender moderation effects on employee productivity in the semiconductor industry

Variables	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P-values
Gender -> EP	0.689	0.667	0.184	3.750	<0.001**
TI -> EP	0.016	0.024	0.159	0.101	0.920
WE -> EP	0.209	0.223	0.119	1.760	0.078
WLB -> EP	−0.029	−0.009	0.147	0.196	0.845
Gender×WE -> EP	−0.214	−0.219	0.160	1.333	0.182
Gender×TI -> EP	0.770	0.734	0.288	2.676	0.007**
Gender×WLB -> EP	0.477	0.452	0.213	2.236	0.025*

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

Table 6: Mann Whitney U test for significant difference between mean rank between male and female with respect to factors of remote work dynamics in semiconductor MNCs in Klang valley

Variables	Mean rank		Z-score	P-value
	Male	Female		
WE	63.35	64.83	0.228	0.819
TI	70.65	55.56	2.3	0.021*
WLB	74.96	50.11	3.812	<0.001**
EP	65.77	61.76	0.612	0.841

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

assign domestic responsibilities to women, making remote work more challenging for them. Men, conversely, may encounter fewer household interruptions, allowing them to focus more on their work.

However, there is no significant difference between male and female employees regarding the variables of work environment and employee productivity, as the P > 0.05. Thus, the null hypothesis is accepted at the 5% level for these variables, indicating no significant gender-based differences in perceptions of work environment and employee productivity.

5. CONCLUSION

The results indicate that gender-based perception disparities exist regarding technological infrastructure and work-life balance, significantly impacting employee productivity. Both males and females perceive these factors differently, influenced by societal expectations. Men often view remote work as an opportunity for greater work-life integration without a significant increase in domestic responsibilities, while women may experience heightened stress due to overlapping roles, including childcare and household chores. This additional burden can hinder their productivity compared to men. Furthermore, organizational support tends to favor men, inadvertently providing them with more flexibility and support in remote work settings.

The study also highlights significant differences in how males and females perceive the adoption of technological infrastructure for

remote work. Men may feel more comfortable and proficient with the required technology, stemming from historical disparities in education and career paths that have provided men with greater exposure to technology. This perceived proficiency contributes to a smoother and more positive remote work experience for men. Overall, men may perceive themselves as more productive in remote settings, positively influencing their overall perception of remote work dynamics.

Semiconductor MNCs should adopt gender-sensitive strategies in their organizational policies and practices to enhance staff productivity both presently and in the future. Cultivating a work climate that acknowledges and addresses the distinct needs and experiences of male and female employees fosters inclusivity and support, thereby promoting productivity and well-being. Companies should prioritize allocating resources towards gender-responsive initiatives, such as implementing flexible work arrangements, providing caregiver support programs, and offering technology training. These efforts aim to empower all employees to thrive in the evolving work landscape. Moreover, it is imperative for future studies to continue exploring the moderating influence of gender on organizational dynamics, thus offering diverse perspectives on effective approaches to enhancing employee productivity, particularly in remote work settings.

Beside that, the integration of three models - Operational model of analysis (Leitão et al., 2019), Task-to-Performance Chain (Goodhue and Thompson, 1995) and Predictors and outcomes of LMX Model (Tziner et al., 2020) in this study, contributed the Model of Remote Work Dynamics in Semiconductor MNCs.

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