

# Emotional Intelligence as a Moderator: Navigating Work-Family Conflict and Work Engagement in Malaysia's Services Sector

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## Abstract

This study aim examine the interplay between work-family conflict (WFC), emotional intelligence (EI), and work engagement (WE) in Malaysia's service sector. through the lens of the Job Demands-Resources (JD-R) theory. Using a sample of 150 employees from Malaysia's wholesale and retail trade, food and beverage, and accommodation sectors, data were gathered through both online and pen-and-paper surveys and quantitatively analyzed using partial least squares structural equation modeling (PLS-SEM). The findings reveal that work interference with family (WIF) and family interference with work (FIW) negatively impact WE. Notably, EI acts as a buffer against the detrimental effects of WIF on WE but shows no significant moderating effect for FIW. This study enriches the JD-R theory by positioning EI as a vital personal resource, shifting the focus from burnout to work engagement as a critical outcome of job demands. From a practical standpoint, it emphasizes the potential of EI-based strategies to mitigate the adverse effects of WFC and foster employee WE in Malaysia's service sector. By shedding light on the nuanced role of EI, the study offers both theoretical contributions and actionable insights for organizations aiming to enhance workforce resilience and productivity.

**Keywords:** Job Demands, Job Demands-Resources Theory, Work Engagement, Work-Family Conflict, Emotional Intelligence

## Introduction

Work engagement (WE) is a critical factor for organizational success, as it significantly influences performance and productivity (Malik & Garg, 2020). Engaged employees demonstrate higher levels of commitment, effort, and dedication to their job responsibilities (Boonsiritomachai & Sud-On, 2022). They often exceed role expectations, display proactive behavior, and take ownership of their work (Badi *et al.*, 2023). These qualities enhance overall organizational performance and help achieve strategic goals (Soares & Mosquera, 2019). However, recent data reveal a decline in WE levels in Malaysia. For instance, Kincentric Malaysia reported a drop in WE from 70% in 2019 to 67% in 2022, placing Malaysia behind neighboring countries such as India, the Philippines, Indonesia, and Thailand (Business Today,

2023; Qualtrics, 2022). This decline highlights the need to improve WE in the Malaysian context.

At the same time, work-family conflict (WFC) has become a growing issue in Malaysia. Rising inflation and economic pressures have driven an increase in dual-income households, as families strive to meet higher living costs (IPSOS, 2022; Jamaludin *et al.*, 2022). While these households contribute to greater workforce participation, they also lead to role imbalances between work and family responsibilities (Ji & Jung, 2021; Sadiq, 2022). The Malaysian services sector, which accounts for over 50% of the country's GDP, is particularly relevant for studying WFC due to its competitive nature and demanding workloads (DOSM, 2022; Zainal, 2019). This sector often requires employees to prioritize work over family, increasing the likelihood of WFC (Panda *et al.*, 2022). Researchers have shown growing interest in WFC, defined by Greenhaus and Beutell (1985) as a conflict that arises when work and family roles are incompatible (Mumu *et al.*, 2021; Ribeiro *et al.*, 2023).

Existing research consistently indicates a negative relationship between WFC and WE. For example, studies by Ribeiro *et al.* (2023) and Yucel *et al.* (2021) have shown that higher WFC leads to lower WE. Despite this, WE remains a vital motivational factor linked to numerous positive outcomes, including improved job performance, innovation, organizational commitment, and customer satisfaction (Al Badi *et al.*, 2023; Koroglu & Ozmen, 2022; Han *et al.*, 2022). Conversely, a decline in WE is associated with counterproductive work behavior, job withdrawal, and turnover intentions (Bilal *et al.*, 2019; Garg & Singh, 2020; Arokiasamy *et al.*, 2022). Given the significant impact of WFC on WE and the benefits of an engaged workforce, identifying factors that mitigate WFC's negative effects is essential.

Previous studies have explored some moderators of WFC, such as self-evaluation (Peltokorpi & Michel, 2021), resiliency (Balogun & Afolabi, 2020), and self-efficacy (Zhao *et al.*, 2022). However, emotional intelligence (EI) remains underexplored in this context (Zainal *et al.*, 2020). EI, as defined by Salovey and Mayer (1990), refers to the ability to recognize, understand, and manage one's emotions and the emotions of others effectively. This study uses Bakker and Demerouti's (2017) Job Demands-Resources (JD-R) theory to examine whether EI moderates the relationship between WFC and WE. By incorporating EI as a personal resource, this study extends the JD-R framework and shifts the focus from burnout, a commonly studied outcome of WFC, to WE.

This study contributes to the literature on WFC and WE by addressing existing research gaps. It also provides practical insights for managers in the Malaysian services sector, emphasizing the importance of EI in mitigating WFC's negative effects and enhancing WE. These findings offer actionable strategies for fostering a more engaged and resilient workforce in a competitive industry. The subsequent sections discuss the underpinning theory of this study, the concepts of WE, WFC and EI, and the development of hypotheses.

## **Review of Literature**

### *Job Demands-Resources Theory*

The Job Demands-Resources (JD-R) theory provides a comprehensive framework for understanding how job characteristics influence employee well-being and performance

(Bakker *et al.*, 2023). It focuses on two key aspects: job demands and job resources. Job demands refer to work-related factors that require effort and are linked to physical and psychological stress, while job resources are factors that help employees manage challenges and support their growth (Bakker *et al.*, 2023). Personal resources, such as self-confidence and resilience, are also important and reflect employees' perceptions of their ability to manage and influence their environment effectively (Bakker *et al.*, 2023). Employees who feel in control of their environment are better equipped to handle job demands. The JD-R theory further proposes two processes: the health-impairment process, where excessive job demands lead to stress and burnout, and the motivational process, where job resources enhance WE through intrinsic and extrinsic motivation (Bakker & Demerouti, 2017). While job resources boost motivation and engagement, prolonged exposure to job demands without adequate resources can result in burnout. This study draws on the JD-R theory to examine WFC as a job demand and EI as a personal resource that may influence WE among employees in Malaysia's service sector.

### *Work Engagement*

The concept of engagement was introduced by William Kahn (1990), who described it as employees' physical and emotional investment in their roles. Schaufeli *et al.* (2002) later defined WE as a positive, fulfilling work-related state characterized by vigor, dedication, and absorption. Vigor refers to energy and persistence in work; dedication includes a sense of purpose and pride; and absorption involves deep focus and enjoyment of tasks (Schaufeli *et al.*, 2002). WE has been associated with several positive outcomes, including high job performance, innovation, organizational commitment, and customer satisfaction (e.g., Al Badi *et al.*, 2023; Han *et al.*, 2022). Conversely, reduced WE has been linked to counterproductive behaviors, job withdrawal, and turnover intentions (e.g., Garg & Singh, 2020; Arokiasamy *et al.*, 2022). Positive work environment is deemed to promote greater work engagement as asserted by Hassan *et al.* (2022). Indeed, studies have identified various factors that enhance WE, such as self-efficacy, organizational support, social support, autonomy, and feedback (e.g., Azim & Al-Halawani, 2020; Lee *et al.*, 2019). However, researchers have also examined the impact of negative factors on WE. For example, Oliveira and Najnudel (2022) found that abusive leadership negatively influenced the WE of 172 Brazilian workers from various economic sectors. Similarly, Wang and Shi (2022) reported that work-leisure conflict reduced WE among 521 frontline employees in service and manufacturing companies in China. Zhang *et al.* (2021) investigated the effects of perceived job stress and workload, revealing that these factors negatively impacted the WE of 1,040 nurses in Wuhan, China. Despite this, WFC has been frequently studied in relation to burnout but rarely in connection to WE. Therefore, this study aims to address this research gap.

### *Work-Family Conflict*

Work-family conflict (WFC) arises when the demands of work and family roles clash, making them incompatible (Greenhaus & Beutell, 1985). WFC can take three forms: time-based conflict, where work demands interfere with family time; strain-based conflict, where work-related stress affects family responsibilities; and behavior-based conflict, where behaviors required at work conflict with those needed at home. Later research also identified WFC as bidirectional: work interference with family (WIF) and family interference with work (FIW) (Netemeyer *et al.*, 1996). WIF occurs when work demands hinder family responsibilities, while FIW arises when family obligations disrupt work performance. WFC has been widely studied

across various contexts, including during the COVID-19 pandemic, which increased remote work and highlighted challenges in balancing work and family roles (e.g., Darouei & Pluut, 2021; Ghislieri *et al.*, 2021). Recent research emphasizes the negative effects of WFC on employee performance and well-being, as well as the role of organizational support in reducing its impact (Pascucci *et al.*, 2022). Despite these insights, there is a need to explore factors that can buffer the negative effects of WFC on outcomes like WE.

### *Emotional Intelligence*

Emotional intelligence (EI) is the ability to recognize, understand, and manage one's emotions and the emotions of others (Salovey & Mayer, 1990). EI has been linked to improved stress management, organizational commitment, job satisfaction, and performance (e.g., Sahoo & Sia, 2015; Nasir *et al.*, 2023). Employees with high EI are better equipped to navigate interpersonal challenges and maintain emotional balance Takong *et al.* (2021), making EI a valuable personal resource. Although EI has been extensively studied, its role within the JD-R framework remains underexplored. Studies by Bakker and De Vries (2020) and Mérida-López and Extremera (2020) suggest that EI can function as a personal resource, enhancing employees' ability to manage job demands. This study builds on these findings to examine EI as a moderator in the relationship between WFC (WIF and FIW) and WE, contributing to both theoretical and practical insights. The following section discusses the relationship between WIF and FIW, and WE, followed by the moderating role of EI that forms the basis for the subsequent development of hypotheses.

## **Hypothesis Development**

### *Work-Family Conflict and Work Engagement*

The Job Demands-Resources (JD-R) theory explains how prolonged physical, cognitive, or emotional demands in the workplace can lead to exhaustion through the health-impairment process (Bakker & Demerouti, 2017). Work-family conflict (WFC), which includes time-based, strain-based, and behavior-based conflicts (Netemeyer *et al.*, 1996), depletes time, energy, and focus as individuals try to balance competing responsibilities at work and home (Galletta *et al.*, 2019). This study conceptualizes WFC as a job demand that negatively impacts work engagement (WE).

Previous studies have consistently shown that WFC reduces WE. For instance, Opie and Henn (2013) found that WIF negatively affected the WE of 267 working mothers. Similarly, Yucel *et al.* (2021) demonstrated a negative relationship between WIF and WE among 350 healthcare professionals. King (2018) also observed a negative relationship between WIF and WE among 154 caregivers in the United States. In addition, Li *et al.* (2019) discovered that FIW increased stress and decreased WE among 514 Hong Kong police officers. Galanti *et al.* (2021) found similar results, reporting that FIW increased stress and reduced WE among 209 employees in Italian organizations.

Other studies have examined both WIF and FIW. Karatepe and Karadas (2016) found that Romanian frontline hotel employees experienced lower WE when facing WFC. Islam *et al.* (2019) highlighted how the demanding nature of police work drained energy, making it harder for 343 male officers in Punjab to balance work and family responsibilities, negatively impacting WE. Park *et al.* (2021) showed that WFC reduced WE among South Korean workers,

while Ribeiro *et al.* (2023) found that employees with higher WFC were less engaged and more likely to leave their jobs. Şahin and Yozgat (2021) and Yang *et al.* (2021) also reported negative relationships between WFC and WE among Turkish healthcare employees and Chinese school principals, respectively. These findings align with the JD-R theory, which suggests that job demands trigger the health-impairment process, reducing employee well-being. Based on these findings, this study hypothesizes:

*H1: WIF is negatively related to WE.*

*H2: FIW is negatively related to WE.*

#### *Moderating Role of Emotional Intelligence*

The JD-R theory highlights personal resources as protective factors that mitigate the adverse effects of job demands on employee strain (Bakker & Demerouti, 2017). Personal resources refer to individuals' beliefs about their ability to control and influence their environment (Bakker *et al.*, 2023). EI is considered a personal resource, involving the ability to recognize and regulate one's emotions and those of others (Salovey & Grewal, 2005; Wong & Law, 2002). Studies suggest that individuals with high EI are better at managing stressful situations, including work-family conflicts, by controlling their emotional and behavioral responses (Gao *et al.*, 2013).

Research supports the buffering role of EI in various stressful contexts. For example, Sadovyy *et al.* (2021) found that EI reduced the impact of COVID-19-related stress on job performance among 1,048 Spanish professionals. Akhlaghimofrad and Farmanesh (2021) demonstrated that EI moderated the relationship between interpersonal conflict and turnover intentions among 200 university faculty members in Northern Cyprus. Similarly, Kundi *et al.* (2023) reported that employees with high EI were less likely to engage in counterproductive behaviors despite experiencing interpersonal conflict.

Specifically, EI has been shown to buffer the effects of WFC. Balogun and Afolabi (2021) found that Nigerian bank employees with higher EI and resilience experienced less burnout from both WIF and FIW. Chakravorty and Singh (2020) observed similar results among primary school teachers in India, where higher EI reduced burnout despite high levels of WFC. Drawing on these findings, this study hypothesizes:

*H3: EI moderates the relationship between WIF and WE.*

*H4: EI moderates the relationship between FIW and WE.*

#### **Conceptual Framework**

This study investigates the impact of WIF and FIW on WE, as represented by the relationships hypothesized in H1 and H2. The link between those WFCs and WE is based on the Job Demands-Resources (JD-R) theory, which suggests that job demands activate the health-impairment process, leading to strain or burnout. Although the theory does not explicitly state that job demands reduce WE, burnout is considered the opposite of WE (Maslach *et al.*, 2001). Therefore, it is reasonable to assume that job demands, such as WFC, negatively affect WE. Additionally, the study examines the moderating role of EI on the relationship between WIF, FIW, and WE, as depicted in hypotheses H3 and H4. This is based on the JD-R theory, which proposes that personal resources, similar to job resources, can buffer the negative effects of

job demands. Consequently, it is expected that EI moderates the impact of both WIF and FIW on WE, reducing the detrimental effects of these conflicts on engagement. The conceptual framework is visually depicted in Figure 1 below.

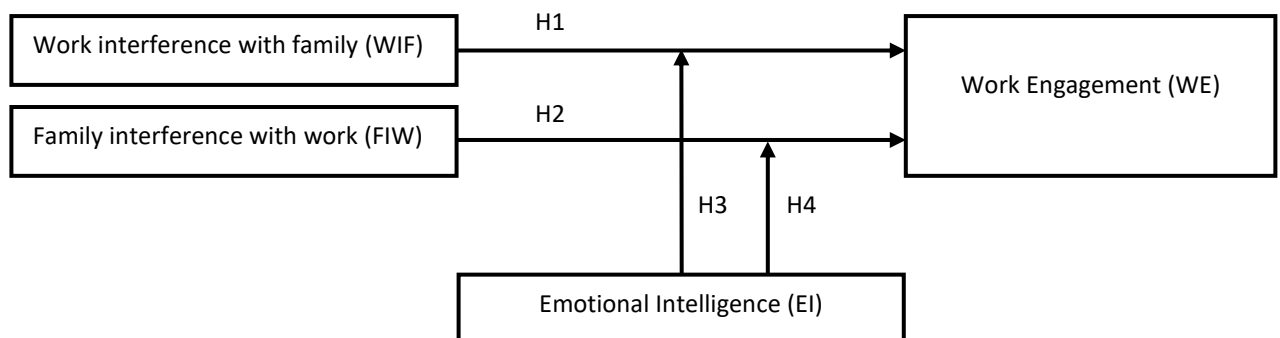


Figure 1. Proposed conceptual framework

Source: Authors (2024).

## Research Methodology

### *Participant and Data Collection*

Data is collected through both pen-and-paper and online surveys distributed to employees in the services sector in Klang Valley, Malaysia. The focus is on the wholesale and retail trade, food and beverage, and accommodation industries, as these subsectors account for over three-quarters of employment in the services sector (DOSM, 2022). This sample is considered a suitable representation of the Malaysian services sector. Klang Valley is chosen because it significantly contributes to the sector, representing 25.9% and 24.8% of the services sector in Selangor and Kuala Lumpur, respectively (DOSM, 2022). Additionally, Klang Valley is one of the most densely populated urban areas in Malaysia, surpassing other major cities such as Penang and Johor Bahru (Cai *et al.*, 2021).

To minimize common method variance, researchers include several strategies recommended by Podsakoff *et al.* (2012). The introductory page of the questionnaire clearly states that there are no right or wrong answers, assures participants of the confidentiality of their responses, emphasizes the voluntary nature of participation, and highlights the support of their organizations. To ensure anonymity, participants place completed surveys in sealed envelopes, which are collected and opened only by authorized researchers.

This study adopts a non-random sampling method as a comprehensive list of the target population, or sampling frame were unavailable as suggested by Saunders *et al.* (2019). A purposive sampling approach were used to select employees from the wholesale and retail trade, food and beverage, and accommodation sectors with at least six month of service length. Lists of relevant organizations were obtained from the Malaysia Retailers Association (MRA), Malaysia Retailers Chain Association (MRCA), and the Ministry of Tourism and Culture (MOTAC), as these associations cover a broad range of establishments in retail, wholesale, accommodation, and food and beverage services. From these lists, a random selection of organizations in Klang Valley were made for each category, and survey invitations sent via email to the selected organizations.

The required sample size was calculated using G\*Power software version 3.1.9.6 (Faul *et al.*, 2007), which determined that a minimum of 129 responses was needed. To account for an anticipated response rate of 35%, typical in business research (Saunders *et al.*, 2019), a total of 370 surveys were distributed. Survey packages were hand-delivered to organizations that accepted the invitation, while those requesting an online survey received a link via email. The human resource departments of participating organizations distributed the questionnaires to eligible employees, including non-executives, executives, and managers. Participants had two weeks to complete the survey, after which the researchers collected the sealed envelopes containing completed questionnaires. Responses from online participants were automatically captured in a spreadsheet. Data collection took place between February 2024 and May 2024.

Of the 370 questionnaires distributed, 150 valid responses were obtained, representing a 40.5% response rate after excluding incomplete or invalid submissions. Among the 150 participants, 64% were male and 36% female. The majority of respondents were aged 31–40 years (42%), followed by 21–30 years (26.7%), 41–50 years (23.3%), and over 50 years (8%). In terms of ethnicity, most identified as Malay (75.3%), with smaller proportions identifying as Chinese (15.3%), Indian (6.7%), and other ethnicities (2.7%). Regarding marital status, 80.7% were married, 14% were single, 4% were divorced or separated, and 1.3% were widowed. The largest subsector represented was Retail and Wholesale (54%), followed by Food and Beverage (25.3%) and Accommodation (20.7%). Family size varied, with 20% of respondents having no children, 29.3% having one child, 23.3% having two children, and the remainder having three or more children. Respondents' length of service ranged from 6–10 years (44%) and 1–5 years (36.3%) to over 10 years (12%) and less than a year (8%). The majority held non-executive roles (44.7%), followed by executives (29.3%), first-line managers (21.3%), and middle-line managers (4.7%). Regarding educational qualifications, 2% held Master's degrees, 26.7% had Bachelor's degrees, 46.7% held Diplomas, 14.7% completed STPM or equivalent, and 11.7% held lower-level certifications. The demographic profile is summarized in Table 1.

Table 1  
*Respondent's Demographic Profiles*

Characteristics	Information	Frequency (n)	Percentage (%)
<i>Gender</i>	Male	94	64.0
	Female	56	36.0
<i>Age</i>	21 – 30	40	26.7
	31 – 40	63	42.0
	41 – 50	35	23.3
	More than 50	12	8.0
<i>Race</i>	Malay	113	75.3
	Chinese	23	15.3
	Indian	10	6.7
	Others	4	2.7
<i>Marital Status</i>	Single	21	14.0
	Married	121	80.70
	Divorced / Separated	6	4.0
	Widowed	2	1.3
<i>Services Subsector</i>	Retail and Wholesale	81	54.0
	Food and Beverage	38	25.3
	Accommodation	31	20.7

<i>Number of children</i>	0	30	20.0
	1	44	29.3
	2	35	23.3
	3	26	17.3
	4	12	8.0
	5 or more	3	2.0
<i>Length of services</i>	More than 6 months but less than 1 year	12	8.0
	1 – 5 years	54	36.3
	6 – 10 years	66	44.0
	More than 10 years	18	12.0
<i>Position</i>	Non-executive	67	44.7
	Executive	44	29.3
	First-line manager	32	21.3
	Middle-line manager	7	4.7
<i>Academic Qualification</i>	Master's degree	3	2.0
	Bachelor's degree	40	26.7
	Diploma	70	46.7
	STPM or equivalent	22	14.7
	SPM or equivalent	10	6.7
	Certificate	5	3.3

Source: Author (2024)

#### *Questionnaire and Measurements*

The questionnaire used in this study was initially developed in English, with a Bahasa Malaysia translation provided to ensure comprehension among respondents. The variables were measured using validated scales from prior research, all of which demonstrated good reliability, with Cronbach's Alpha values exceeding 0.70 (Sekaran & Bougie, 2016). To enhance the measurement precision, the scales were standardized to a seven-point Likert format. This decision was guided by Allen and Seaman's (2007) recommendation to use a minimum of five response categories in Likert scales, often extended to seven to provide a broader range of response options, thereby capturing finer distinctions in participants' attitudes and perceptions.

*Work-Family Conflict (WFC)* is measured using the Work-Family Conflict Scale developed by Carlson, Kacmar, and Williams (2000). This scale consists of 18 items across six dimensions, with each dimension represented by three items. Time-based WIF is assessed through items like, "The time I must devote to my job keeps me from participating equally in household responsibilities and activities." Time-based FIW includes items such as, "The time I spend with my family often causes me not to spend time in activities at work that could be helpful to my career." Strain-based WIF is evaluated using items like, "I am often so emotionally drained when I get home from work that it prevents me from contributing to my family." Similarly, strain-based FIW is measured through items like, "Because I am often stressed from family responsibilities, I have a hard time concentrating on my work." Behavior-based WIF is assessed using items such as, "Behavior that is effective and necessary for me at home would be counterproductive at work." The scale has demonstrated strong reliability in previous studies, with reported Cronbach's alpha values of 0.91 for WIF and 0.82 for FIW (e.g., Brenning *et al.*, 2020). Participants rated their WFC on a seven-point Likert scale ranging from "1 = Strongly disagree" to "7 = Strongly agree."



*Work Engagement (WE)* is measured using the Utrecht Work Engagement Scale (UWES) developed by Schaufeli *et al.* (2002). The UWES consists of 17 items divided into three dimensions: vigor, dedication, and absorption. Vigor is measured using six items, such as, "At my work, I feel that I am bursting with energy." Dedication is assessed through five items, including, "I find the work that I do full of meaning and purpose." Absorption is measured using six items, such as, "It is difficult to detach myself from my job." The scale has consistently shown high reliability, with Cronbach's alpha values exceeding 0.70 reported in prior studies (e.g., Lim *et al.*, 2024; Tomietto *et al.*, 2019). Responses were recorded on a seven-point scale ranging from "1 = Never" to "7 = Always."

*Emotional Intelligence (EI)* is measured using the Wong and Law Emotional Intelligence Scale (WLEIS) developed by Wong and Law (2002). This scale is based on Salovey and Mayer's (1990) model of EI and includes four domains: self-emotional appraisal (SEA), others' emotional appraisal (OEA), regulation of emotion (ROE), and use of emotion (UOE). SEA is measured through items like, "I have a good understanding of my own emotions." OEA includes items such as, "I can always tell how my friends are feeling based on their behavior." ROE is assessed with items like, "I can quickly calm down when I am very angry." UOE is measured using items such as, "I am a self-motivating person. The WLEIS has demonstrated strong reliability in previous studies, with Cronbach's alpha values ranging from 0.88 to 0.91 (e.g., Gao *et al.*, 2013). All responses were recorded on a seven-point scale ranging from "1 = Strongly disagree" to "7 = Strongly agree."

## Results

### *Common Method Variance Assessment*

Common method variance (CMV) is a potential issue in behavioral research, as it arises when measurement methods influence responses more than the actual constructs being studied, potentially causing bias or inflated results (Podsakoff *et al.*, 2003). To assess the presence of CMV in this study, Harman's single-factor test was conducted, a method that examines whether a single factor accounts for the majority of variance in the data (Podsakoff *et al.*, 2003). According to Podsakoff and Organ (1986), CMV is a concern if a single factor explains more than 50% of the variance. Using SPSS software (version 29.0) with an unrotated factor solution, the analysis revealed that the single factor accounted for 32.66% of the variance, which is well below the 50% threshold. This finding suggests that CMV is not a significant issue in this study, allowing the researcher to proceed with the partial least squares structural equation modeling (PLS-SEM) analysis using SmartPLS software version 4 by Ringle *et al.* (2024).

### *Measurement Model Assessment*

The first step in assessing PLS-SEM is to evaluate the measurement model by examining indicator reliability, internal consistency, convergent validity, and discriminant validity (Hair *et al.*, 2022). Indicator reliability is assessed through indicator loadings, which measure how much of an indicator's variance is explained by its construct. A recommended loading of 0.708 or higher indicates that the construct explains over 50% of the indicator's variance (Hair *et al.*, 2022). In the initial analysis, three items (D5, A4, and A6) had loadings below the recommended threshold, suggesting potential deletion. However, since the average variance extracted (AVE) for all constructs exceeded 0.50 and no item had a loading below the

mandatory deletion threshold of 0.40 (Hair *et al.*, 2022), all items were retained. Internal consistency was evaluated using composite reliability (CR), with CR values for the constructs WIF, FIW, UOE, SEA, OEA, ROE, Absorption, Dedication, and Vigor ranging from 0.841 to 0.946, indicating strong internal consistency. Cronbach's alpha, an alternative measure of internal consistency, produced values between 0.829 and 0.945, further confirming the reliability of the constructs (Hair *et al.*, 2022). Convergent validity (CV) assesses whether indicators within a construct are positively correlated. It is evaluated using the AVE, where a value of 0.50 or higher indicates that the construct explains at least 50% of the variance in its indicators (Hair *et al.*, 2022). In this study, all constructs achieved CV, with AVE values exceeding 0.50. Details of item loadings, Cronbach's alpha, CR, and AVE are presented in Table 2. Discriminant validity (DV) ensures that constructs are distinct from one another. It was assessed using the heterotrait-monotrait (HTMT) ratio of correlations, where an HTMT value below 0.90 indicates discriminant validity, while values above 0.90 suggest a lack of distinction (Henseler *et al.*, 2015). In this study, all HTMT values were below 0.85, confirming clear distinctions between constructs. These results are summarized in Table 3.

Table 2

*Items Loading, Composite Reliability and Average Variance Extracted*

Construct	Items	Loadings	Cronbach's alpha	CR	AVE
Work interference with family (WIF)	WIF1	0.788	0.939	0.949	0.673
	WIF2	0.838			
	WIF3	0.808			
	WIF4	0.822			
	WIF5	0.877			
	WIF6	0.846			
	WIF7	0.779			
	WIF8	0.830			
	WIF9	0.789			
Family interference with work (FIW)	FIW1	0.857	0.945	0.953	0.694
	FIW2	0.815			
	FIW3	0.784			
	FIW4	0.815			
	FIW5	0.841			
	FIW6	0.814			
	FIW7	0.836			
	FIW8	0.873			
	FIW9	0.855			
Vigor	V1	0.813	0.879	0.908	0.622
	V2	0.816			
	V3	0.816			
	V4	0.758			
	V5	0.759			
	V6	0.768			
Dedication	D1	0.813	0.842	0.888	0.618
	D2	0.802			
	D3	0.841			
	D4	0.854			
	D5	0.591			
Absorption	A1	0.791	0.829	0.875	0.540
	A2	0.793			

	A3	0.787			
	A4	0.644			
	A5	0.717			
	A6	0.662			
Others' emotional appraisal (OEA)	OEA1	0.881	0.918	0.918	0.802
	OEA2	0.899			
	OEA3	0.902			
	OEA4	0.900			
Self-emotional appraisal (SEA)	SEA1	0.888	0.918	0.920	0.802
	SEA2	0.891			
	SEA3	0.900			
	SEA4	0.903			
Regulation of emotion (ROE)	ROE1	0.855	0.895	0.898	0.762
	ROE2	0.901			
	ROE3	0.902			
	ROE4	0.830			
Use of emotion (UOE)	UOE1	0.908	0.927	0.933	0.820
	UOE2	0.901			
	UOE3	0.896			
	UOE4	0.915			

Notes: CR (Composite reliability); AVE (average variance extracted).

Table 3  
Heterotrait-Monotrait Ratio (HTMT) Matrix

	Absorption	Dedication	FIW	OEA	ROE	SEA	UOE	Vigor	WIF
Absorption									
Dedication	0.791								
FIW	0.550	0.500							
OEA	0.523	0.446	0.073						
ROE	0.541	0.518	0.057	0.623					
SEA	0.529	0.498	0.081	0.631	0.807				
UOE	0.515	0.553	0.157	0.499	0.686	0.647			
Vigor	0.839	0.688	0.592	0.450	0.525	0.490	0.579		
WIF	0.603	0.446	0.609	0.084	0.067	0.080	0.210	0.553	

Notes: FIW (family interference with work), WE (work engagement), WIF (work interference with family), SEA (self-emotional appraisal), OEA (others' emotional appraisal), ROE (regulation of emotion), and UOE (use of emotion). HTMT criterion < 0.850

*Assessment of Higher Order Construct.* This study examined overall EI and WE without delving into how WIF and FIW impact specific aspects of WE (i.e., vigor, dedication, and absorption) or how individual dimensions of EI (i.e., SEA, OEA, ROE, and UOE) moderate these effects. Consequently, EI and WE were treated as single multidimensional constructs. To simplify the model and maintain clarity, WE was analyzed as a higher-order construct (HOC), following the recommendations of Hair *et al.* (2022). Consistent with studies like Ullah, Akhter, Aziz, and Islam (2023) and Lim *et al.* (2024), EI and WE were specified as reflective-formative constructs and assessed using the two-stage approach proposed by Sarstedt *et al.* (2019). In the first stage, the lower-order constructs (LOCs) were evaluated using the reflective measurement model, as previously described. In the second stage, the HOC was assessed using the formative measurement model, focusing on convergent validity, collinearity, indicator

weights, and significance. Convergent validity was assessed with a single global item, as recommended by Cheah *et al.* (2018). A single-item construct in redundancy analysis is designed to encapsulate the core essence of the construct rather than capturing all its dimensions (Hair *et al.*, 2017). For WE, the developed single-item measure was: “Overall, I feel energetic, dedicated, and immersed in my job.” For EI, the developed single-item was: “Overall, I am able to understand my own and others’ emotions, manage them, and use them effectively.” Redundancy analysis produced path coefficients of 0.815 for WE and 0.807 for EI, both exceeding the 0.708 threshold (Hair *et al.*, 2022), confirming convergent validity. Collinearity was evaluated, with variance inflation factor (VIF) values ranging from 1.623 to 2.619, well below the threshold of 5.0 (Hair *et al.*, 2022), indicating no significant collinearity issues. Indicator weights and significance were tested using bootstrapping with 5,000 subsamples (Cheah *et al.*, 2018). As shown in Table 4, two EI dimensions (ROE and SEA) were not statistically significant ( $p > 0.050$ ) but were retained to represent the full EI construct. Meanwhile, all three dimensions of WE—absorption, dedication, and vigor—were statistically significant ( $p < 0.050$ ) in influencing WE.

Table 4

*Assessment of Higher Order Construct*

HOC	LOC	CV	Outer VIF	Outer Weight	Std. Error	t-value	p-value
Work engagement	Absorption	0.815	2.582	0.343	0.166	3.793	0.000
	Dedication		1.964	0.284	0.151	3.716	0.000
	Vigor		2.220	0.499	0.144	6.662	0.000
Emotional intelligence	OEA	0.807	1.623	0.291	0.119	2.452	0.007
	ROE		2.619	0.243	0.163	1.487	<b>0.069</b>
	SEA		2.422	0.149	0.162	0.923	<b>0.178</b>
	UOE		1.794	0.514	0.115	4.460	0.000

Notes: HOC (Higher order construct), LOC (Lower order construct), CV (Convergent validity), SEA (self-emotional appraisal), OEA (others' emotional appraisal), ROE (regulation of emotion), and UOE (use of emotion).

*Structural Model Assessment*

After confirming the reliability and validity of the construct measures, the next step was to evaluate the structural model's predictive capability and the relationships between constructs (Hair *et al.*, 2022). Collinearity was assessed by examining the variance inflation factor (VIF) values for the predictor constructs. Collinearity is considered problematic if VIF values exceed 5.00 (Hair *et al.*, 2022). In this study, VIF values for WIF, FIW, and EI were 1.538, 1.524, and 1.142, respectively, indicating that collinearity was not an issue. The model's predictive accuracy was then evaluated using the coefficient of determination ( $R^2$ ). In social sciences,  $R^2$  values of 0.750, 0.500, and 0.250 are categorized as substantial, moderate, and weak, respectively (Hair *et al.*, 2022). WE in this study had an  $R^2$  value of 0.727, reflecting moderate explanatory power. The effect size ( $f^2$ ) was also calculated to assess the individual impact of each construct. According to Cohen (1988),  $f^2$  values of 0.350, 0.150, and 0.020 are considered substantial, medium, and trivial, respectively. Results indicated that WIF had a medium effect ( $f^2 = 0.172$ ) and FIW had a substantial effect ( $f^2 = 0.399$ ) on WE. The model's predictive relevance was assessed using Stone-Geisser's  $Q^2$  value (Geisser, 1974; Stone, 1974). A  $Q^2$  value greater than zero for a specific reflective endogenous latent variable indicates predictive relevance (Chin, 1998). Using the blindfolding method in SmartPLS, the  $Q^2$  value for WE was 0.550, confirming the model's predictive relevance. Finally, hypotheses were

tested using the bootstrapping method with 5,000 resamples to calculate path coefficients and their significance. For H1 and H2, a one-tailed test with a critical t-value of 1.645 ( $p < 0.05$ ) was applied. Results showed a statistically significant negative relationship between WIF and WE ( $\beta = -0.264$ ,  $t = 4.062$ ,  $p < 0.001$ ), supporting H1. Similarly, FIW had a significant negative effect on WE ( $\beta = -0.400$ ,  $t = 7.547$ ,  $p < 0.001$ ), supporting H2. A summary of the structural model assessment results is provided in Table 4.

Table 4  
*Result of Structural Path Model*

Path Relationship	Std. Beta	Std. Error	Confidence Interval	t-value	p-value	VIF	$f^2$	R <sup>2</sup>	Q <sup>2</sup>
H1) WIF → WE	-0.264	0.065	(-0.361, 0.150)	-4.062	0.000	1.538	0.172	0.727	0.550
H2) FIW → WE	-0.400	0.053	(-0.489 -0.313)	7.547	0.000	1.524	0.399		

Notes: WIF (work interfere with family), FIW (family interfere with work), WE (work engagement).

The moderating effect of EI was tested using the bootstrapping technique with 5,000 subsamples. As shown in Table 5, the results indicate that EI significantly moderates the relationship between WIF and WE ( $\beta = 0.153$ ,  $t = 3.253$ ,  $p < 0.001$ ), supporting H3. However, the moderating effect of EI on the relationship between FIW and WE was not significant ( $\beta = 0.005$ ,  $t = 0.086$ ,  $p = 0.466$ ), which does not support H4.

Table 5  
*Assessment of Moderating Effect*

Path Coefficient	Std. Beta	Std. Error	Confidence interval	t-value	p-value
H3) EI * WIF → WE	0.153	0.047	(0.058, 0.162)	3.253	0.001
H4) EI * FIW → WE	0.005	0.060	(-0.078, 0.038)	0.086	0.466

Notes: EI (Emotional Intelligence), FIW (Family interfere with work), WE (Work engagement), WIF (Work interfere with family).

## Discussion and Conclusions

This study confirms Hypothesis 1 (H1), which proposed that WIF negatively impacts WE. As shown in Table 4, the findings demonstrate a significant negative relationship between WIF and WE among employees in the services sector in Klang Valley, Malaysia. These results are consistent with previous studies, such as Yucel, Şirin, and Baş (2021). Similarly, Hypothesis 2 (H2) suggested that family interference with work (FIW) is negatively related to WE. The results also support this hypothesis, revealing an inverse relationship between FIW and WE, aligning with earlier findings from King (2018), Li, Cheung, and Sun (2019), and Şahin and Yozgat (2021). These findings are in line with the JD-R theory, which posits that job demands, such as WFC, can activate the health-impairment process, leading to strain or burnout (Bakker & Demerouti, 2017). Although this study does not directly investigate burnout, it supports Maslach *et al.*'s (2001) assertion that WE counteracts burnout, explaining the inverse relationship between work-family conflict and work engagement.

The results for Hypothesis 3 (H3) show that EI moderates the relationship between WIF and WE. Consistent with the JD-R theory, which suggests that personal resources help individuals manage stress and maintain engagement (Bakker & Demerouti, 2017), the findings indicate that employees with higher EI are better equipped to regulate their emotions and manage the challenges of balancing work and family demands. This ability enhances their work engagement even when work interferes with family life. These results are supported by previous research, such as Bhatti and Batool (2024) and Chakravorty and Singh (2020), which highlight the moderating role of EI in mitigating the effects of WIF. However, Hypothesis 4 (H4), which proposed that EI moderates the relationship between FIW and WE, was not supported. This finding contrasts with earlier studies, such as those by Chakravorty and Singh (2020) and Kengatharan and Kunatilakam (2020), which found EI to buffer the effects of both WIF and FIW. A possible explanation lies in the collectivist culture of Malaysia, where family is highly valued and prioritized over work (Hofstede *et al.*, 2010). In such a context, employees may focus directly on resolving family-related issues rather than leveraging EI to manage their work outcomes. As suggested by Gunkel *et al.* (2016), loyalty to family often takes precedence over personal achievement. Consequently, EI may have limited effectiveness in mitigating the impact of FIW on WE, as employees prioritize addressing family concerns over maintaining work engagement.

#### *Theoretical and Practical Implications*

This study contributes to the literature by examining the direct impact of WIF and FIW on WE, a relatively underexplored area in the context of work-family conflict. While prior research predominantly focuses on WFC's effect on burnout (e.g., Breaugh, 2021; Simões *et al.*, 2021), this study demonstrates how job demands, such as WIF and FIW, negatively influence WE, expanding the scope of the JD-R theory. Furthermore, the study incorporates EI as a critical personal resource within the JD-R framework. Traditionally, personal resources like self-efficacy, optimism, and resilience have been emphasized for their role in helping individuals manage job demands. By integrating EI, this study provides a more nuanced understanding of how employees navigate emotional and interpersonal challenges in the workplace, offering robust empirical support for the buffering effects of personal resources on job demands.

Practically, the significant negative relationship between WFC and WE underscores the need for organizations in the services sector to address work-family conflict. Employers are encouraged to implement policies that promote work-life balance, such as flexible schedules and family-friendly initiatives, to mitigate the adverse effects of WIF on WE. Additionally, training programs aimed at enhancing employees' emotional intelligence can equip them to better manage stress and improve engagement. Employees with high EI can regulate their emotions effectively, turning them into valuable assets for balancing work and family roles (Salovey & Grewal, 2005; Wong & Law, 2002).

#### **Limitations and Future Research**

This study is subject to certain limitations. First, the sample is limited to employees in the retail, accommodation, and food and beverage sectors, which may restrict the generalizability of findings across other service subsectors. Future research should use proportionate sampling techniques to include a broader representation of the services sector, enhancing the study's external validity. Second, the sample size is relatively small, with 150 valid responses. While the data offer valuable insights, future studies should aim for larger sample

sizes to increase statistical robustness and reliability. Third, the cross-sectional design captures relationships at a single point in time, limiting the ability to assess dynamic changes in WFC and WE. Longitudinal studies could provide a deeper understanding of how these relationships evolve over time. Future research could also explore additional outcomes, such as job performance and turnover intentions, to gain a more comprehensive understanding of WFC's implications. Additionally, investigating other potential moderators, such as leadership styles (e.g., servant leadership), could uncover nuanced insights into the relationship between WFC and WE. These directions would further enrich the understanding of the complex interplay between work-family conflict, emotional intelligence, and work engagement.

In conclusion, this study substantiates that both WIF and FIW negatively impact WE among employees in Malaysia's wholesale and retail trade, food and beverage, and accommodation subsectors, with WIF exerting a stronger influence. Emotional intelligence was found to moderate the relationship between WIF and WE but not between FIW and WE, reflecting cultural nuances in the Malaysian context. This research extends the JD-R theory by demonstrating the direct negative effects of WFC on WE and introducing EI as a critical personal resource that mitigates these effects. The findings enrich the understanding of WFC in collectivist settings, highlighting the interplay between job demands, personal resources, and employee engagement. Contextually, the study addresses a significant research gap by focusing on Malaysia's underexplored service subsectors, offering practical insights into culturally sensitive interventions. These include fostering flexible work arrangements and EI training to bolster engagement and reduce turnover, emphasizing their pivotal role in enhancing workforce resilience and organizational sustainability.

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