INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 16, Issue 4, (2026) E-ISSN: 2222-6990

Employee Work Engagement in Malaysia: Insights from Job Demands–Resources, Kahn's Engagement, and Social Exchange Theories

Dalowar Hossan[1], Zuraina Dato' Mansor[2], Nor Siah Jaharuddin[3], Bert Wolfs[4]

[1,4]SBS Swiss Business School, 8302 Kloten-Zurich, Switzerland, [2,3]School of Business and Economics, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia

*Corresponding Author Email: dalowarhossan.bd@gmail.com

DOI Link: http://dx.doi.org/10.6007/IJARBSS/v16-i4/27815

Published Date: 05 April 2026

Abstract

Based on the integration of the Job Demands–Resources theory, Kahn's theory of the psychological conditions of engagement, and Social Exchange Theory, the researchers develop a new research framework to investigate the effects of meaningful work and transformational leadership, along with demands and resources, on work engagement. The study adopted a quantitative research paradigm in which data were collected from 213 full-time Malaysian operational bank employees by online self-administered closed-ended questionnaire. Data was analysed by SPSS 26 and Smart-PLS 4. The findings reveal that job resources and personal resources significantly positively affect work engagement, and job demands significantly negatively affect work engagement, while no significant effect of personal demands (p=0.32) exists on work engagement. Meaningful work mediates the relationships between demands (job and personal) and work engagement; and job resources and work engagement, except for personal resources (p=0.949) and work engagement. Transformational leadership style moderates the relationship between resources (job and personal) and work engagement, job demands, and work engagement, except for the relationship between personal demands and work engagement (p=0.126). Meanwhile, job resources do not moderate the relationship between demand (job and personal) and work engagement (p>0.05). However, the job demands moderate the relationship between personal resources and work engagement, while do not moderate the relationship between job resources and work engagement (p=0.826). Personal demands do not moderate the relationship between resources (job and personal) and work engagement (p>0.05). Personal resources moderate the relationship between job demands and work engagement while no moderating effect exists between personal demands and work engagement (p=0.115).

Keywords: Employee Work Engagement (WE), Job Demand (JD), Job Resource (JR), Meaningful Work (MW), Personal Demand (PD), Personal Resource (PR), Transformational Leadership (TL)

Introduction

Every organization has challenges in engaging employees; this includes the banking sector. Reports state that banking industry leaders face challenges in retaining good talent (Quantum Workplace, 2021). According to Quantum Workplace research, only 50 percent of employees in the banking sector are highly engaged, and 35 percent are a retention risk. They are facing challenging scenarios in attracting, retaining, and engaging skilled employees amidst the low unemployment rates currently experienced in the job market. Qualtrics (2024) revealed that 67% of employees were experiencing engagement in their workplace in 2023, which is 13% lower than in 2022 and 2% lower than in 2021. The engagement experience of the Malaysian employees turned to the peak year (2020) of the COVID-19 pandemic. Since 2023, all main employee experience measures in Malaysia have fallen; therefore, employee engagement is predicted to fall for consecutive years (Business Times, 2023). According to Aon (2018), employee engagement in Malaysia stood at 63% in 2018, leaving 37% of employees disengaged. This disengagement was estimated to result in a financial loss of approximately RM 30.661 billion (Figure 1).

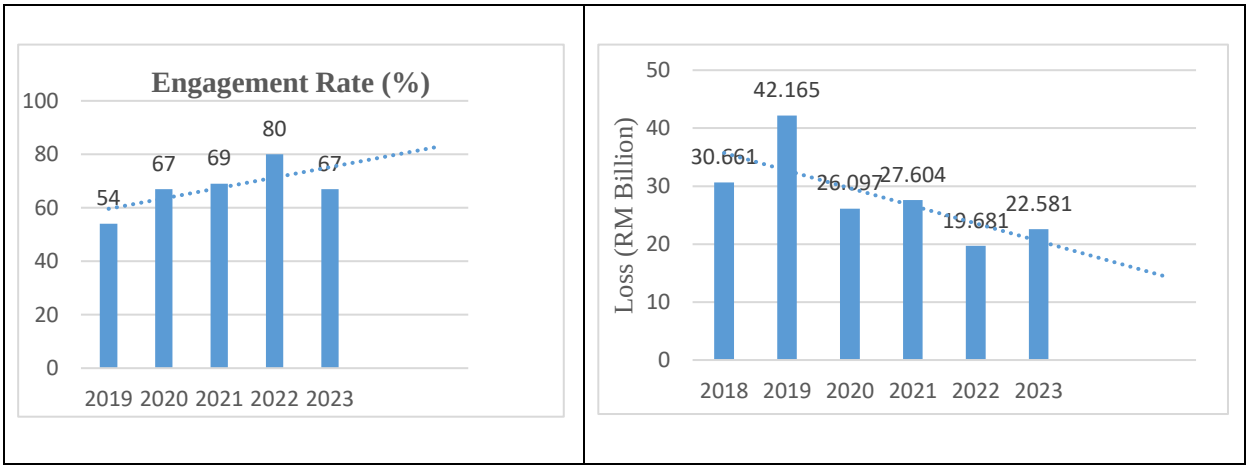


Figure 1: Employee Engagement Rate and Approximate Loss for Employee Disengagement in Malaysia
(Source: Laotian Times, 2021; Forbes, 2019; Aon, 2018; Qualtrics, 2020,2022,2023,2024)
* 2023 based on first quarter report

Qualtrics (2020) reported that 46% were disengaged in 2019, costing an estimated RM 42.165 billion in 2019. Furthermore, Qualtrics (2021) indicated that 33% of Malaysian employees were disengaged in 2020, costing an estimated RM 26.097 billion in 2020. According to Qualtrics (2022), 31% of Malaysian employees were disengaged in 2021, costing an estimated RM 27.604 billion. According to Qualtrics (2023), 20% of Malaysian employees were disengaged in 2022, with disengaged employees costing an estimated RM 19.681 billion. According to Qualtrics (2024), 33% of Malaysian employees were disengaged in 2023, costing about RM 22.581 billion (based on the first quarter report). Thus, organizations should pay attention and take relevant strategies to ensure employees remain engaged.

Crowe (2022) conducted a study on 429 banks and revealed that banks are experiencing a high turnover of non-officer-level employees despite offering attractive compensation and benefits packages (ABA Banking Journal, 2022). Because Work

Engagement (WE) is not dependent on resources but also on demands (Bakker et al., 2023). Thus, there are numerous amounts of research on WE, and most studies use the job demands-resources (JD-R) theory to investigate the antecedents for WE, primarily related to Job Demands (JD) and Job Resources (JR) factors (Bailey et al., 2017). Most of the studies (for example, Radey and Wilke, 2023) focused on Personal Resources (PR), JD, and JR. The JD-R theory's flexibility in incorporating new variables, e.g., personal demand (Schaufeli & Taris, 2014), encouraged to study covering new indicators not included to date intensively, for example, employee religiosity as PR (Abualigah et al., 2021), mental health challenges (Brokmeier et al., 2022) as JD and workaholism as personal demand (Guglielmi et al., 2012; Langseth-Eide, 2019) along with the other indicators of JR, PR, and JD proposed by JD-R theory (Schaufeli & Taris, 2014). Prior research primarily concentrated on JD (Mauno & Minkkinen, 2020), JR (Mäkikangas et al., 2016), or both but exempted PR (Fan et al., 2019; Gameiro et al., 2020). Personal Demands (PD), PR, JD, and resources are predicted to influence job outcomes. Studies combining PR with JD and resources are scarce (Lee & Cho, 2020; Radey & Wilke, 2023), and none incorporated PD (Pulido-Martos et al., 2023).

In addition, WE and workaholism (PD) have been shown to tap into different forms of heavy work investment (Mazzetti et al., 2018), and both are associated with a high level of work involvement. However, the relationship between the two constructs has received less attention (Tóth-Király et al., 2021). Since the relationship between employees' JD and JR promotes WE (Bailey et al., 2017), Bakker and Demerouti (2017) proposed testing the job demand and personal resource interaction. Therefore, this study focuses on the interaction of demands (job and personal) and resources (job and personal) towards WE using the JD-R theory to fill a theoretical gap with strengths and limits. It is critiqued for being a descriptive rather than an explanatory framework, meaning other theories are typically needed to explain and comprehend the underlying processes involved (Schaufeli & Taris, 2014). According to Kahn's (1990) Theory of Psychological Conditions of Engagement (KTPCE), an employee will be engaged even if they have enough work resources available to them if they feel "psychological present" while performing their duties. The three psychological states are availability, safety, and meaningfulness. Previous studies, such as May et al. (2004) and Olivier and Rothmann (2007), discovered that psychological meaningfulness (meaningful work) had the strongest link with engagement. Leaders' meaningful work helps followers achieve goals (Kipfelsberger et al., 2022). In this regard, the JD-R theory does not explain the psychological mechanism that drives an employee to get involved. Although Schaufeli and Taris (2014) noted that JD-R specified PR and JR results in particular psychological states and outcomes, they did not explain this. Past studies also suggested that there is little attempt to integrate Kahn's (1990) theory with the JD-R theory (Saks & Gruman, 2014) despite the evidence that explains the importance of Meaningful Work (MW) in the context of engagement theory (Albrecht, 2013). MW has received increasing academic attention from researchers from varied domains, but it was rarely included in existing JD-R literature (Meng et al., 2022). Thus, it is essential to have a psychological condition (MW) as a mediator while researching the concept of WE, according to researchers and Kahn's (1990) theory.

As PricewaterhouseCoopers (2023) revealed, the overall levels of trust in economic headwinds in Malaysian institutions (government, non-government, business, and media) have decreased from 66 points in 2022 to 62 in 2023, and managers (leaders) should focus on the employees experience first to build trust that direction is driven top to down (Edelman,

2023). Employee performance and well-being depend on leadership style (Antonakis & Day, 2017). In light of Social Exchange Theory (SET), leaders build relationships with employees to balance work demands and resources (Madison et al., 2025). As a result, Kişi (2023) recommended investigating the connection between various styles of leadership and employee WE. When supervisors are close to their team and show humility, their sense of power can boost employee WE and trust (Liborius et al., 2025). Consequently, JD-R and leadership are progressively connected in several ways (Cheung et al., 2021). For instance, leadership is described as JR by Salas-Vallina and Fernandez (2017), as JD by Nielsen, Gjerstad, and Frone (2018), and as a factor that influences both resources and demands by Fernet et al. (2015). However, transformational leadership (TL) practices are well-known among many leadership styles because they foster strong emotional bonds with their subordinates and increase employee trust (Fareed & Su, 2022). In addition to acting as a coach or mentor, a transformational leader supports every employee's personal development and advancement (Bass & Avolio, 1994). Leadership style and JD-R theory have been linked in a few previous research, including Schaufeli and Taris (2014), and Tummers and Bakker (2021). However, one of the purposes of this study is to investigate the connections between TL and JD-R characteristics better to understand the WE among bank employees in Malaysia. This study adds to the body of knowledge regarding WE in Malaysia since earlier research was conducted in the United States and Europe. With the mediation impact of MW and the moderating effect of TL, this study aims to investigate how demands and resources affect bank employees in Malaysia.

Research Framework and Hypotheses Development

Based on the assumptions of JD-R theory, KTPCE, and SET, the following framework (Figure 2) with twenty hypotheses is proposed in Table 1.

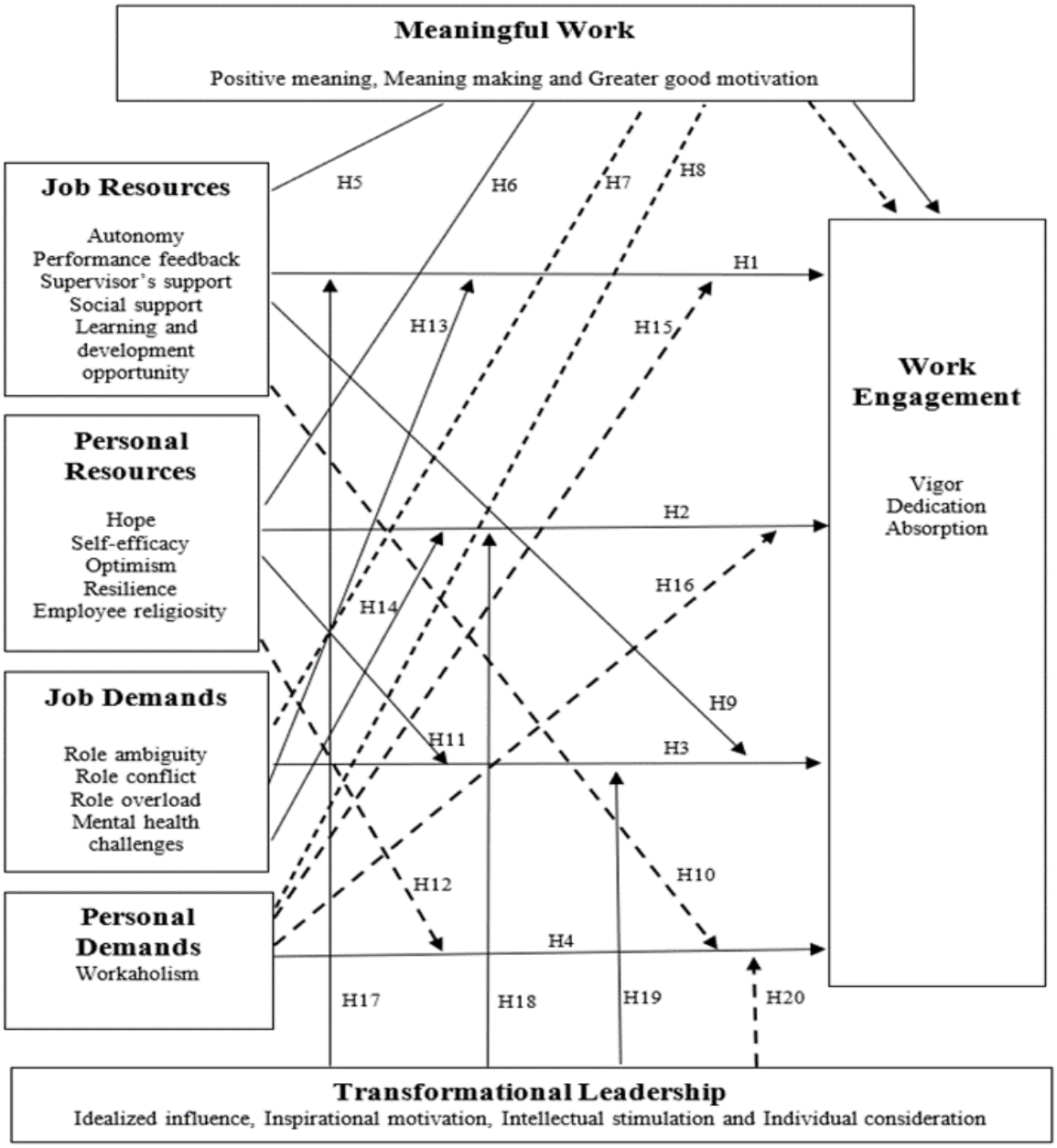


Figure 2: Research Framework

Out of these, H1, H2, H3, H4, H5, H6, H9, H11, H13, and H14 the past researchers have already tested, but they are studied in this research in the context of banking organizations in Malaysia that are not done yet. Thus, 10 hypotheses were formulated and tested with cited authors without explanations. Additionally, this study has developed hypotheses H10, H12, H15, and H16, suggested by previous scholars for future expansion, especially when using JD-R theory. New hypotheses are H17, H18, H19, and H20, suggest the moderating effect of TL and H5, H6, H7, and H8 have been included for investigating the mediating effect of MW based on the findings from previous studies and derived from KTPCE and SET theories. However, hypotheses H7, H8, and H20 lack direct empirical support.

Table 1
Formulated Hypotheses

No	Cited authors	Formulated hypothesis	Remark
H1	Bakker et al. (2023), Van Heerden et al. (2022)	*There is a significant positive effect of JR on employee WE*	Previously tested
H2	Abualigah et al. (2021), Bakker et al. (2023)	*There is a significant positive effect of PR on employee WE.*	
H3	Van Heerden et al. (2022), Bakker et al. (2023)	*There is a significant negative effect of JD on employee WE*	
H4	Demerouti and Bakker (2023), Britt et al. (2021)	*There is a significant negative effect of PD on employee WE*	
H5	Albrecht et al. (2021), Steger et al. (2012), Zakaria (2019)	*There is a mediating effect of MW on the relationship between WE and JR*	
H6	Albrecht (2013), Zakaria (2019)	*There is a mediating effect of MW on the relationship between WE and PR*	
H7	According to meta-analytical data, MW has a positive correlation with job satisfaction, commitment, and WE. These factors, in turn, are linked to stronger organizational citizenship behaviors, lower withdrawal intentions, and higher self-rated work performance (Allan et al., 2019). JD are those parts of a job that come with psychological and physiological costs and call for prolonged effort (Bakker & Demerouti, 2017). JD can result in chronic overtaxing and, ultimately, burnout, which can harm one's health. KTPCE states that one of the psychological factors that motivates employees to become involved at work is MW. WE is a result of a drop in physiological and psychological costs as well as a reduction in JD when an employee believes that their job is a source of purpose in their life, personal development, and a beneficial effect on others (Svicher et al., 2022).	*There is mediating effect of MW on the relationship between WE and JD*	Focusing on KPTC

H8	PD refer to individual factors that necessitate continuous effort and contribute to both physical and mental strain. These demands can trigger health deterioration, as excessive PD negatively impact work-related well-being (Langseth-Eide, 2019). When individuals prioritize their jobs above all else and concentrate solely on work, they are more inclined to contemplate leaving their positions (Jung et al., 2023). Since employees feel that their work is an important source of meaning in their lives (Svicher et al., 2022), workaholic employees put in more hours at work than is expected of them. Thus, their physiological and psychological costs decrease, which leads them to WE, according to KTPCE.	*MW acts as a mediator in the connection between WE and PD.*	Focusing on KPTC
H9	Bakker et al. (2023), Demerouti and Bakker (2023)	*There is a moderating effect of JR on the relationship between JD and WE*	Previously tested
H10	According to Demerouti and Bakker (2023), literature suggests that resources may, at times, intensify the health impairment process in a different domain. Demerouti and Bakker (2023) also suggest that JR might amplify the impact of PD on health-related outcomes, such as health problems and exhaustion.	*JR serve as a moderator in the relationship between PD and WE.*	Developed based on JD-R theory
H11	Chen (2022), Bakker et al. (2023), Demerouti & Bakker (2023)	*PR moderate the relationship between JD and WE.*	Previously tested
H12	Demerouti and Bakker (2023) suggested that resources, regardless of their origin, be it organizational, job-related, home-based, or personal can help mitigate the effects of demands from both similar and different domains on health outcomes like exhaustion and health issues.	*PR influence the relationship between PD and WE as a moderating factor.*	Focusing on JD-R theory
H13	Van Heerden et al. (2022), Demerouti and Bakker (2023), Bakker et al. (2023)	*JD act as a moderator in the relationship between JR and WE.*	Previously tested

H14	Abualigah et al. (2021)	*JD moderate the relationship between PR and WE.*	
H15	Demerouti and Bakker (2023) proposed that PD may strengthen the positive impact of JR on motivational outcomes like WE, adaptability, and extra-role behavior.	*PD moderate the relationship between JR and WE.*	Focusing on JD-R theory
H16	Demerouti and Bakker (2023) noted that demands from any domain (such as organization, job, home, or personal) can amplify the positive effects of JR on motivational outcomes like WE, adaptability, and extra-role behavior. However, they did not include PR when formulating their propositions, as PD moderate the link between resources and WE.	*PD moderate the relationship between PR and WE.*	developed based on JD-R theory
H17	Tummers and Bakker (2021)	*TL moderates the relationship between JR and WE.*	Previously tested
H18	Tummers and Bakker (2021)	*TL moderates the relationship between PR and WE.*	Previously tested
H19	Tummers and Bakker (2021) revealed that leadership can moderate the relationship between JD and strain (opposite of WE). Bakker et al. (2022) suggested to investigate the moderating effect of TL between JD and burnout.	*TL moderates the relationship between JD and WE.*	Previously tested
H20	According to SET, when an employee encounters PD without receiving adequate resources (both personal and job-related) in return, it is perceived as an unfair employee-employer relationship (Karasek, 1979; Siegrist, 1996). Idealized influence, inspirational motivation, intellectual stimulation, and individual consideration encourage employees to use their strengths and take personal initiative, which fuels WE (Bakker et al., 2022). Tóth-Király et al. (2021) found association between workaholism (PD) and WE.	*There is a moderating effect of TL on the relationship between PD and work engagement*	Developed based on SET

Methodology

Sampling technique, size and data collection

The positivist paradigm was adopted to conduct this quantitative study, and JD-R theory, KTPCE, and SET were used to explore theoretical extension by testing the hypotheses. The unit of analysis of this study was individual. The purposive sample technique was used to collect the data from the full-time operational employees in Malaysian banking organizations based on the inclusion criteria: (1) Employees who worked in the top five banks (Maybank, Public Bank, CIMB bank, RHB bank, and Hong Leong Bank categorized by Forbes 2022) in Malaysia as Full-time employees (permanent and contractual basis), (2) who were related to operational activities (not the cleaners and sweepers who do not play any key role in banking activities) and had at least one year of work experience at the same bank, and (3) Employees who worked under the supervision of the manager.

Using G*Power the minimum sample size for this study was 194 with effect size =0.15, $\alpha = 0.05$, power= 0.95 for fourteen (14) predictors (named, job demands, job resources, personal resources, personal demand, meaningful work, leadership, leadership*job demands, leadership*job resources, leadership*personal resources, leadership * personal demand, job resources*job demand, job resources*personal demand, personal resources*job demand, personal resources*personal demand) of employee work engagement (Memon et al., 2020; Ringle et al., 2020; Uttley, 2019).

The close-ended, five-Likert scale, online self-administered questionnaires were proportionately distributed cross-sectionally based on the number of each bank employee via a QR code (Quick Response Code), which was also physically sent to the participants. Ethical approval was obtained from the University Putra Malaysia Ethics Committee, and a consent form was included in the questionnaire.

Measures of instrument

The questions had been adapted from previous studies in Table 2.

Table 2
Measures

Construct & Number of items	**Source & Number of items for each sub construct/ dimension**
Work Engagement (9)	Employee work engagement consisted of three reflective dimensions: Vigor (3), Dedication (3) and Absorption (3). Utrecht Work Engagement Scale was developed by Schaufeli and Bakker (2004a); adapted from Schaufeli et al. (2006).
Job Demands (17)	Role Ambiguity (5), Role Conflict (4), Role Overload (3), and Mental Health Challenges (5) were reflected by job demands. Role Ambiguity and Role Conflict: Developed by Rizzo et al. (1970); adapted from McMorrow (2014). Role Overload: Developed by Seashore et al. (1982); adapted from Altinay et al. (2019). Mental Health Challenges: Developed by Bech (2004) and adapted from Topp et al. (2015).

Job Resources (19)	Autonomy (3), Social Support (3), Supervisor Support (4), Feedback (5), Learning and Development Opportunities (4) were reflected by job resources Autonomy, Social Support, Supervisor Support, Feedback: Developed by Rothmann et al. (2006); adapted from Zakaria (2019). Learning and Development Opportunities: Developed by Tones and Pillay (2007); adapted from organizational opportunities-learning climate (Tones & Pillay, 2008).
Personal Resources (19)	Self-efficacy (3), Hope (4), Resilience (3), Optimism (2), and Employee religiosity (7) were reflected by personal resources. Self-efficacy, Hope, Resilience, Optimism: Developed by Luthans et al. (2007); adapted from Cesaro (2016). Employee religiosity: Developed by Plante and Boccaccini (1997); used by Schreurs et al. (2014).
Personal Demands (7)	Workaholism (7) was defined as personal demands. The items for workaholism were adapted from Bergen Work Addiction Scale; developed by Andreassen et al. (2012), and used by Bereznowski et al. (2023).
Meaningful Work (10)	Positive Meaning (4), Meaning Making (3), and Greater Good Motivation (3) were reflected from meaningful work. Positive Meaning, Meaning Making, Greater Good Motivation: Developed by Steger et al. (2012); adapted from Zakaria (2019).
Transformational leadership (10)	Idealized influence (4), Inspirational motivation (2), Intellectual stimulation (2), and Individualized consideration (2) were reflected from transformational leadership. Idealized influence, Inspirational motivation, Intellectual stimulation, Individualized consideration: Multifactor leadership questionnaire developed by Avolio and Bass (2004); adapted from Hossan (2020) and Zakaria (2019)

Data screening

Mahalanobis Distance for multivariate outliers and Z score values for univariate outliers reported no significant outliers in the data. Independent sample T-test and Harman's single-factor test were conducted to observe non-response bias and Common Method Bias. p- values for the independent sample T-test were insignificant for all constructs, and the most co-variance by one factor is 17.43%, less than 50 % of the total variance. Hence, it was confirmed that non-response bias and Common Method Bias did not exist for this study. Mardia's multivariate tests revealed significant skewness (p-value < 0.001) and kurtosis (p-value = 0.027), indicating that the dataset as a whole deviate from multivariate normality. Similarly, the Skewness and Kurtosis values of some items, namely JR6, JR15, PR9, PR11, and TL1, indicated that data was not normally distributed in this study (Hair et al., 2017). The data set was non-parametric, which is one of the reasons for using partial least squares structural

equation modeling (namely, smart-PLS 4) instead of using covariance-based structural equation modeling to test hypotheses for this study (Sarstedt et al., 2021).

Respondents profile

Online self-administered questionnaires were shared among 530 participants via QR code. A total of 237 participants submitted their responses. The response rate for this study was 44.72%. Discarded questionnaire due to incomplete or others were 24 and the final complete responses were 213. Most respondents (63.38%) were female, and the rest were male (36.62%). More than 47% of the participants were between 31 and 40. This is followed by those who were between the ages of 21 and 30 years (21.13%), 41 and 50 years (16.90%), below 21 years (10.33%) and more than 50 years (3.76%). The marital status showed that married respondents were 73.24%, single 23%, and others 3.76%. A majority (39.44%) of the respondents were graduate degree holders. About 38.03% of the respondents were undergraduate degree holders, whereas the postgraduate degree holder respondents were 16.90% and others 5.63%. Regarding employment status, the permanent employee respondents were 72.30%, and contractual employees were about 27.70%. Employees were also asked about their work experience in the organization. The majority (52.58%) of the respondents' work experience was between 2 and 5 years. 19.72%, 6.10%, and 5.16% of the respondents had experiences of 6-10 years, 11 -15, and 16 -20 years, respectively. However, only 2.35% of the respondents had experienced over 20 years, and 14.08% of the respondents had experienced 1-2 years in their present organizations.

Data Analysis and Findings

Preliminary data analysis

The mean values of the constructs indicate that all constructs are at a high level, except for PD, which reflect a moderate presence, as shown in Table 3 (Pimentel, 2010).

Table 3

Mean Values of Constructs, Construct Reliability, and Convergent Validity

Items	**Construct (mean value)** & Deleted items	Outer Loadings	Cronbach's alpha	Composite reliability (rho_c)	Average variance extracted (AVE)
RO	**Job demands**		0.885	0.929	0.813
JD10	**(3.56)**	0.889			
JD11		0.895			
JD12	JD1, JD2, JD6,	0.921			
MH	JD13, JD16		0.622	0.798	0.570
JD14		0.711			
JD15		0.737			
JD17		0.813			
RA			0.780	0.728	0.577
JD3		0.859			
JD5		0.644			
RC			0.892	0.933	0.823
JD7		0.875			
JD8		0.936			
JD9		0.910			
A	**Job resources**		0.724	0.845	0.646
JR1	**(3.97)**	0.803			

JR2		0.749			
JR3	JR6, JR8, JR15	0.855			
F			0.787	0.862	0.611
JR11		0.766			
JR12		0.724			
JR13		0.805			
JR14		0.826			
LDO			0.762	0.851	0.590
JR16		0.869			
JR17		0.764			
JR18		0.740			
JR19		0.687			
SOS			0.786	0.828	0.706
JR4		0.807			
JR5		0.872			
SUS			0.732	0.848	0.652
JR7		0.751			
JR9		0.859			
JR10		0.808			
PM	**Meaningful work (3.77)**		0.681	0.819	0.606
MW1		0.741			
MW2		0.665			
MW4		0.909			
MM	MW3, MW6, MW8		0.636	0.749	0.600
MW5		0.820			
MW7		0.726			
GGM			0.625	0.842	0.727
MW9		0.845			
MW10		0.860			
PD	**Personal demands (3.46)**		0.842	0.875	0.543
PD1		0.687			
PD2		0.695			
PD3		0.870			
PD4		0.858			
PD6		0.604			
PD7		0.668			
O	**Personal resources (3.99)**		0.635	0.839	0.724
PR11		0.917			
PR12		0.780			
REL			0.649	0.806	0.586
PR13	PR3, PR6, PR10, PR15, PR16, PR17, PR19	0.715			
PR14		0.658			
PR18		0.902			
SE			0.699	0.758	0.626
PR1		0.565			
PR2		0.966			
H			0.751	0.767	0.526
PR4		0.807			
PR5		0.698			
PR7		0.662			
R			0.689	0.735	0.597
PR8		0.554			
PR9		0.942			

II	**Transformatio**		0.769	0.855	0.601
TL1	**nal leadership**	0.903			
TL2	**(3.87)**	0.844			
TL3		0.666			
TL4		0.657			
IM			0.663	0.788	0.650
TL5		0.783			
TL6		0.829			
IS			0.820	0.726	0.571
TL7		0.803			
TL8		0.705			
IC			0.905	0.955	0.913
TL9		0.949			
TL10		0.962			
V	**Work**		0.735	0.750	0.600
WE1	**engagement**	0.739			
WE2	**(3.98)**	0.808			
D			0.668	0.816	0.598
WE3	WE5, WE6	0.829			
WE4		0.764			
WE7		0.722			
AB			0.660	0.857	0.749
WE8		0.897			
WE9		0.834			

(V= vigor, D= dedication, AB= absorption, IC= individual consideration, IS=intellectual stimulation, IM= inspirational motivation, II= idealized influence, R= resilience, H= hope, SE= self-efficacy, REL= religiosity, O= optimism, GGM= greater good motivation, MM= meaning making, PM= positive meaning, SUS= supervisor support, SOS= social support, LDO= learning and development opportunities, F= feedback, A= autonomy, RC= role conflict, RA= role ambiguity, MH= mental health challenges, RO= role overload, PD= personal demands).

In this study, all constructs constructed Composite reliability (CR) values were within the range of 0.726 to 0.955. The Cronbach's alpha (CA) value range between 0.7 and 0.9 is considered valid to ensure internal consistency (Hair et al., 2022). The average variance extracted (AVE) values for all study variables are between 0.525 and 0.913, hence considered valid values (Henseler et al., 2015). Outer loadings were between 0.555 and 0.962, reflecting internal consistency and convergent validity reached in the measurement model (Hair et al., 2022).

Table 4
Discriminant Validity (HTMT)

	A	AB	D	F	GGM	H	IC	II	IM	IS	LDO	MH	MM	O	PM	R	RA	RC	REL	RO	SE	SOS	SUS	V	PD
A																									
AB	0.498																								
D	0.338	0.673																							
F	0.883	0.212	0.196																						
GGM	0.211	0.690	0.825	0.206																					
H	0.886	0.437	0.419	0.857	0.369																				
IC	0.518	0.188	0.144	0.461	0.346	0.420																			
II	0.673	0.273	0.471	0.789	0.189	0.659	0.654																		
IM	0.826	0.656	0.489	0.874	0.189	0.772	0.590	0.360																	
IS	0.810	0.783	0.224	0.639	0.838	0.608	0.677	0.723	0.470																
LDO	0.617	0.203	0.383	0.568	0.618	0.527	0.786	0.387	0.411	0.565															
MH	0.718	0.683	0.541	0.773	0.361	0.741	0.614	0.893	0.856	0.816	0.298														
MM	0.260	0.799	0.617	0.585	0.465	0.570	0.214	0.441	0.850	0.633	0.584	0.391													
O	0.339	0.118	0.270	0.415	0.297	0.535	0.192	0.350	0.395	0.172	0.439	0.206	0.520												
PM	0.447	0.496	0.598	0.368	0.407	0.368	0.115	0.373	0.589	0.826	0.482	0.255	0.755	0.343											
R	0.659	0.431	0.496	0.831	0.682	0.825	0.310	0.863	0.867	0.880	0.392	0.850	0.673	0.321	0.695										
RA	0.729	0.536	0.775	0.413	0.454	0.833	0.624	0.670	0.618	0.777	0.821	0.620	0.691	0.809	0.532	0.401									
RC	0.220	0.579	0.543	0.185	0.245	0.522	0.347	0.356	0.537	0.864	0.229	0.606	0.395	0.403	0.109	0.256	0.469								
REL	0.449	0.316	0.436	0.766	0.355	0.713	0.670	0.651	0.861	0.805	0.755	0.576	0.448	0.423	0.470	0.758	0.794	0.271							
RO	0.274	0.632	0.573	0.163	0.447	0.583	0.115	0.308	0.491	0.749	0.491	0.673	0.486	0.196	0.171	0.504	0.322	0.896	0.268						
SE	0.526	0.390	0.352	0.572	0.544	0.622	0.123	0.643	0.595	0.425	0.459	0.266	0.811	0.420	0.553	0.746	0.692	0.334	0.526	0.449					
SOS	0.671	0.422	0.404	0.667	0.326	0.378	0.455	0.624	0.844	0.481	0.653	0.541	0.744	0.202	0.180	0.376	0.476	0.252	0.631	0.410	0.458				
SUS	0.832	0.212	0.449	0.894	0.367	0.754	0.528	0.792	0.795	0.832	0.625	0.709	0.704	0.572	0.401	0.644	0.852	0.153	0.507	0.137	0.384	0.738			
V	0.590	0.520	0.718	0.771	0.876	0.310	0.299	0.624	0.425	0.867	0.711	0.847	0.270	0.467	0.370	0.859	0.687	0.397	0.609	0.431	0.699	0.661	0.666		
PD	0.442	0.295	0.375	0.306	0.265	0.381	0.467	0.334	0.275	0.446	0.555	0.475	0.620	0.377	0.610	0.644	0.709	0.313	0.253	0.347	0.636	0.357	0.363	0.487	

If two constructs are reliable, then HTMT finds the correlation between them. It is the ratio of the between-trait correlation to within traits correlation. According to the Table 4, the highest value of HTMT was 0.866 fulfilling the discriminant validity requirement (Gold et al. (2001).

Table 5
Multi collinearity, R-square, f-square, PLS-predict

Construct	Inner VIF		R-square	f Square		Q Square
	Y3	Y7		Y3	Y7	
Job demands (Y1)	1.042	2.131		0.052 (small)	0.372 (large)	
Job resources (Y2)	1.844	4.301		0.080 (small)	0.025 (small)	
Meaningful work (Y3)		1.866	0.251		0.343 (medium)	0.077
Personal demands (Y4)	1.154	1.654		0.230 (medium)	0.001 (no effect)	
Personal resources (Y5)	1.703	2.642		0.000 (no effect)	0.040 (small)	
Transformational leadership (Y6)		3.79			0.085 (small)	
Work engagement (Y7)			0.605			0.232

According to Hair et al. (2022), an inner Variance inflation factor (VIF) threshold of 5 is used to identify potential collinearity issues. Table 5 shows that all the VIF values were within the threshold and below the value of 4.3. Therefore, there were no collinearity issues in the study. As shown in Table 5, MW explained the variance of 25.1% (R square = 0.251), and WE explained the variance of 60.5% (R square = 0.605). According to both criteria by Chin (1998), the model is moderately fit and shows moderate predictive accuracy for WE and weak predictive accuracy for MW. Cohen (1988) states that the f square is typically utilized to examine the relative impact of a predictor construct on an endogenous construct. Using PLS-predict, the model's predictive relevance (Q^2) was validated. All Q^2 values were more significant than zero, thus satisfying the criteria for Q^2 as outlined by Chin (1998).

Inferential statistics

The bootstrapping procedure was conducted with 5,000 subsamples using the percentile approach to generate bootstrap confidence intervals (Hair et al., 2022). The effect/relationship is considered significant if the p-value is less than 0.05, the t-value is greater than 1.96, and the confidence intervals do not include zero, with the alpha (α) level set at 0.05 (Hossan et al., 2020).

Direct effect

According to the result of data analysis, JR (b=0.365, p=0.003) and PR (b=0.415, p=0.013) have significant positive effect on WE, in the same way, JD have significant negative effect on WE (b=-0.502, p=0.000), but PD have no significant effect on WE (b=0.131, p=0.320). Table 6, Figure 3 specifies the result of direct effects.

Table 6
Direct Effect

Hypothesis	**Beta**	**P values**	**Confidence intervals**		**Decision**
			2.50%	97.50%	
Job resources --> employee work engagement	0.365	0.003	0.163	0.53	H1: Accepted
Personal resources --> employee work engagement	0.415	0.013	0.094	0.742	H2: Accepted
Job demands --> employee work engagement	-0.502	0.000	-0.688	-0.13	H3: Accepted
Personal demands --> employee work engagement	0.131	0.32	-0.142	0.386	H4: Rejected

Mediating effect

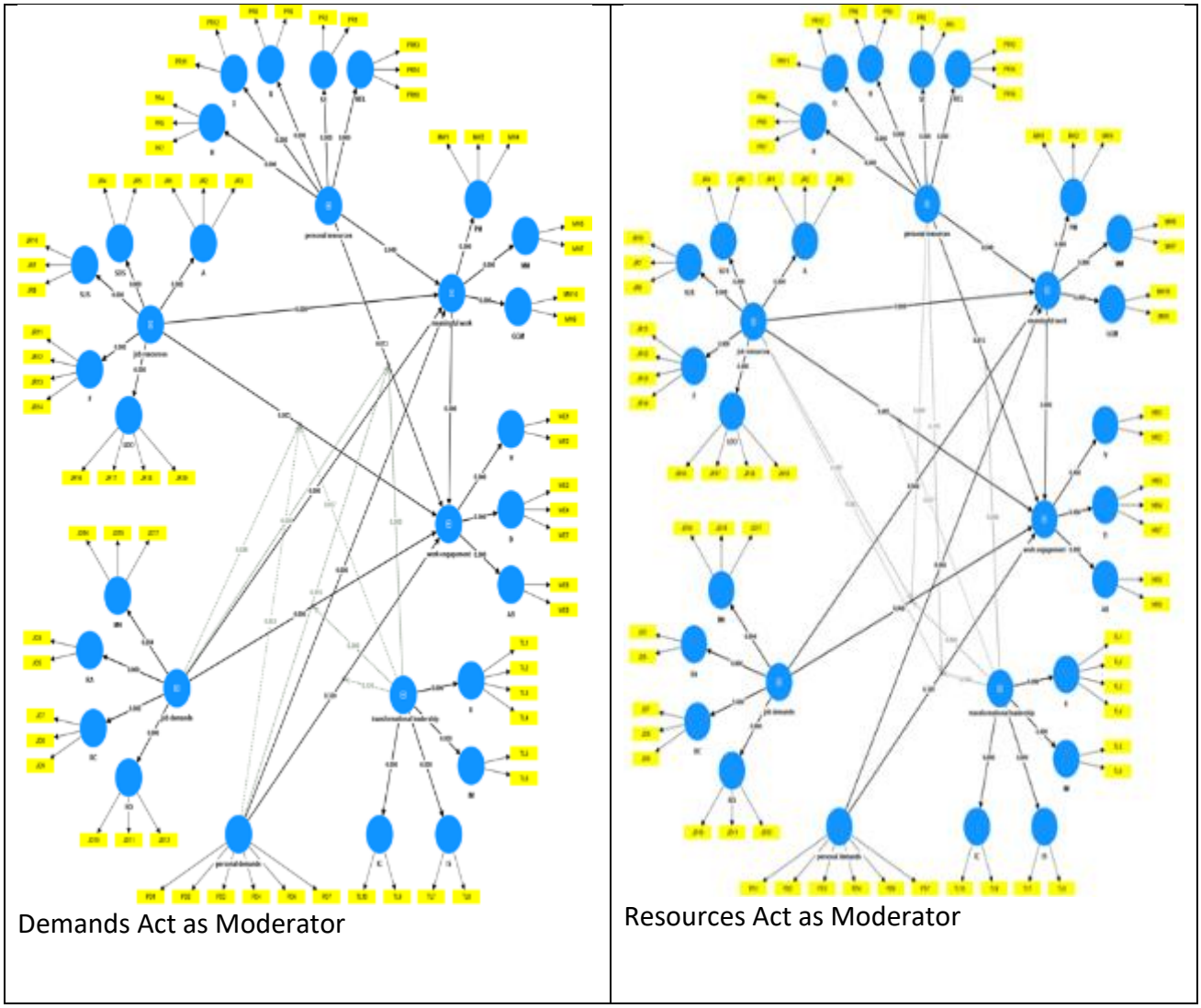
Table 7 shows that MW acts as a mediator in the relationship between JD and WE (b=0.127, p=0.003), PD and WE (b=-0.283, p=0.000), and JR and WE (b=0.210, p=0.016). Nevertheless, there is no mediating effect of MW on the relationship between PR and WE (b=-0.004, p=0.949).

Table 7
Indirect Effect

Hypothesis	**Beta**	**P values**	**Confidence intervals**		**Decision**
			2.50%	**97.50%**	
Job resources --> meaningful work --> work engagement	0.21	0.016	0.04	0.385	H5: Accepted
Personal resources --> meaningful work --> work engagement	-0.004	0.949	-0.125	0.124	H6: Rejected
Job demands --> meaningful work --> work engagement	0.127	0.003	0.038	0.206	H7: Accepted
Personal demands --> meaningful work-- > work engagement	-0.283	0.000	-0.397	-0.165	H8: Accepted

Moderating effect

There are two structural models in this study, because of the statistical model of moderating effect (Figure 3). When resource is the moderator variable (M) between demand (independent variable, X) and WE (dependent variable, Y), the moderating effect (M*X) is resource*demand, as well as when demand is the moderator variable (M) between resource (independent variable, X) and WE (dependent variable, Y), the moderating effect (M*X) is demand*resource (Dawson, 2014; Hair et al., 2023; Memon et al., 2019; Sarstedt et al., 2021). The value of the interaction of demands*resources is equal to the value of the interaction resources*demands, statistically. The hypotheses related to the interaction between demands (job and personal) and resources (job and personal) were developed based on the JD-R theory in this study. Thus, two structural models are drawn to test the developed hypothesis, which interpretation of the findings based on moderating effects.



Demands Act as Moderator

Resources Act as Moderator

Figure 3: Structural Model

TL moderates the relationship between WE and JR (b=-0.225, p=0.037), JD and WE (b=-0.421, p=0.000), and PR and WE (b=0.632, p=0.000). On the other hand, TL does not moderate the association between WE and PD (b=0.299, p=0.126). PR moderate the relationship between

JD and WE (b=0.672, p= 0.000). While, the relationship between PD and WE is not moderated by PR (b= -0.412, p=0.115). Similarly, JR do not have a moderating effect on the relationship between JD and WE (b = -0.032, p = 0.826), nor on the relationship between PD and WE (b = -0.040, p = 0.882). The results of the moderating effects are presented in Table 8 and Figure 3.

Table 8
Moderating Effect

Hypothesis	Beta	P values	Confidence intervals		Decision
			2.50%	97.50%	
Job resources X job demands --> work engagement	-0.032	0.826	-0.288	0.302	H9: Rejected
Job resources X personal demands --> work engagement	-0.04	0.882	-0.662	0.408	H10: Rejected
Personal resources X job demands --> work engagement	0.672	0.000	0.338	1.037	H11: Accepted
Personal resources X personal demands --> work engagement	-0.412	0.115	-0.925	0.099	H12: Rejected
Job demands X job resources --> work engagement	-0.032	0.826	-0.288	0.302	H13: Rejected
Job demands X personal resources --> work engagement	0.672	0.000	0.338	1.037	H14: Accepted
Personal demands X job resources --> work engagement	-0.04	0.882	-0.662	0.408	H15: Rejected
Personal demands X personal resources --> work engagement	-0.412	0.115	-0.925	0.099	H16: Rejected
Transformational leadership X job resources --> work engagement	-0.225	0.037	-0.415	-0.01	H17: Accepted
Transformational leadership X personal resources --> work engagement	0.632	0.000	0.309	0.974	H18: Accepted
Transformational leadership X job demands --> work engagement	-0.421	0.000	-0.642	-0.189	H19: Accepted
Transformational leadership X personal demands --> work engagement	0.299	0.126	-0.077	0.704	H20: Rejected

The relationship between PR and WE is moderated by JD (b = 0.672, p = 0.000). However, JD do not moderate the link between JR and WE (b = -0.032, p = 0.826). Likewise, no moderating effect of PD is found on the relationship between JR and WE (b = -0.040, p = 0.882), nor on the connection between PR and WE (b = -0.412, p = 0.115).

Discussion

Hypotheses H1, H2, and H3 have been accepted and supported by the JD-R theory (Bakker et al., 2023). Bakker et al. (2023) mentioned that JR provides fundamental psychological needs while encouraging employee WE, which leads to innovation and higher performance. JD requires more effort and depletes employees' physical, emotional, and

cognitive resources, possibly leading to fatigue and health concerns. Hypothesis H4 has been rejected. This study tested workaholism to examine the effect of PD on WE. The employees have a moderate level of workaholism (PD) in this study (Table 3), which may be one of the reasons for hypothesis H4 rejection. Tóth-Király et al. (2021) revealed the longitudinal association between employee WE and workaholism (PD) and detailed that while high levels of involvement can boost job engagement, it does not necessarily lead to increased workload.

Hypotheses H5, H7, and H8 were accepted, supported by the JD-R theory and KTPCE (Bakker et al., 2023; Kahn, 1990). According to the data analysis, MW partially mediates the relationship between WE and JR (H5). This finding is consistent with research by Zakaria (2019), which shows that MW significantly mediates the influence of JR on WE among employees in the public service department of Malaysia. It is also revealed that MW partially mediates the relationship between JD and WE among full-time operational employees in banking organizations in Malaysia. On the other hand, MW fully mediates the statistical relationship between WE and PD. That means PD does not affect WE among the full-time operational employees in Malaysian banks (it does not follow the JD-R theory) until the employees perceive the psychological aspect (MW) KTPCE provides. However, Hypothesis H6 has been rejected because this study's results reveal that PR significantly affects WE, and MW significantly affects WE. However, PR does not have a significant effect on MW. That means PR affects WE in line with JD-R theory, without psychological aspects (MW), which KTPCE provides. This result is not similar to the study conducted by Humphrey et al. (2007) and Zakaria (2019). Humphrey et al. (2007) identified experienced meaningfulness as the most critical psychological state that mediates the influence of personal characteristics and WE, while Zakaria (2019) revealed that MW mediates the relationship between WE and JR.

Hypothesis H9 and H10 have been rejected. In Malaysian banking organizations, full-time operational employees feel JR does not increase or decrease the relationship between JD, PD, and WE. According to JD-R theory, JR can weaken or buffer JD's unfavorable health and well-being impact JD (e.g., Shin & Hur, 2021b, 2021a). Demerouti and Bakker (2023) suggested that PR can amplify or mitigate the impact of demands from the exact or other domains on health-related outcomes, such as health problems and exhaustion. However, the results confirmed that PR does not amplify or mitigate the effect of demands from the exact or other domains on WE (motivational outcomes). The JD-R theory recognizes the significant role that employees' PD and resources may play.

Hypothesis H11 has been accepted. When the JD is increased in banking organizations in Malaysia, WE decreases at a low level of PR. However, at the high and medium presence level of PR, if JD is increased, WE will increase. Previous research by Bakker and Demerouti (2017) indicated that PR may help buffer the influence of JD on strain. Chen (2022) found that PR moderates the negative relationship between JD and WE and detailed that the relation between JD and WE is more damaging for the respondents with fewer PR than those with more PR. While Hypothesis H12 has been rejected. The employees in Malaysian banking organizations may suffer from reduced PR or increased PD at work (Chen & Fellenz, 2020). In line with the experience of PR, it may further help employees face health impairment (Demerouti & Bakker, 2023). They may also experience a stalemate of resource investment that results in reduced engagement at work.

H13 has been rejected. This result is not consistent with the proposition of the JD-R theory (Bakker et al., 2023; Demerouti & Bakker, 2023). Based on the JD-R theory, demanding job challenges can amplify the positive influence of JR on WE (e.g., Breevaart & Bakker, 2018; Tadić et al., 2015). In other words, JR tends to be more motivating when highly complex tasks require significant skill. Hypothesis H14 has been confirmed, aligning with the principles of JD-R theory (Bakker et al., 2023; Demerouti & Bakker, 2023). In Malaysian banking organizations, increased PR leads to lower WE when JD is minimal.

Hypothesis H15 has been rejected. PD does not moderate the relationship between JR and WE. This result is not consistent with the proposition of the JD-R theory (Bakker et al., 2023; Demerouti & Bakker, 2023). Hypothesis H16 has been rejected. The findings revealed that workaholism does not increase or decrease the relationship between PR and engagement. This result is not consistent with the proposition of the JD-R theory (Bakker et al., 2023; Demerouti & Bakker, 2023). PD can play a role in the health-impairment process outlined in the JD-R theory, such as workaholism (e.g., Guglielmi et al., 2012), or contribute to the motivational process, as seen in performance expectations (e.g., Barbier et al., 2013).

Hypotheses H17 and H18 have been accepted and supported by SET (Karasek, 1979). This study reveals that if JR is increased in banking organizations in Malaysia, WE decreases when the presence level of TL is low. However, if JR is increased gradually, WE decrease more when the presence level of TL is high and medium. Because, Nawaz et al. (2024) found the significant effect of TL on WE and Bakker et al. (2023) detailed positive association between JR and WE. On the other hand, when PR is increased in banking organizations in Malaysia, WE decreases at a low level of TL. However, when PR is increased, WE increase at TL's high and medium levels. This is almost consistent with the study of Tummers and Bakker (2021), who revealed that leadership can moderate the relationship between JD and strain (opposite of WE).

Hypothesis H19 has been accepted. This study's result revealed JD's adverse effects on WE according to Hypothesis H3. The reduction of this effect depends on the degree of leadership support. When a leader shows supportive behavior to the employee, it significantly buffers workplace stressors (Mañas-Rodríguez et al., 2020). According to SET, managers who exhibit TL behavior try to decrease JD by providing resources (job and personal) to build an equitable relationship between employees and employers for a higher level of employee WE. In Figure 4, when JD is increased among the full-time operational employees in banking organizations in Malaysia, WE increases at the low level of TL. Similarly, when JD is increased, WE increase at the medium level of TL. However, at the high presence level of TL, if JD is increased, WE decrease. That means WE increase if JD decreases through a high level of TL practices.

Hypothesis H20 has been rejected. According to SET, managers (who exhibit TL behavior) try to build an equitable relationship between employees and employers for a higher level of employee WE. Since PD has no significant effect on WE (H4), managers cannot strengthen or weaken the relationship between PD and WE by playing the role of TL (following SET) among the full-time operational employees in Malaysian banking organizations. It might happen because of the moderate level of PD among the full-time operational employees in Malaysian banking organizations (Table 3).

Theoretical Implication

This study offers a relevant research framework to be tested for determining WE among employees in banking organizations in Malaysia. It has combined JD-R theory, KTPCE, and SET. JD-R theory provided the main framework for this study.

Only a few studies have explored the relationship between employee religiosity, mental health challenges, workaholism, and WE (Abualigah et al., 2021; Brokmeier et al., 2022; Langseth-Eide, 2019). This study expands the JD-R theory by offering a theoretically grounded conceptualization of PD, PR, JD, and JR. It empirically examines the role of employee religiosity as a personal resource (Abualigah et al., 2021), mental health challenges as JD (Brokmeier et al., 2022), and workaholism as a PD (Langseth-Eide, 2019), incorporating these factors alongside existing indicators within the JD-R framework (Schaufeli & Taris, 2014) in the context of Malaysia's banking sector. The PD is attached to the research framework to bring theoretical uniqueness to this study based on the JD-R theory (Demerouti & Bakker, 2023). Based on the above discussion, the theoretical implication of this study is related to an extension of the JD-R theory in the context of banking organizations in Malaysia.

Previous research by Bakker et al. (2023) and Bakker and Demerouti (2017) has highlighted the interaction effect between job, PR, and JD. However, the interplay between demands (job and personal) and resources (job and personal) in influencing WE remains unexplored. Therefore, this study makes a significant theoretical contribution by examining how the interaction between these demands and resources impacts WE. The findings also revealed that TL moderates the relationship between JR and WE, PR and WE, and JD and WE. However, TL has no moderating effect on the relationship between PD and WE. The non-significant moderating effect of TL between WE and PD can be associated with PD's lack of direct effect on WE. The findings of this study are well supported by the core principle of SET, which is reciprocity (each partner feels obligated to return any benefits obtained in social exchange relationships) (Tsai & Kang, 2019).

The findings of this study revealed that PR, JR, JD, and MW positively influence WE among the respondents. It also confirmed that MW mediates the relationship between WE and JR, WE and JD, and WE and PD. However, MW does not mediate the relationship between WE and PR. In this study, several antecedents in the form of JR, PR, and JD are vital variables that can affect WE through MW. PD does not directly affect us because of the lack of a psychological mechanism that fosters WE among full-time operational employees in Malaysian banking organizations. Therefore, MW links PD and WE through KTPCE (Kahn's Theory on the Psychological Condition of Engagement). However, PR is one of the most important predictors of WE among full-time operational employees in Malaysia’s banking organizations.

Practical Implication

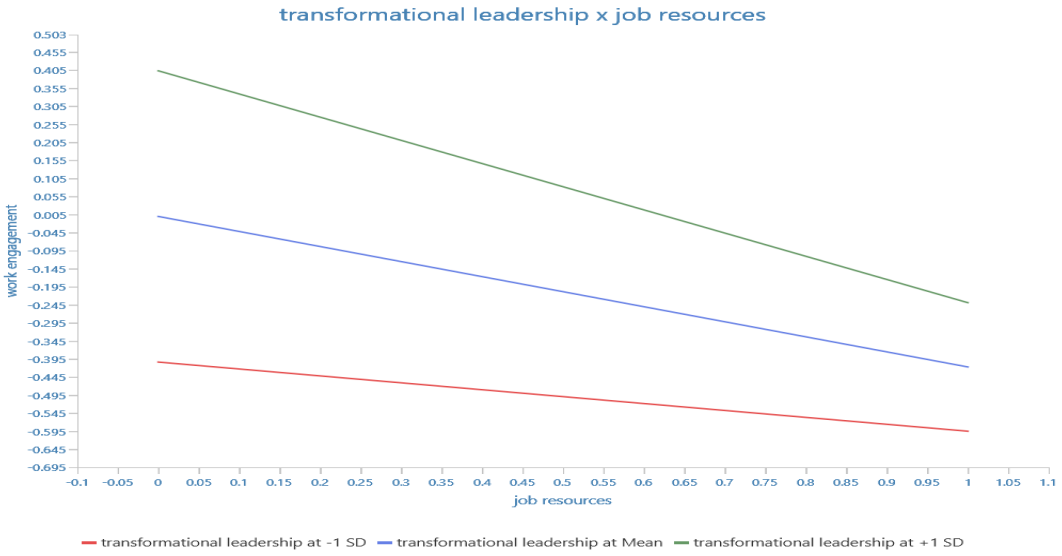
The findings of this study indicate that both personal and JR play a crucial role in enhancing WE among employees in banking organizations. As the presence level of JR is high among the full-time operational employees in Malaysian banks (Table 3), managers should increase its level to very high to upgrade the presence level of WE from high to very high. On the other hand, JD significantly negatively influences WE among employees in banking

organizations. The current state of JD is high (Table 3). As JD affects us negatively, necessary steps should be taken to reduce the presence level of JD among the full-time operational employees in Malaysia's banks.

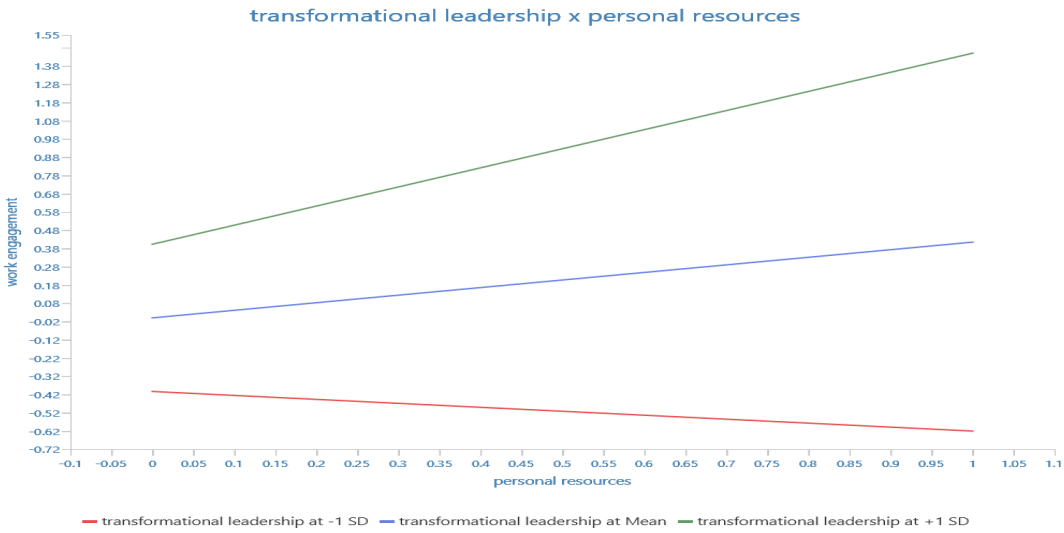
The findings also confirmed that MW, as the mediator, paves the way for banking organization employees to embrace WE. MW mediates the relationship between demands (job and personal), WE, and JR and WE. In this aspect, having the feeling of MW has motivated the employees at banking organizations to perform in the best possible manner, as they believe their works positively impact stakeholders, colleagues, and customers. For that reason, business organizations can take the lead in encouraging and implementing HRM programs that emphasize the positive psychology of MW more. MW does not mediate the relationship between PR and WE because of the insignificant effect of PR on MW (Figure 4). The PR is associated with employees' perception, which motivates them to play their role performances with passion and joy; they can treat their job as something that has positive meaning (a job that has significant individual impact), meaning-making (able to develop personal growth) and provides greater motivation (contribute positive impact to colleagues and workplace) by getting training.

The study also found that TL is a moderating factor in the relationship between WE and resources (job and personal) and JD. Therefore, managers should emphasize playing TL style to engage the bank employees because if JD decreases, WE increases at a high level of TL (Figure 4). Figure 4 states that when PR is increased, WE decreases at a low presence level of TL style. Therefore, managers should play high or medium transformational characteristics among the full-time operational employees in Malaysia's banking organizations.

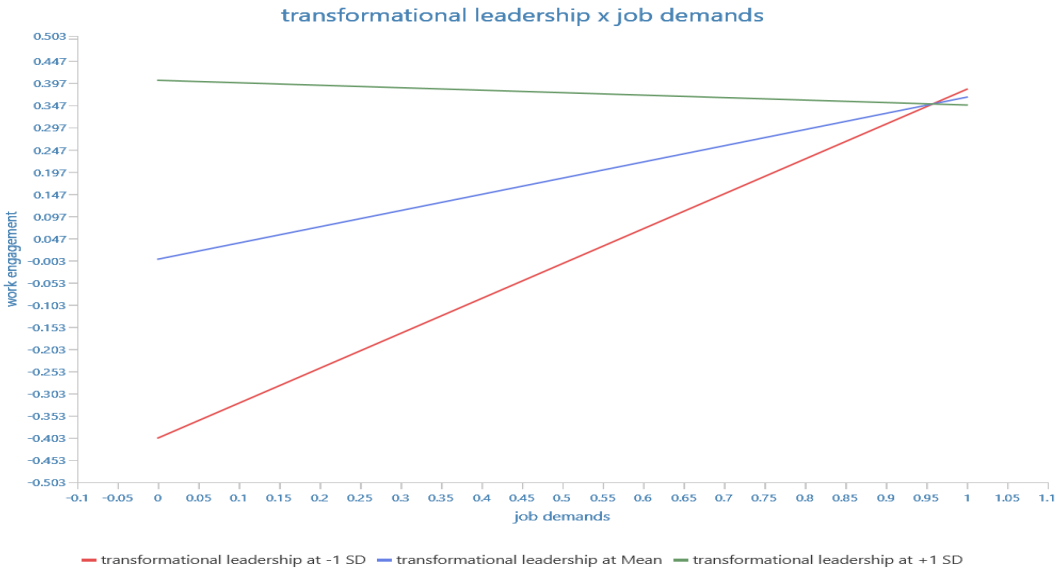
JD moderates the relationship between PR and WE. Similarly, PR moderates the relationship between JD and WE. When PR is increased among the operational employees in banking organizations in Malaysia, WE decreases at a low level of JD. When PR is increased, WE increase at JD's high and medium levels (Figure 4). Similarly, when JD increases among the operational employees in banking organizations in Malaysia, WE decreases at a low PR level. However, at the high and medium presence level of PR, when JD increases, WE also increases (Figure 4). When the employees' PR is low, managers / HRM practitioners should take necessary steps to increase these at a high or medium level so that employees are engaged in the banking organizations when their presence level of JD is high.



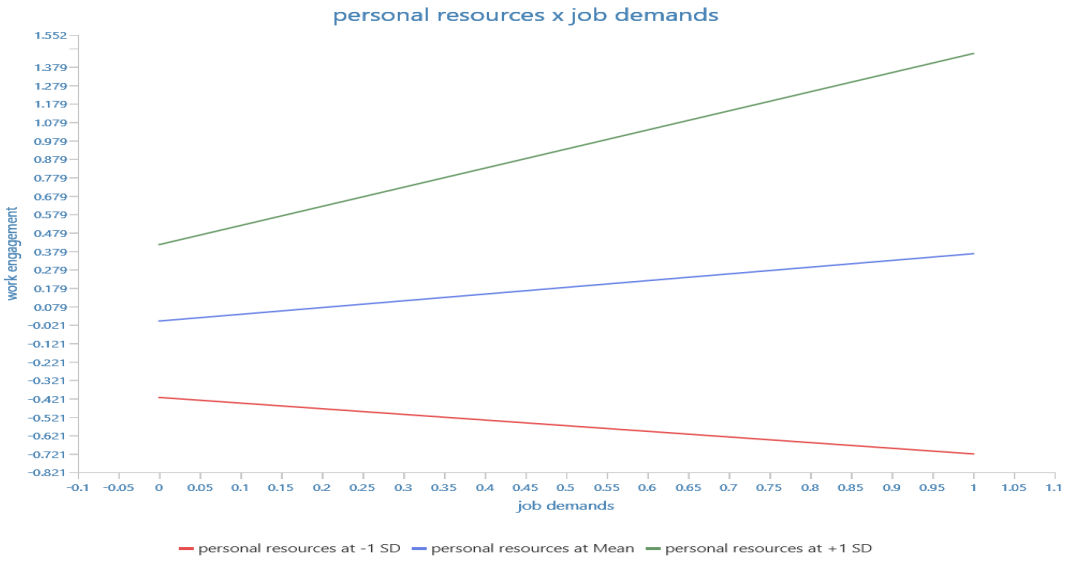
TL moderates the relationship between JR and WE



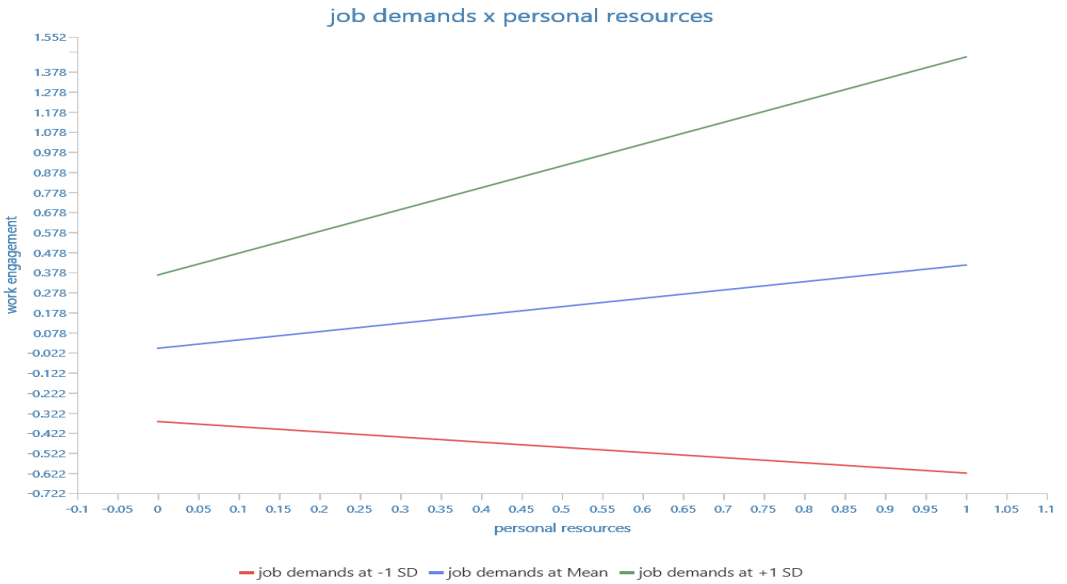
TL moderates the relationship between PR and WE



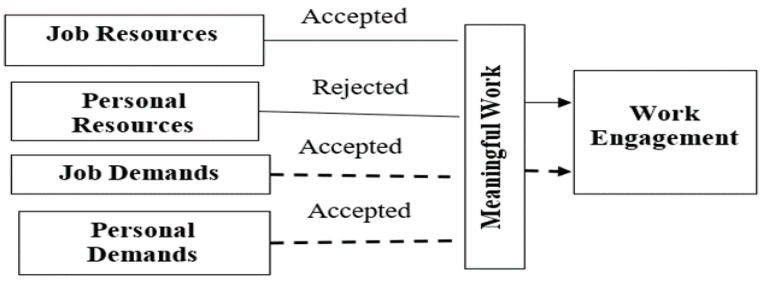
TL moderates the relationship between JD and WE



PR moderates the relationship between JD and WE



JD moderates the relationship between PR and WE



MW mediates the relationship between JR and WE; JD and WE; PD and WE

Figure 4: Moderating and Mediating Effects

Overall, employee WE was 80% in 2022, but it decreased to 67% in 2023. Consequently, it was found that the approximate loss of disengaged employees in different organizational

settings, including the banking industry in Malaysia, will be RM 19.681 billion in 2022. Providing disengaged employees with sufficient jobs and PR to alleviate JD can enhance their engagement in their roles. This approach can help organizations in Malaysia, including banks, minimize the negative impact of employee disengagement.

Conclusion, Limitation and Suggesting for Future Study

This study is novel in that it uses MW as a mediator and TL as a moderator, where demands and resources play interactional roles to extend the literature by filling the previous knowledge gap. This study also highlighted the implications and recommendations for practitioners regarding increasing the level of WE. This study examined only a limited set of dimensions related to job and PD, as well as job and PR. Specifically, JR included autonomy, performance feedback, supervisor support, social support, and learning and development opportunities. PR encompassed hope, self-efficacy, optimism, resilience, and employee religiosity. JD covered role ambiguity, role conflict, role overload, and mental health challenges, while PD focused on workaholism. The respondents of this study consist of various generations, such as baby boomers, generation X, and generation Y. Yu and Miller (2005) stated that each generation of workers has different job characteristics, which are, in fact, associated with different leadership styles. Therefore, it is recommended that a separate study on TL style be conducted among different generations of workers in business organizations. JD-R theory, KTPCE, and SET were not tested thoroughly in this study. Job crafting and self-undermining have been ignored in JD-R theory; MW and TL have been focused on in this study for KTPCE and SET, respectively. Safety and availability had been ignored in KTPCE, and transactional and Leisure-faire leadership styles had not been focused in SET in this study. Future research might consider job crafting and self-undermining, two of the most important constructs of JD-R theory. In future studies, safety and availability might be considered in KTPCE, and transactional and Leisure-faire leadership styles might be focused on in SET.

Declaration Section

Ethics statement: An ethical letter (JKEUPM-2023-193) has been collected from the Ethics Committee for Research involving Human Subjects of University Putra Malaysia (JKEUPM). Besides, a consent sheet was attached in the questionnaire.

Conflict of interest: There is no conflict of interest.

References

ABA Banking Journal. (2022). Non-officer employee turnover returns to pre-COVID levels. https://bankingjournal.aba.com/2022/09/non-officer-employee-turnover-returns-to-pre-covid-levels/

Abualigah, A., Davies, J., & Harrington, S. (2021). Religiosity and work engagement: Workload as a moderator. Stress and Health, 37(5), 862–870.

Albrecht, S. L. (2013). Work engagement and the positive power of meaningful work. Advances in Positive Organizational Psychology, 237–260.

Albrecht, S. L., Green, C. R., & Marty, A. (2021). Meaningful work, job resources, and employee engagement. Sustainability (Switzerland), 13(7).

Allan, B. A., Batz-Barbarich, C., Sterling, H. M., & Tay, L. (2019). Outcomes of meaningful work: A meta-analysis. Journal of Management Studies, 56(3), 500–528.

Altinay, L., Dai, Y. De, Chang, J., Lee, C. H., Zhuang, W. L., & Liu, Y. C. (2019). How to facilitate hotel employees' work engagement: The roles of leader-member exchange, role overload and job security. International Journal of Contemporary Hospitality Management, 31(3), 1525–1542.

Andreassen, C. S., Griffiths, M. D., Hetland, J., & Pallesen, S. (2012). Development of a work addiction scale. Scandinavian Journal of Psychology, 53(3), 265–272.

Antonakis, J., and Day, D. V. (2017). The Nature of Leadership. London: Sage.

Aon. (2018). 2018 Trends in Global Employee Engagement. http://www.aonhewitt.com.au/AON.Marketing/media/Australia/pdf/Resources/Reports and research/2018-Trends-in-Global-Employee-Engagement.pdf

Avolio, B. J., & Bass, B. M. (2004). Multifactor leadership questionnaire: Manual and sampler set. Mind Garden Inc., Redwood City, CA.

Bailey, C., Madden, A., Alfes, K., & Fletcher, L. (2017). The meaning, antecedents and outcomes of employee engagement: A narrative synthesis. International Journal of Management Reviews, 19(1), 31–53.

Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. Journal of Occupational Health Psychology, 22(3), 273–285.

Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. (2023). Job Demands – Resources Theory : Ten Years Later. Annual Review of Organizational Psychology and Organizational Behavior, 10(1), 25–53.

Bakker, A. B., Hetland, J., Kjellevold Olsen, O., & Espevik, R. (2022). Daily transformational leadership: A source of inspiration for follower performance? European Management Journal, 41(December 2020), 700–708.

Barbier, M., Hansez, I., Chmiel, N., & Demerouti, E. (2013). Performance expectations, personal resources, and job resources: How do they predict work engagement? European Journal of Work and Organizational Psychology, 22(6), 750–762.

Bass, B. M., & Avolio, B. J. (1994). Improving organizational effectiveness through transformational leadership. sage.

Bech, P. (2004). Measuring the dimension of psychological general well-being by the WHO-5. QoL Newsletter, 32, 15-16.

Bereznowski, P., Bereznowska, A., Atroszko, P. A., & Konarski, R. (2023). Work Addiction and Work Engagement: a Network Approach to Cross-Cultural Data. International Journal of Mental Health and Addiction, 21(4), 2052–2076.

Breevaart, K., & Bakker, A. B. (2018). Daily job demands and employee work engagement: The role of daily transformational leadership behavior. Journal of Occupational Health Psychology, 23(3), 338–349.

Britt, T. W., Shuffler, M. L., Pegram, R. L., Xoxakos, P., Rosopa, P. J., Hirsh, E., & Jackson, W. (2021). Job demands and resources among healthcare professionals during virus pandemics: A review and examination of fluctuations in mental health strain during COVID-19. Applied Psychology: An International Review, 70(1), 120–149.

Brokmeier, L. L., Bosle, C., Fischer, J. E., & Herr, R. M. (2022). Associations Between Work Characteristics, Engaged Well-Being at Work, and Job Attitudes — Findings from a Longitudinal German Study. Safety and Health at Work, 13(2), 213–219.

BUSINESS TIMES. (2023). Survey: Malaysian employees less engaged at work.

Cesaro, R. J. (2016). Psychological Capital as a Mediator Between Team Cohesion and Productivity. Doctoral dissertation, College of Social and Behavioral Sciences, Walden University.

Chen, I. S. (2022). The Moderating Role of Personal Resources in the Relationship Between Job Demands and Work Engagement. Psihologija, 55(2), 123–136.

Chen, I., & Fellenz, M. R. (2020). International Journal of Hospitality Management Personal resources and personal demands for work engagement : Evidence from employees in the service industry. International Journal of Hospitality Management, 90(June), 102600.

Cheung, C., Zhang, P., Cui, Q., & Hsu, M. (2021). The antecedents of safety leadership: The job demands-resources model. Safety Science, 133, 1–13.

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. Modern Methods for Business Research, 295(2), 295–336.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences, 2nd edn. 12 Lawrence Erlbaum Associates Inc. Hillsdale, New Jersey, 13.

Crowe. (2022). 2023 Crowe Bank Compensation And Benefits Survey Highlights. https://www.crowe.com/-/media/crowe/llp/widen-media-files-folder/2/2022-crowe-bank-compensation-and-benefits-survey-highlights-cfs2304-003b.pdf

Demerouti, E., & Bakker, A. B. (2023). Job demands-resources theory in times of crises : New propositions. Organizational Psychology Review, 13(3), 209–236.

Fan, W., Moen, P., Kelly, E. L., Hammer, L. B., & Berkman, L. F. (2019). Job strain, time strain, and well-being: A longitudinal, person-centered approach in two industries. Journal of Vocational Behavior, 110, 102–116.

Edelman. (2023). Edelman Trust Barometer Global Report. https://www.edelman.com/sites/g/files/aatuss191/files/2023-01/2023 Edelman Trust Barometer Global Report.pdf

Fareed, M. Z., & Su, Q. (2022). Transformational leadership and project success : The mediating role of trust and job satisfaction. 2022(September), 1–14.

Fernet, C., Trépanier, S.-G., Austin, S., Gagné, M., & Forest, J. (2015). Transformational leadership and optimal functioning at work: On the mediating role of employees' perceived job characteristics and motivation. Work & Stress, 29(1), 11–31.

Forbes. (2019). How Much Are Your Disengaged Employees Costing You? May 2, 2019. https://www.forbes.com/sites/karlynborysenko/2019/05/02/how-much-are-your-disengaged-employees-costing-you/?sh=665f7bdb3437

Forbes. (2022). The Global 2000. Retrieved on September 12, 2022. https://www.forbes.com/lists/global2000/?sh=28f06cd35ac0

Gameiro, M., Chambel, M. J., & Carvalho, V. S. (2020). A person-centered approach to the job demands–control model: A multifunctioning test of addictive and buffer hypotheses to explain burnout. International Journal of Environmental Research and Public Health, 17(23), 8871.

Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: An organizational capabilities perspective. Journal of Management Information Systems, 18(1), 185–214.

Guglielmi, D., Simbula, S., Schaufeli, W. B., & Depolo, M. (2012). Self-efficacy and workaholism as initiators of the job demands-resources model. Career Development International, 17(4), 375–389.

Hair Jr, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. International Journal of Multivariate Data Analysis, 1(2), 107–123.

Hair, J. F., Hult, T., Ringle, C. M., & Sarstedt, M. (2022). A primer on partial least squares structural equation modeling (PLS-SEM) (3rd ed.). Thousand Oaks: Sage.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A New Criterion for Assessing Discriminant Validity in Variance-Based Structural Equation Modeling. Journal of the Academy of Marketing Science (JAMS), 43(1), 115–135.

Hossan, D. (2020). Motivational Factors and Mediating Role of Leadership on Employee Engagement in Ready-Made Garments Industry in Bangladesh. Master of Science dissertation, School of Business and Economics, Universiti Putra Malaysia.

Hossan, D., Aktar, A., & Zhang, Q. (2020). A study on partial least squares structural equation modeling (PLS-SEM) as emerging tool in action research. LC International Journal of STEM, 1(4), 130-146.

Humphrey, S. E., Nahrgang, J. D., & Morgeson, F. P. (2007). Integrating Motivational, Social, and Contextual Work Design Features: A Meta-Analytic Summary and Theoretical Extension of the Work Design Literature. Journal of Applied Psychology, 92(5), 1332–1356.

Jung, H.-S., Jung, Y.-S., & Yoon, H.-H. (2023). The Effects of Workaholism on Employee Burnout and Turnover Intent at Deluxe Hotels during the COVID-19 Pandemic: Evidence across Generations. Sustainability, 15(6), 5227.

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. Academy of Management Journal, 33(4), 692–724.

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: implications for job redesign. Administrative Science Quarterly, 24(2), 285–308.

Kipfelsberger, P., Raes, A., Herhausen, D., Kark, R., & Bruch, H. (2022). Start with why: The transfer of work meaningfulness from leaders to followers and the role of dyadic tenure. Journal of Organizational Behavior, 43(8), 1287–1309.

Kişi, N. (2023). Bibliometric Analysis and Visualization of Global Research on Employee Engagement. Sustainability (Switzerland), 15(13).

Langseth-Eide, B. (2019). It's been a hard day's night and i've been working like a dog: Workaholism and work engagement in the JD-R model. Frontiers in Psychology, 10(JUN).

Laotian Times. (2021). Qualtrics' Employee Experience Trends reveals top drivers of employee engagement in Malaysia in 2021. https://laotiantimes.com/2021/03/23/qualtrics-employee-experience-trends-reveals-top-drivers-of-employee-engagement-in-malaysia-in-2021/

Liborius, P., Kiewitz, C., & Faber, A. (2025). Up Close and Powerful: Leaders' Personal Sense of Power and Psychological Closeness to Their Team as Antecedents of Leader Humility, Subordinate Job Engagement and Trust. Journal of Organizational Behavior. 1-21.

Lee, Y., & Cho, D. (2020). The Effects of Job Demands, Job Resources, and Personal Resources on the Psychological Well-Being of Middle-Aged Workers in the United States: Assessing Latent Profile Differences. International Journal for Educational and Vocational Guidance, 20(3), 501–521.

Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive Psychological Capital: Measurement and Relationship with Performance and Satisfaction. Personnel Psychology, 60(3), 541–572.

Madison, K., Eva, N., De Cieri, H., & Goh, Z. (2025). Social exchange theory in leadership research: A problematizing review. The Leadership Quarterly, 36(6), 101924.

Mäkikangas, A., Schaufeli, W., Leskinen, E., Kinnunen, U., Hyvönen, K., & Feldt, T. (2016). Long-Term Development of Employee Well-Being: A Latent Transition Approach. Journal of Happiness Studies, 17(6), 2325–2345.

Mañas-Rodríguez, M.-Á., Díaz-Fúnez, P.-A., Llopis-Marín, J., Nieto-Escámez, F., & Salvador-Ferrer, C. (2020). Relationship between transformational leadership, affective commitment and turnover intention of workers in a multinational company/La relación entre liderazgo transformacional, compromiso afectivo e intención de rotación de los trabajadores en una compañ. International Journal of Social Psychology, 35(1), 100–115.

Mauno, S., & Minkkinen, J. (2020). Profiling a Spectrum of Mental Job Demands and their Linkages to Employee Outcomes. Journal for Person-Oriented Research, 6(1), 55–71.

May, D. R., Gilson, R. L., & Harter, L. M. (2004). The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. Journal of Occupational and Organizational Psychology, 77(1), 11–37.

Mazzetti, G., Schaufeli, W. B., & Guglielmi, D. (2018). Are workaholism and work engagement in the eye of the beholder?: A multirater perspective on different forms of working hard. European Journal of Psychological Assessment, 34(1), 30–40.

McMorrow, T. F. (2014). The Relationship of Job Demands and Job Resources in Work Engagement of Sport Volunteers. Florida State University.

Memon, M. A., Cheah, J. H., Ramayah, T., Ting, H., Chuah, F., & Cham, T. H. (2019). Moderation analysis: Issues and guidelines. Journal of Applied Structural Equation Modeling, 3(1), i–xi.

Meng, L., Du, J., & Lin, X. (2022). Surviving bench stress: Meaningful work as a personal resource in the expanded job demands-resources model. Current Psychology, 1–12.

Nawaz, N., Gajenderan, V., Manoharan, M., & Parayitam, S. (2024). Disentangling the relationship between transformational leadership and work engagement: Employee empowerment as a mediator and work experience and gender as moderators. Cogent Business and Management, 11(1), 1–27.

Nielsen, M. B., Gjerstad, J., & Frone, M. R. (2018). Alcohol use and psychosocial stressors in the Norwegian workforce. Substance Use & Misuse, 53(4), 574–584.

Olivier, A. L., & Rothmann, S. (2007). Antecedents of work engagement in a multinational company. SA Journal of Industrial Psychology, 33(3), 49–56.

Pimentel, J. L. (2010). A note on the usage of Likert Scaling for research data analysis. USM Research and Development Journal, 18(2), 109–112.

Plante, T. G., & Boccaccini, M. T. (1997). The Santa Clara strength of religious faith questionnaire. Pastoral Psychology, 45(5), 375–387.

Pulido-Martos, M., Cortés-Denia, D., Luque-Reca, O., & Lopez-Zafra, E. (2023). Authentic leadership and personal and job demands / resources : A person - centered approach and links with work - related subjective well - being. Current Psychology, 42(33), 28994–29011.

PricewaterhouseCoopers (2023). A leadership agenda: Driving trust from the top. https://www.pwc.com/my/en/assets/publications/2023/pwc-malaysia-a-leadership-agenda-driving-trust-from-the-top.pdf

Qualtrics. (2020). 2020 employee experience trends Malaysia. https://www.qualtrics.com/au/lp/ebook/2020-global-employee-experience-trends/?utm_medium=ebook&utm_source=content&utm_campaign=2020-01--apj--my--ebook--ex--2020-malaysia-trends&utm_content=ebook--ex--2020-maylasia-trends

Qualtrics. (2021). Annual report finds engagement drivers shifted in 2020, EX Solutions Strategy, Qualtrics Southeast Asia. https://www.media-outreach.com/news/malaysia/2021/03/23/70035/qualtrics-employee-experience-trends-reveals-top-drivers-of-employee-engagement-in-malaysia-in-2021/

Qualtrics. (2022). 2022 Employee Experience Trends. https://www.qualtrics.com/ebooks-guides/employee-experience-trends-2022/?utm_lp=homepage-banner

Qualtrics. (2023). Global Study : Employee Experience Trends across Asia-Pacific, 2022. https://www.qualtrics.com/m/www.xminstitute.com/wp-content/uploads/2023/02/XMI_RR-DS_EXTrends-AsiaPacific.pdf?ty=mktocd-thank-you

Qualtrics. (2024). Employee Experience Trends. https://success.qualtrics.com/rs/542-FMF-412/images/Qualtrics 2024 Employee Experience Trends.pdf

Quantum Workplace. (2021). How to Improve Employee Engagement in the Banking Sector. https://www.quantumworkplace.com/future-of-work/employee-engagement-in-banking-sector

Radey, M., & Wilke, D. J. (2023). The importance of job demands and supports: Promoting retention among child welfare workers. Child and Adolescent Social Work Journal, 40(1), 57–69.

Rizzo, J. R., House, R. J., & Lirtzman, S. I. (1970). Role conflict and ambiguity in complex organizations. Administrative Science Quarterly, 15(2), 150–163.

Rothmann, S., Mostert, K., & Strydom, M. (2006). A psychometric evaluation of the job demands-resources scale in South Africa. SA Journal of Industrial Psychology, 32(4), 76–86.

Saks, A. M., & Gruman, J. A. (2014). What do we really know about employee engagement? Human Resource Development Quarterly, 25(2), 155–182.

Salas-Vallina, A., and Fernandez, R. (2017). The HRM-performance relationship revisited. Employee Relations, 39, 626–642.

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Partial Least Squares Structural Equation Modeling. In Handbook of Market Research. https://doi.org/10.1007/978-3-319-57413-4_15

Schaufeli, W. B., & Bakker, A. B. (2004). Utrecht Work Engagement Scale. Occupational Health Psychology Unit, Utrecht University, December, 1–60.

Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the job demands-resources model: Implications for improving work and health. In Bridging Occupational, Organizational and Public Health: A Transdisciplinary Approach (Vol. 9789400756, pp. 43–68). Springer Netherlands.

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. Educational and Psychological Measurement, 66(4), 701–716.

Schreurs, B., van Emmerik, H., De Cuyper, N., Probst, T., van den Heuvel, M., & Demerouti, E. (2014). Religiousness in times of job insecurity: Job demand or resource? Career Development International, 19(7), 755–778.

Seashore, S. E., Lawler, E. E., Mirvis, P., & Cammann, C. (1982). Observing and measuring organizational change: A guide to field practice. New York: Wiley. New York: Wiley.

Shin, Y., & Hur, W.-M. (2021a). Do organizational health climates and leader health mindsets enhance employees' work engagement and job crafting amid the pandemic? International Journal of Environmental Research and Public Health, 18(22), 12123.

Shin, Y., & Hur, W.-M. (2021b). When do job-insecure employees keep performing well? The buffering roles of help and prosocial motivation in the relationship between job insecurity, work engagement, and job performance. Journal of Business and Psychology, 36(4), 659–678.

Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. Journal of Occupational Health Psychology, 1(1), 27.

Steger, M. F., Dik, B. J., & Duffy, R. D. (2012). Measuring Meaningful Work: The Work and Meaning Inventory (WAMI). In Journal of Career Assessment (Vol. 20, Issue 3, pp. 322–337).

Svicher, A., Gori, A., & Di Fabio, A. (2022). Work as Meaning Inventory: A network analysis in Italian workers and students. Australian Journal of Career Development, 31(2), 130–148.

Tadić, M., Bakker, A. B., & Oerlemans, W. G. M. (2015). Challenge versus hindrance job demands and well-being: A diary study on the moderating role of job resources. Journal of Occupational and Organizational Psychology, 88(4), 702–725.

Tones, M., & Pillay, H. (2007). Selection, Engagement and Disengagement of Learning Goals in Older Workers and their Respective Employers: Preliminary Findings in a Sample of Mature Age Australians. In Xiao, M, Yang, B, Gong, J, & Osman-Gani, A M (Eds.) Proceedings of the Sixth Asian Co.

Tones, M., & Pillay, H. (2008). The Learning and Development Survey: Further evaluation of its psychometric properties. Australian Journal of Educational and Developmental Psychology, 8, 85–97.

Topp, C. W., Østergaard, S. D., Søndergaard, S., & Bech, P. (2015). The WHO-5 well-being index: A systematic review of the literature. Psychotherapy and Psychosomatics, 84(3), 167–176.

Tóth-Király, I., Morin, A. J. S., & Salmela-Aro, K. (2021). A longitudinal perspective on the associations between work engagement and workaholism. Work and Stress, 35(1), 27–56.

Tsai, J. C.-A., & Kang, T.-C. (2019). Reciprocal intention in knowledge seeking: Examining social exchange theory in an online professional community. International Journal of Information Management, 48, 161–174.

Tummers, L. G., & Bakker, A. B. (2021). Leadership and Job Demands-Resources Theory: A Systematic Review. In Frontiers in Psychology (Vol. 12). Frontiers Media S.A.

Van Heerden, J., Du Plessis, M., & Becker, J. R. (2022). Walking the Tightrope of Job Demands and Resources: Leveraging Work Engagement to Counter Turnover Intentions of Information Technology Professionals. Frontiers in Psychology, 13(June), 1–13.

Yu, H., & Miller, P. (2005). Leadership style: The X Generation and Baby Boomers compared in different cultural contexts. Leadership & Organization Development Journal, 26(1), 35–50.

Zakaria, Z. Bin. (2019). Mediating effect of meaningful work on the influence of job resources, personal resources and transformational leadership towards work engagement. Doctoral dissertation, Faculty of Educational Studies, Universiti Putra Malaysia.