

Revisiting of Job Demands-Resources Theory in Malaysia

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Abstract

This study revisits the Job Demands-Resources (JD-R) theory based on the Malaysian context with the attachment of workaholism as a personal demand. A total of 199 respondents' data was collected by online self-administered questionnaire longitudinally (T1 and T2, with a six-month lag) and largely cross-sectionally (questionnaires for job crafting and self-undermining were attached in T2 only). Path-coefficient analysis through PLS-SEM was performed to test the hypotheses. The findings reveal that the JD-R theory is equally valid for Malaysian employees to increase their work engagement, as in the literature for Western cultures. Future studies can be conducted based on a multi-country and longitudinal basis.

Keywords: JD-R theory, Job Demands, Personal Demands, Job Resources, Personal Resources, Work Engagement.

1. INTRODUCTION

Job Demands-Resources (JD-R) theory describes how job demands and job resources interact to affect employee engagement, motivation, and well-being in the workplace. The theory was developed by Arnold Bakker and Evangelia Demerouti in the late 1990s and has since become a popular framework for understanding workplace stress and employee well-being. The JD-R Theory defines job demands as those elements of work that identify as the physical or mental effort that, if they surpass a person's capacity to cope, can result in anxiety, exhaustion, and poor health effects. Examples of job demands are workload, constrained time, mental needs, and role ambiguity. Contrarily, job resources are elements of the workplace that assist staff in achieving work objectives and lessen workload pressures to enhance well-being. Examples of job resources include feedback, social support, personal development and growth opportunities, and autonomy.

There is a continuing need for collaboration, both from a practical and academic perspective, to investigate whether organizational behavior theories studied with Western samples are valid for non-Western samples (Leung, 2009; Gelfand et al., 2008). Spector et al. (2007) stated that workplace conflict influences employees in Asian countries more than in Western countries because of cultural values and social belonging. The social support and facilities in the workplace and how Asian workers perceive them as "resources" may be affected by this issue. Other scholars, for example, Sun & Pan (2008) and Clarke et al. (2004), have pointed out that Chinese firms exacerbate the "Western-style" employment problem, especially the need to retain talented employees and raise the

emotional attachment of the employees to the firm. Therefore, it is important to determine how the JD-R theory developed based on studies of Western employees' cultures applies to non-Western employees, specifically those working in Asian countries, such as Malaysia, where social attitudes are significant in the workplace. This study revisits the Job Demands-Resources (JD-R) theory based on the Malaysian context with the attachment of workaholism as a personal demand.

2. LITERATURE REVIEW

Drivers of work engagement in Malaysia

Business Today (2021) reported that 61% of employees were looking for a new job within 12 months in Malaysia, which is a higher rate than in Western countries such as Australia (48%), New Zealand (50%), and the United Kingdom (55%). Lack of career development (36%), recognition/appreciation deficiency (27%), and shortage of training opportunities (26%) are the main reasons for leaving a job in Malaysia. Lack of appropriate salary scale, management suffering, overtime work, and lack of flexibility are also responsible for it. Thompson (2021) detailed that 81% of Generation Z (aged 18-24) and 68% of Millennials (aged 25-34) planned to change their jobs within one year.

Choo (2020) identified the top drivers of engagement in Malaysia (in order of importance with % favorability associated)

- Recognition for good work (62%)
- There is a clear link between the work and the company's strategic objectives (62%)
- Opportunities for learning and development (67%)
- Manager helps in career development (59%)
- Confidence in senior leadership to make the right decisions for the company (62%)

Based on the Maybank Sustainability Report (2015), Maybank focused on learning and development, employee engagement, diverse and inclusive workplace, talent and leadership, health and well-being, and safety for forming a long-term value known as the 20/20 sustainability plan. At the end of the 20/20 plan, Maybank delivered some impact-based programs (such as diversity and inclusion- a workplace where all the employees/members get equal treatment, respect, and equality, employee safety, health and well-being, working environment, emphasizing sustainability, recruitment, growth and participation of talent) to support the development of M25 based on the Maybank Sustainability Report (2020).

According to DRB-HICOM (2019), the work engagement strategies of DRB-HICOM are based on the five pillars to ensure an inclusive, unique, and compelling place to work and grow for all. The following pillars demonstrate the values and commitment to creating a strong brand for the employees and future talents.

- 1) DRB-HICOM marque (The acknowledgment of awards for outstanding contributions or achievements in line with DRB-HICOM's mission and vision)
- 2) DRB-HICOM nurtures (A scaled list of development programs that offers employees to enhance their competencies and create a learning culture organization)
- 3) DRB-HICOM excellence (To provide special facilities that help employees maintain a work-life balance and provide accessibility with quality)

4) DRB-HICOM rewards (An extent of perks and rewards which DRB-HICOM offers to employees and help to create a winning culture)

5) DRB-HICOM dynamic (Variety of care programs to ensure employees have access to the resources needed to care for their health and family).

Sime Darby Berhad Annual Report (2021) claimed that employee engagement increased by 4 percentage points in 2021 compared to 2020 because of the Sime Darby strategy of FY2020. The focal points of FY2020 were infrastructure, career development, and safety, while, in order to increase employee engagement in FY2022, Sime Darby highlighted company meetings, career growth, and knowledge expectations, creating a climate at work that is more inclusive, protecting employees' well-being, and ensuring that the infrastructure is in place to assist employees both physically and psychologically according to Sime Darby Berhad Annual Report (2021).

Job Demands-Resources (JD-R) Theory

Employee engagement (vigor, dedication, and absorption, also known as positive fulfillment of mind in services) results from the interaction among job demands, job resources, and personal resources, according to the JD-R theory. Job demands can be physical, psychological, or social aspects of the job that require sustained effort and that can be associated with stress and burnout. Examples of job demands include workload, time pressure, and emotional demands. Job resources are aspects of the job that can facilitate employee well-being and performance. Examples of job resources include social support, feedback, autonomy, and opportunities for learning and development. Personal resources are individual characteristics that can facilitate employee well-being and performance, such as self-efficacy, optimism, and resilience. The JD-R theory of engagement proposes that job resources and personal resources can buffer the negative effects of job demands and foster employee engagement. Specifically, job resources can enhance employee motivation and job satisfaction, while personal resources can enhance employee self-efficacy and resilience. Overall, the JD-R theory proposes working setting that delivers adequate job resources and foster personal resources that are responsible for higher employee engagement. As a result, employee well-being, performance, and organizational outcomes may improve.

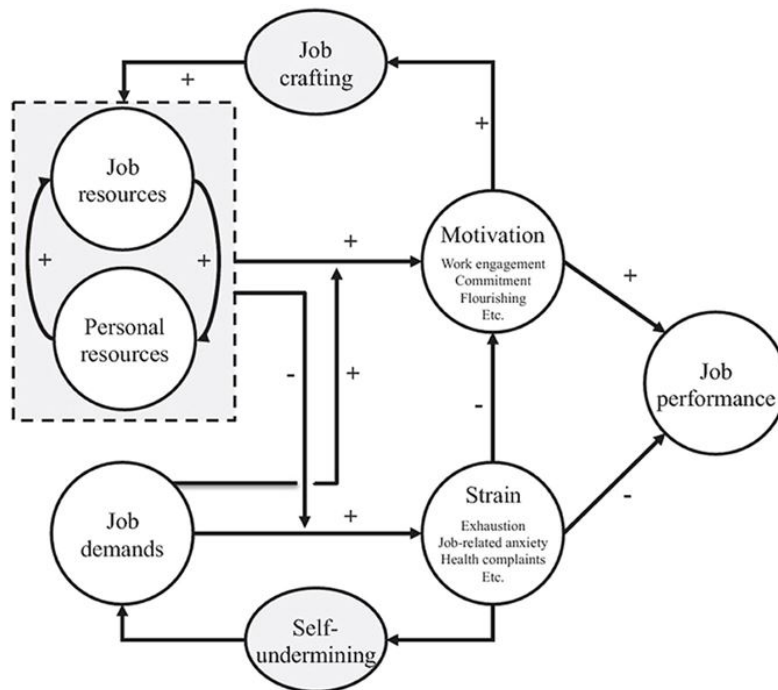


Figure 1: JD-R theory (Bakker and Demerouti, 2017, p. 275)

The Integration of Personal Demands

Van den Broeck et al. (2013) indicated that specifics about one’s personal demands might be seen as adding to the workload for employees and investigated these influences on work engagement, for which the JD-R theory may be a useful framework. The current study is distinctive because it takes into account personal demands in addition to available resources. Prieto et al. (2008, p. 359) assert that it may also be useful to consider individual needs, stating that “...personality traits like perfectionism and emotional instability, and goal setting and levels of expectations, could be relevant personal demands to be studied in future research on this intriguing topic.” Guglielmi et al. (2012) viewed workaholism as a personal demand. According to a study by Schaufeli et al. (2009), workaholism is a personal risk factor for burnout and well-being, regardless of occupational context. Although often used, workaholism does not go beyond the accepted definition of its core characteristic: a keen interest in work. Researchers adopt the definition of Schaufeli et al. (2008) to explain workaholism in this research. Workaholism, manifested as compulsive work, is essentially a tendency to overwork (behavioral dimension) and obsessively work (cognitive dimension). A review of academic definitions reveals two key characteristics of workaholism that are consistent with this definition: “works very hard” and “is driven by a strong inner desire” (McMillan & O’Driscoll, 2006, p. 102).

Guglielmi et al. (2012) specified the importance of workaholism (one kind of personal demand) to JD-R theory to the rise of burnout among school administrators. Workaholism can lead to burnout because overwork can deplete a person’s emotional resources, leading to emotional exhaustion, known as burnout (Maslach, 1986). This is consistent with previous findings (for example, Taris et al., 2005).

Table 1: Hypothesis development

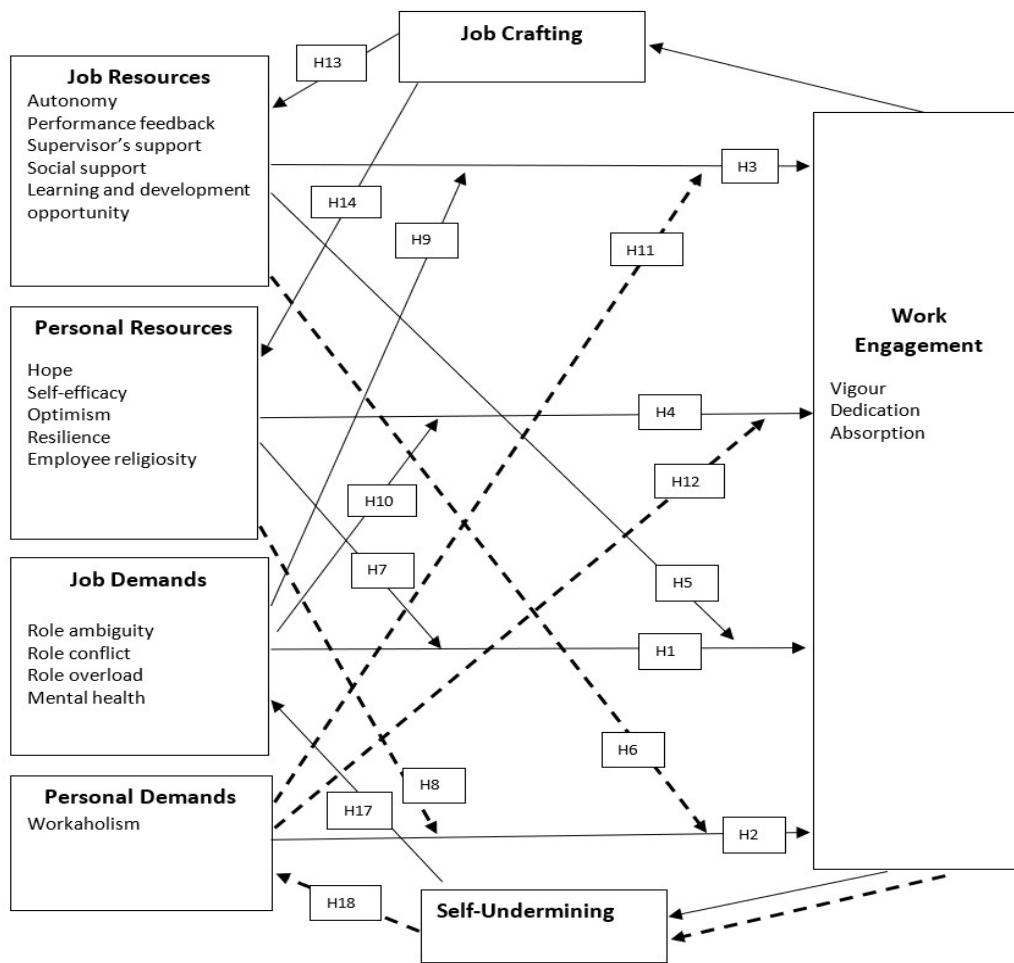
Proposition	Specification and Hypothesis
<p>Proposition 1:</p> <p>Job and personal characteristics are four types; job demands, job resources, personal resources and personal demands</p>	<p>Job demands define psychological, physical, social, and organizational components of a job that necessitate sustained mental, physical, and cognitive effort and are connected with physical and emotional costs.</p> <p>Job demands refer to the psychological, physical, social, and organizational components that have the potential incentive for effectively attaining work goals, regulating the effect of job demands, and stimulating personal development and learning.</p> <p>Personal demands are described as the standards that people set for their own actions and performance, which motivates them to work harder and has physical and psychological consequences.</p> <p>Personal resources are valued, actual, social, psychological, or symbolic possessions that could be utilized to improve performance in specific aspects.</p>

Proposition	Specification and Hypothesis
<p>Proposition 2: Demands (job and personal) and resources (job and personal) invite two procedures.</p>	<p>Process of health impairment: the demands of job and personal obligations cause employees to exert more effort, which depletes their psychological, physical, and cognitive resources and has a negative impact on their level of work engagement.</p> <p><i>H1₀: Job demands do not have a significant negative influence on work engagement.</i></p> <p><i>H1_a: Job demands have a significant negative influence on work engagement.</i></p> <p><i>H2₀: Personal demands do not have a significant negative influence on work engagement.</i></p> <p><i>H2_a: Personal demands have a significant negative influence on work engagement.</i></p> <p>Process of motivation: the job and personal resources meet the fundamental psychological requirements and encourage workplace involvement.</p> <p><i>H3₀: There is no significant positive influence of job resources on work engagement.</i></p> <p><i>H3_a: There is a significant positive influence of job resources on work engagement.</i></p> <p><i>H4₀: There is no significant positive influence of personal resources on work engagement.</i></p> <p><i>H4_a: There is a significant positive influence of personal resources on work engagement.</i></p>
<p>Proposition 3: Demands (job and personal) and resources (job and personal) have a multiplicative effect on work engagement.</p>	<p>The effect of job and personal demands on engagement at work is lessened by job resources.</p> <p><i>H5₀: Job resources do not moderate the relationship between job demands and work engagement.</i></p> <p><i>H5_a: Job resources moderate the relationship between job demands and work engagement.</i></p> <p><i>H6₀: Job resources do not moderate the relationship between personal demands and work engagement.</i></p> <p><i>H6_a: Job resources moderate the relationship between personal demands and work engagement.</i></p> <p>Personal resources weaken the effect of job and personal demands on work engagement.</p> <p><i>H7₀: There is no moderating effect of personal resources on the relationship between job demands and work engagement.</i></p> <p><i>H7_a: There is a moderating effect of personal resources on the relationship between job demands and work engagement.</i></p> <p><i>H8₀: There is no moderating effect of personal resources on the relationship between personal demands and work engagement.</i></p>

Proposition	Specification and Hypothesis
<p>Proposition 3: Demands (job and personal) and resources (job and personal) have a multiplicative effect on work engagement.</p>	<p><i>H8a: There is a moderating effect of personal resources on the relationship between personal demands and work engagement.</i></p> <p>Job demands decline the effect of personal and job resources on work engagement.</p> <p><i>H9o: There is no moderating effect of job demands on the relationship between job resources and work engagement.</i></p> <p><i>H9a: There is a moderating effect of job demands on the relationship between job resources and work engagement.</i></p> <p><i>H10o: There is no moderating effect of job demands on the relationship between personal resources and work engagement.</i></p> <p><i>H10a: There is a moderating effect of job demands on the relationship between personal resources and work engagement.</i></p> <p>Personal demands decrease the influence of job and personal resources on work engagement.</p> <p><i>H11o: There is no moderating effect of personal demands on the relationship between job resources and work engagement.</i></p> <p><i>H11a: There is a moderating effect of personal demands on the relationship between job resources and work engagement.</i></p> <p><i>H12o: There is no moderating effect of personal demands on the relationship between personal resources and work engagement.</i></p> <p><i>H12a: There is a moderating effect of personal demands on the relationship between personal resources and work engagement.</i></p>
<p>Proposition 4: Job crafting</p>	<p>Job crafting is the act of employees taking the initiative to alter the demands and resources of their jobs in order to better match the job's design with their own skills and preferences. Job crafting is anticipated to boost job and personal resources to promote engagement at work.</p> <p><i>H13o: Job crafting does not positively influence the job resources.</i></p> <p><i>H13a: Job crafting positively influences the job resources.</i></p> <p><i>H14o: Job crafting does not positively influence the personal resources.</i></p> <p><i>H14a: Job crafting positively influences the personal resources.</i></p> <p><i>H15o: There is no mediating effect of job resources on the relationship between job-crafting and work engagement.</i></p> <p><i>H15a: There is a mediating effect of job resources on the relationship between job-crafting and work engagement.</i></p> <p><i>H16o: There is no mediating effect of personal resources on the relationship between job-crafting and work engagement.</i></p> <p><i>H16a: There is a mediating effect of personal resources on the relationship between job-crafting and work engagement.</i></p>

Proposition	Specification and Hypothesis
<p>Proposition 5: Job self-undermining</p>	<p>Employees who self-undermine themselves engage in dysfunctional behaviors that obstruct performance and may even lead to conflict (such as poor communication or aggressive behavior). It is anticipated that self-undermining would make it harder to balance job and personal demands and cause stress.</p> <p><i>H17₀: Self-undermining does not positively influence job demands.</i></p> <p><i>H17_a: Self-undermining positively influences job demands.</i></p> <p><i>H18₀: Self-undermining does not positively influence personal demands.</i></p> <p><i>H18_a: Self-undermining positively influences personal demands.</i></p> <p><i>H19₀: Job demands do not mediate the relationship between self-undermining and work engagement.</i></p> <p><i>H19_a: Job demands mediate the relationship between self-undermining and work engagement.</i></p> <p><i>H20₀: Personal demands do not mediate the relationship between self-undermining and work engagement.</i></p> <p><i>H20_a: Personal demands mediate the relationship between self-undermining and work engagement.</i></p>
<p>Proposition 6: Reciprocal relationship</p>	<p><i>H21₀: Job crafting does not mediate the reciprocal relationship between job resources and work engagement.</i></p> <p><i>H21_a: Job crafting mediates the reciprocal relationship between job resources and work engagement.</i></p> <p><i>H22₀: Job crafting does not mediate the reciprocal relationship between personal resources and work engagement.</i></p> <p><i>H22_a: Job crafting mediates the reciprocal relationship between personal resources and work engagement.</i></p> <p><i>H23₀: Self-undermining does not mediate the reciprocal relationship between job demands and work engagement.</i></p> <p><i>H23_a: Self-undermining mediates the reciprocal relationship between job demands and work engagement.</i></p> <p><i>H24₀: Self-undermining does not mediate the reciprocal relationship between personal demands and work engagement.</i></p> <p><i>H24_a: Self-undermining mediates the reciprocal relationship between personal demands and work engagement.</i></p>

Note: All the hypotheses will be tested at the 5% statistical significance level.



Note: Solid lines denote already established and tested relationships while the dashed lines signify newly less frequently tested relationships.

Figure 2: Research framework

3. METHODOLOGY AND RESULTS

Participants and Procedure

Longitudinal data was gathered in two waves from the employees in thirty Malaysian organizations that participated in this study. Respondents came from non-government as well as health, education, finance, and banking organizations. The size of the organizations ranged from 50 to 4000 employees. Questionnaires were distributed via mail. All participants received the same instructions for filling out the questionnaire, and the researcher obtained ethical approval from the “Ethics Committee for Research Involving Human Subjects (JKEUPM)” prior to data collection. To test the core processes of JD-R theory (strain and motivation process) with demands (job and personal) and resources (job and personal) as well as examine the job crafting and self-undermining, this study was directed both cross-sectionally and longitudinally to test the hypotheses over time as well as compare the findings with literature (largely cross-sectional).

Time 1 (T1) surveys were conducted in January 2023 with approximately 2437 respondents in Malaysia. A total of 473 (19.41% of the overall response rate) usable questionnaires were returned at T1. The questionnaire for T1 was related to the construct of job resources, personal resources, job demands, personal demands, and work engagement. The questionnaire was administered for the second Time 2 (T2) in July 2023 (6-month time lag). The questionnaire for T2 was related to the construct of employee work engagement, job crafting, self-undermining, job demands, job resources, personal demands, and personal resources.

In comparison to the first survey for the first questionnaire, fewer people responded to the second survey for the second questionnaire. The questionnaire was distributed to the respondents of T1, and the questionnaire distribution process was similar to T1. A total of 199 (42.07% of the response rate from the respondents of T1) usable questionnaires were accepted at T2.

Table 2: Demographic Characteristics

Variable	% (n)
Gender	Female: 70.85% (141)
	Male: 29.15% (58)
Age	Range: 18-63 years
	Median: 34 years
	Standard deviation: 7
Marital status	Married: 57.29% (114)
	Divorce/ single: 42.71% (85)
Work hours per week	Range: 7-103 hours
	Median: 39
	Standard deviation: 6
Education	PhD: 10.55% (21)
	Master: 16.58% (33)
	Bachelor: 39.20% (78)
	Diploma: 33.67% (67)

Measures

The researchers used the five-point Likert scale questions to collect data by including 1 for strongly disagreed to, 5 for strongly agreed, and an option that respondents can choose if they did not want to respond. The questionnaire of nine items measured employee work engagement (adapted from Schaufeli et al., 2006), and the questionnaire of job demands (conflict of roles, ambiguity about roles, role overload, mental health) had a total of 17 items, adapted from Rizzo et al. (1970), Seashore et al. (1982), WHO-5-Well-Being Questionnaire (Topp et al., 2015) were utilized in this research. The twenty-item measure (adapted from Rothmann et al., 2006; Tones & Pillay, 2008) of job resources (social support, autonomy, learning and development opportunities, supervisor's support, performance feedback), nineteen item measure (adapted from Luthans et al., 2007; Plante & Boccaccini, 1997) of personal resources (hope, self-efficacy, optimism, resilience, employee religiosity), seven items of the Bergen work addiction scale (adapted from Andreassen et al., 2012) as a measure of personal demand (workaholism), the ten-item version of job crafting (adapted from Bakker et al., 2018) and six-item version of self-undermining (adapted from Bakker & Wang, 2020) were included as measures in this research.

Data Analysis

The T1 and T2 samples were tested for distinctiveness by assessing the path coefficient using Partial Least Squares Structural Equation Modelling (PLS-SEM). This study was conducted to test the hypotheses H1a-H12a and H13a-H24a based on the collected data of T1 and T2, respectively. The null hypotheses (H10 - H240) were rejected, and the alternative hypotheses (H1a-H24a) were supported, as indicated by the results presented in Table 3.

Table 3: Path-coefficient results

Hypothesis (T1)	Original sample	Sample mean	SD	t-value	p-value
H1 _a : Job demands have significant negative effect on work engagement	-0.382	-0.386	0.057	6.738	0.000
H2 _a : Personal demands have significant negative effect on work engagement	-0.235	-0.220	0.062	3.777	0.000
H3 _a : There is significant positive influence of job resources on work engagement	0.082	0.083	0.039	2.124	0.034
H4 _a : There is significant positive influence of personal resources on work engagement	0.194	0.197	0.044	4.459	0.000
H5 _a : Job resources moderate the relationship between job demands and work engagement	-0.142	-0.130	0.060	2.365	0.018
H6 _a : Job resources moderate the relationship between personal demands and work engagement	-0.124	-0.128	0.053	2.353	0.019
H7 _a : There is moderating effect of personal resources on the relationship between job demands and work engagement	-0.348	-0.356	0.069	5.051	0.000
H8 _a : There is moderating effect of personal resources on the relationship between personal demands and work engagement	-0.216	-0.219	0.055	3.912	0.00
H9 _a : There is moderating effect of job demands on the relationship between job resources and work engagement	0.104	0.115	0.053	1.968	0.050
H10 _a : There is moderating effect of job demands on the relationship between personal resources and work engagement	0.138	0.136	0.053	2.623	0.009
H11 _a : There is moderating effect of personal demands on the relationship between job resources and work engagement	-0.256	-0.253	0.078	3.269	0.001
H12 _a : There is moderating effect of personal demands on the relationship between personal resources and work engagement	-0.037	-0.036	0.017	2.114	0.035

Hypothesis (T2)	Original sample	Sample mean	SD	t-value	p-value
H13 _a : Job crafting positively influences the job resources	0.509	0.510	0.079	6.451	0.000
H14 _a : Job crafting positively influences the personal resources	0.540	0.542	0.058	9.318	0.000
H15 _a : Job resources mediate the relationship between job crafting and work engagement	0.114	0.117	0.035	3.226	0.001
H16 _a : Personal resources mediate the relationship between job crafting and work engagement	0.044	0.043	0.021	2.094	0.036
H17 _a : Self-undermining positively influences the job demands	0.031	0.032	0.017	1.974	0.048
H18 _a : Self-undermining positively influences the personal demands	0.207	0.222	0.076	2.720	0.007
H19 _a : Job demands mediates the relationship between self-undermining and work engagement	0.674	0.673	0.046	14.537	0.000
H20 _a : Personal demands mediates the relationship between self-undermining and work engagement	0.296	0.303	0.054	5.503	0.000
H21 _a : Job crafting mediates the reciprocal relationship between work engagement and job resources	0.649	0.650	0.054	11.911	0.000
H22 _a : Job crafting mediates the reciprocal relationship between work engagement and personal resources	0.058	0.056	0.023	2.471	0.016
H23 _a : Self-undermining mediates the reciprocal relationship between work engagement and job demands	0.138	0.139	0.039	3.556	0.000
H24 _a : Self-undermining mediates the reciprocal relationship between work engagement and personal demands	0.142	0.138	0.061	2.317	0.021

Note: The corresponding null hypothesis stated in Table 1 is rejected and the alternative hypothesis (H_a) is supported at the 5% statistical significance level if the associated p-value is less than 0.05

4. DISCUSSION

By examining the effects of job demands, personal demands, job resources, and personal resources, as well as their interactions on employee work engagement, researchers addressed the crucial roles of job crafting and self-undermining in the JD-R theory. Hence, this study has brought novelty in the literature on JD-R theory by developing the hypotheses H6a, H8a, H11a, H12a, H15a, H16a, H18a, H19a, H20a and H24a.

The basic assumptions of the JD-R theory are supported by our findings, which posit a positive relationship between resources (job and personal) and work engagement and a negative relationship between demands (job and personal) and work engagement. The research results supported alternative hypotheses H1a, H2a, H3a, and H4a that job demands (role ambiguity, role conflict, role overload, and mental health) and personal demands (workaholism) have significant negative effects on work engagement, as well as job resources (autonomy, performance feedback, supervisor's support, social support, learning and development opportunity) and personal resources (hope, self-efficacy, optimism, resilience, employee religiosity) have significant positive influences on work engagement among the employee of Malaysia. Hakanen et al. (2008) identified that job resources predict work engagement. Xanthopoulou et al. (2013) showed that personal resources (self-efficacy) have a positive relation with work engagement, but optimism has no significant relation with engagement. Job demands and personal demands fundamentally cost effort, while job resources and personal resources fulfill psychological needs. Job demands and job resources have unique effects on work engagement (Bakker & Demerouti, 2018). The original version of the JD-R Model (Demerouti et al., 2001) proposed that if daily workloads become chronic overload, job demands can initiate a health-damaging process. Job demands cause chronic fatigue, eventually leading to physical health problems (including cardiovascular disease).

On the other hand, job resources initiate the motivational process. Because they address basic needs and give employees a sense of purpose, employment resources are motivating and have a positive impact on work engagement (for example, satisfying levels of vigor, dedication, and absorption; Schaufeli & Bakker, 2004). Conservation of resources theory (Hobfoll, 2002; Hobfoll et al., 2018) addresses personal demands as the factor that threatens, obliterates, or depletes valued personal resources. In this context, workaholism is included as personal demands that individuals experience and strive to diminish.

The alternative hypotheses H5a, H6a, H7a, H8a, H9a, H10a, H11a, and H12a were tested to investigate the involvement of the interaction between demands (job and personal) and resources (job and personal). As demands (job and personal) have a significant negative effect on work engagement, job resources decrease the effect of demands (job and personal) on work engagement by playing a moderating role. Similarly, personal resources decrease the effect of demands (job and personal) on work engagement by its moderating effect. Thus, hypotheses H5a, H6a, H7a, and H8a were supported in line with the previous studies. Resources for jobs may reduce the negative impact of work demands on employee engagement (e.g., Bakker et al., 2005; Xanthopoulou et al., 2007). Employees who have plenty of job resources available can cope better with their daily job demands. Bakker & Demerouti (2017) suggested more research to test the moderating effect of personal resources on the relationship between job demand and work engagement. In line with their suggestions, our results echo the findings of Panatik et al. (2011) and Chen (2022) that personal resources moderate the influence of job demands on work engagement. The outcome validates the buffering concept proposed by Kahn and Byosserie (1992) and the JD-R model's resource buffering assumption (Demerouti et al., 2001; Schaufeli & Bakker, 2004).

On the other hand, since resources (job and personal) have a significant positive effect on work engagement, job demands (acts as moderator) decrease the influence of resources (job and personal) on work engagement, and personal demand (as moderator) decrease the effect of resources (job and personal) on work engagement. Therefore, hypotheses H9a, H10a, H11a, and H12a were supported in line with the earlier studies. Bakker & Demerouti (2014) found that job demands amplify the effect of job resources on work engagement, and Tremblay and Messervey (2011) and Bakker and Sanz-Vergel (2013) detailed that job demands increase the effect of personal resources on work engagement. The job demands act as challenges for the employees who particularly love and

enjoy their work. Thus, job resources have a significant positive influence on work engagement when job demands are high.

JD-R theory has incorporated two self-reinforcing paths: positive self-reinforcing, known as job crafting, and negative self-reinforcing is, self-undermining (Bakker & Demerouti, 2017). Based on the result of the present study, job crafting has a significant positive influence on job resources (H13a), and job crafting has a positive effect on personal resources (H14a) that are similar to the past studies, for example, Demerouti (2014) and Bakker and Demerouti (2018) indicated that job crafting definitely could lead to more job resources and personal resources. Hypothesis H16a (personal resources mediate the relationship between job crafting and work engagement) was developed based on the support for H4a (personal resources have a significant effect on work engagement) using T1 data and H14a (job crafting has an effect on personal resources) using T2 data. Since job resources influence employee work engagement (H3a) using T1 and job crafting affects job resources (H13a) using T2, hypothesis H15a was developed that job resources mediate the relationship between job crafting and work engagement. The results of statistical analysis using T2 show that hypotheses H15a and H16a had been supported, indicating a mediating effect of resources (job and personal) on the relationship between job crafting and work engagement. Demerouti (2014) found a similar result that job resources and personal resources mediate the link between job crafting and work engagement. Self-undermining has a significant effect on job demands (H17a) and personal demands (H18a). The hypotheses were accepted by the statistical analysis and supported by the previous studies, for example, Bakker & Wang (2020) and Golu et al. (2022) self-undermining increases the existing level of job demands, and most of the demands are correlated with self-undermining positively (Golu et al., 2022).

Data analysis from T1 demonstrated that job demands have an effect on work engagement (H1a), and self-undermining has an impact on job demand (H17a), according to the T2 data. Thus, hypothesis H19a for T2 was developed that job demands mediate the relationship between self-undermining and work engagement. This result has been supported by Golu et al. (2022), who state that self-undermining leads to increased job demands that could decrease work engagement. Personal demands have an effect on work engagement (H2a), and self-undermining has an effect on personal demands (H18a) based on the statistical analysis of T1 and T2, respectively. Based on this concept, hypothesis H20a was developed using T2, which stated the mediating effect of personal demands on the relationship between self-undermining and work engagement.

The alternative hypotheses H21a, H22a, H23a, and H24a address the mediating effect of job crafting and self-undermining, respectively, on the reciprocal relationship between exogenous variable (work engagement) and endogenous variable (job resources, personal resources, job demands, and personal demands) for T2. Based on the analysis of T2 collected data from Malaysian employees, these hypotheses were supported. Job crafting mediates the reciprocal relationship between work engagement and resources (job and personal). When employees are engaged in work, it inspires them for job crafting, which leads them to increase job resources and personal resources. Self-undermining mediates the reciprocal relationship between work engagement and demands (job and personal). Employees' engagement in work decreases self-undermining, which affects job demands and personal demands.

Bakker and Demerouti (2018) found a similar result that self-undermining leads to a loss cycle of demands, stress, and undesirable behavior, while a gain cycle of resources, work engagement, and desired behaviors is caused by employee job crafting over time. Job crafting mediates the reciprocal link between work engagement and job resources, supporting the hypotheses of expanded JD-R theory (Bakker and Demerouti, 2017) as well as the reciprocal relationship between personal resources and work engagement, while self-undermining behaviors were found to be mediating the reciprocal association of job demands with work engagement as well as the reciprocal relationship between work engagement and personal demands (e.g. Simbula et al., 2011; Xanthopoulou et al., 2009).

5. PRACTICAL IMPLICATIONS AND LIMITATIONS

Practical Implication

Our findings generally highlight the significance of enhancing employee's job and personal resources along with decreasing job and personal demands at work. Employees who have substantial resources from their jobs and personal context might reduce the effect of job and personal demands on their work engagement. Similarly, job and personal demands minimize the impact of job and personal resources on work engagement. Employees with job crafting and self-undermining, however, are capable of minimizing such impacts on their work engagement. In addition to making an attempt to reduce job demands (role ambiguity, role conflict, role overload and mental health) as widely proposed by existing studies (e.g., Skaalvik, 2020), this study suggests that managers help improve employees' personal and job resources at work, which can be achieved by developing and implementing human resource practices that help improve employees' autonomy, performance feedback, supervisor's support, social support, learning and development opportunity, hope, self-efficacy, optimism, resilience, employee religiosity. Researchers especially focused on personal demands, for example, workaholism, which plays a significant role on work engagement in the workplace.

The findings highlight particular needs for the creation and implementation of interventions that support job crafting behaviors in the workplace. Job crafting behaviors enable employees to match their jobs to their personal knowledge, skills, and abilities to increase job and personal resources. Because previous investigations have demonstrated that supportive management and job flexibility positively impact personal and collaborative job crafting behaviors (see Leanna et al., 2009), such treatments may be put into practice either through personal job crafting or in the context of work redesign. Training as described by van den Heuvel et al. (2015), includes classes, a diary for each week's creation, and sessions for the refraction. Conversely, self-undermining behaviors are viewed as mechanisms that are responsible for increasing employees' job and personal demands for leaving their assigned work goals.

This can be achieved, for example, by providing employees with regular training to help them effectively handle difficult contacts with customers, establishing particular SOPs for staff to follow when their workload is harder than normal, and contesting their efforts to help them in order to reach their objectives and receive recognition and appreciation.

Limitations

Although the current study adds to the body of data supporting the necessity for further dynamic interpretation of JD-R theory, it contains important flaws that should be acknowledged. Because all data in this study came from self-report questionnaires, it is likely that common method variance overestimated the observed associations between variables (Podsakoff et al., 2003). To assess the possibility of shared strategy variance, we used the Harman single-factor test. Nevertheless, this strategy has drawn criticism (e.g., Aguirre-Urreta & Hu, 2019). A single common method bias approach (Podsakoff et al., 2003) would have been practicable in the setting and underlying data of this study. Additional post hoc statistical procedures are recommended to handle potential common method bias. As there is currently no highly reliable gold standard, the employment of this alternative method is strongly discouraged (Richardson et al., 2009). Future research should incorporate precautions to lessen the danger of common method variance (CMV), such as constructing their measurements on a variety of sources, including measurable outcomes (such as productivity and absence due to sickness) and evaluations from viewers, managers, or colleagues.

The fact that this study was conducted in Malaysia limits the finding's venerability to other organizations, particular professions, or the Malaysian employed population; the sample was composed of both blue- and white-collar workers. Based on many nations, future studies might be conducted.

6. CONCLUSIONS

According to JD-R theory, high-difficulty job demands, personal demands, job resources, and personal resources, all work together to promote or decrease employee engagement, which has significant organizational implications. In order to prevent burnout and maintain engagement, employees should utilize job crafting, proactive vitality management, and exciting work design, in line with the JD-R theory, which describes how businesses and their managers can have an impact on employee well-being. We look at the development of JD-R, the work-home resources paradigm, and multidimensional methods. We anticipate that this work will advance the field and detail potential directions for further study. New research on job engagement by including both people and their surroundings might be undertaken.

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