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RESEARCH ARTICLE

Fostering Engagement in the Gig Economy: The Impact of JD-R Model

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ABSTRACT

In the digital age, the gig economy has recently emerged as a prominent issue in an independent evaluation of current work practices. In Malaysia's gig economy, there are numerous job opportunities, and the number of gig workers is steadily expanding. Algorithmic management and monitoring are essential success elements for gig marketplaces. Encouragement to participate in gig labour is one of the primary goals of monitoring gig platforms, but increasing gig workers' work engagement is difficult. The Job Demands-Resources (JD-R) model is a major approach for investigating work engagement. The purpose of this research is to investigate the working circumstances of gig workers using the well-recognized and well-established JD-R theory to analyse their work engagement. The early JD-R model focused solely on workplace factors. However, in line with psychological theories that explain behaviour through the interplay of personal and environmental qualities, the current conceptualization of the JD-R model includes personal resources as an indicator of work engagement. A convenience sample of 318 gig workers completed a questionnaire measuring workload, time pressure, job autonomy, social support, psychological capital, and work engagement. The analysis was conducted using SPSS and Smart PLS 4 software. The findings revealed that work engagement is influenced by workload, job autonomy, social support, and psychological capital. Workload, job autonomy, and social support are strong indicators of gig workers' work engagement. Both managerial implications and areas for future research topics are highlighted. This work contributes by empirically testing the implementation of the JD-R model, specifically in Malaysia's gig economy.

INTRODUCTION

The term "gig economy" refers to an unstructured and flexible work schedule that utilizes internet apps to connect gig workers, consumers, and employers directly (Mohamed Jaafar & Nik Mat, 2021). The term "gig" originated in the 1920s, when jazz music was extremely popular in the United States. Jazz musicians work flexible hours and do not get job benefits. Later, in the 1990s, the gig economy expanded dramatically in the digital age (Whitehead, 2019). In the digital age, the gig economy has lately arisen as a crucial topic for an objective examination of contemporary labour practices. The growing use of the internet and smartphones connects online users from various countries. This allows organizations to engage with employees remotely via digital platforms and convey talent requirements (Healy et al., 2017). Grab, Uber, and Foodpanda are popular gig economy applications.

Malaysia's gig economy offers a diverse range of professions, and the number of gig workers continues to grow. According to Malaysia's Social Security Organisation (SOCSO) figures, as of September 24, there were 194,800 persons under SPS Lindung and 13,333 self-employed workers under the Penjana Gig scheme. Furthermore, the number is expected to increase as gig labour becomes more desirable as online platforms expand, particularly in the aftermath of the Covid-19

epidemic (Daim, 2021). Many individuals are involved in start-ups and e-hailing, which is starting to dominate the gig economy. Grab Malaysia today employs over 10,000 food delivery riders and e-hailing drivers (Supramani, 2021).

While encouraging gig workers to participate in gig labour is one of the primary goals of monitoring gig platforms, improving gig workers' work engagement is a challenging task. Bearing in mind that the gig workers are not directly involved in the platform's automated information collecting process and do not interact with it in person, the work engagement of gig workers deserves academic and industry attention. The Job Demands-Resources (JD-R) theory and model are crucial for organizations seeking a comprehensive approach to employee engagement and health (Berthelsen et al., 2018). The JD-R model, a well-known framework for analysing work engagement, will be used in this paper to investigate the working conditions of gig workers.

2. LITERATURE REVIEW

2.1 WORK ENGAGEMENT

Work engagement (Mackay et al., 2017) refers to an overall construct comprised of cognitive, physical, and emotional energy and expressed as a state of dedicating all energies to work for the purpose of making changes. Schaufeli et al. (2002) defined work engagement as "… a positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption." Absorption is enthusiastically involved in work and fully attentive to the extent where time goes swiftly and it is difficult to withdraw from the current job. Dedication is characterized by a feeling of importance, passion, creativity, pleasure, and difficulty. Vigour is having a lot of energy when working, desire to exert effort, and tenacity when facing hardship (Schaufeli et al., 2002).

Work engagement not only represents health-related aspects, but also motivation-related aspects. Work engagement, which is basically a motivating variable (Christian et al., 2011), entails allocating personal resources toward the tasks related to the job title (Rich et al., 2010). Employees who are engaged have an emotive attachment to their job tasks, which they perceive as delightful instead of frustrating (Vecina et al., 2012).

Bakker and Demerouti (2007) expanded on the study stream on work engagement by incorporating the ideas of job demands and job/personal resources as predictors to work engagement. Job demand affects work engagement negatively (Karatepe & Karadas, 2015) while job resource such as autonomy influences work engagement positively (Amor et al., 2021) The main factors influencing work engagement are the job and personal resources (Halbesleben, 2010).

2.2 JOB DEMANDS-RESOURCES MODEL

The JD-R model is a popular and widely-used model. The JD-R model was first introduced by Demerouti, Bakker, Nachreiner and Schaufeli (Demerouti et al., 2001). The JD-R model predicts how job demands drain individuals via an impairment process that leads in stress and burnout, as well as how job resources boost engagement via a motivational process (Bakker & Demerouti, 2017).
The JD-R model has been used in thousands of organizations, spawned hundreds of empirical studies, and evolved into JD-R theory. Job demands are the social, organizational, physical, and psychological characteristics of a job that compel the worker to exert ongoing psychological and/or physical effort while incurring psychological and/or physiological costs (Demerouti et al., 2001). For example, workload and time pressure are job demands. Job resources are the social, organizational, physical, and psychological aspects of a job that (a) assist the worker in achieving work goals, (b) reduce job demands and their associated psychological and/or physiological costs, or (c) promote learning, personal growth, and development (Bakker, 2011). For example, job autonomy and social support are job resources. Job resources are significant even in the absence of job demands (Bakker & Demerouti, 2014).

The early JD-R model focused solely on workplace factors. However, in line with psychological theories that explain behaviour through the interplay of personal and environmental qualities, the current conceptualization of the JD-R model includes personal resources as an indicator of work engagement. Personal resources are components of one's personality or psychological characteristics that, in addition to resilience, include the capacity to successfully manage and affect one's circumstances (Adil & Kamal, 2020). Psychological capital in this study serves as a personal resource.

2.2.1 WORKLOAD AND WORK ENGAGEMENT

The workload is a measure of the total mental and/or physical effort required to perform one or more assignments with a given level of quality (Stramler, 1993). Gig workers are at risk of quantitative overload since they are exposed to a large amount of information (Poutanen et al., 2019). Furthermore, the feeling of financial uncertainty forces gig workers to utilize various platforms at the same time, work on multiple gigs at once, and maintain multiple sources of information. Platform workers are sometimes unable to stop working due to unanticipated demands (Jiang et al., 2015).

Workload is one aspect that might impact the engagement environment (Bakker et al., 2011). Excessive workload can have a negative impact on work engagement since it prevents workers from carrying out job duties successfully or satisfactorily. Workload as a job demand has a negative impact on employee engagement. Although gig workers have the flexibility to pick their workload and tasks, the hefty burden can be difficult at times. Therefore, hypothesize:

Hypothesis 1. Workload is negatively associated to work engagement.

2.2.2 TIME PRESSURE AND WORK ENGAGEMENT

Time pressure is a well-studied occupational stressor (Häusser et al., 2010). Time pressure, defined as "the extent to which workers believe they have inadequate time to complete their assigned tasks," is frequently cited as a challenging demand (Crawford et al., 2010). While time pressure has a negative influence on strain factors, it may be a motivator in specific situations (Widmer et al., 2012). However, another research questions the notion that time pressure is motivating, arguing that time pressure has both motivating and demotivating impacts (Reis et al., 2017). Until date, these disparities have been explained by variations in the quality of time pressure (Chong et al., 2011) or the actual time pressure level (Schmitt et al., 2015).

However, severe time pressure is overburdening and limiting, resulting in decreasing job motivation (Schmitt et al., 2015). Gig workers are under a lot of time pressure because they are only paid after the assignment is completed (Christie & Ward, 2019). The more orders they make, the more money they make. Even though gig workers are not overseen by a supervisor, financial constraints encourage them to work quicker and harder. As a result, time pressure is seen as a barrier stressor in this study situation. Hence, time pressure is perceived as a hindrance stressor in this study context. Therefore, hypothesize:

Hypothesis 2. Time pressure is negatively associated to work engagement.

2.2.3 JOB AUTONOMY AND WORK ENGAGEMENT

Job autonomy, as defined by Breaugh (1985) is "the degree of control of discretion a worker is able to exercise with respect to work methods, work scheduling, and work criteria" . Autonomy is also highlighted as a critical psychological demand in self-determination theory (Ryan & Deci, 2000), which might mitigate the negative impact of depression on employee well-being (Li, 2019). Many people are drawn to the gig economy because of its autonomy and flexibility (Keith et al., 2019). Gig workers typically have more autonomy than traditional workers, which is a desired job

characteristic. However, gig workers' autonomy may not satisfy their expectations (Keith et al., 2020).

Bakker and Demerouti (2017) discovered that job autonomy can boost employee engagement and well-being. According to the self-determination theory (Gagné & Deci, 2005), autonomy is a tool for helping individuals meet their inherent needs and is highly linked to employee engagement. Prior studies by Hakanen et al. (2006) and Vera et al. (2016) have shown that job resources (rather than job demands) might improve work engagement, particularly job autonomy (Bakker & Demerouti, 2007). According to a study done by Boamah & Laschinger (2015), job autonomy is a significant predictor of work engagement. Spiegelaere et al. (2016) investigated the relationship between several measures of autonomy and job engagement and discovered that all examined dimensions of autonomy are positively related to work engagement. Therefore, hypothesize:

Hypothesis 3. Job autonomy is positively associated to work engagement.

2.2.4 SOCIAL SUPPORT AND WORK ENGAGEMENT

Social support is defined as the felt affection and support of family, friends, and acquaintances when faced with hardships or daily events (Cobb, 1976). Others criticized and expressed their opinions about gig workers, particularly young girls, and women. Additionally, individuals enjoy making comparisons. It was difficult to handle the comments, and they had a significant influence on self-esteem. While working in a casual and informal environment, freelancers struggle to distinguish between 'friend' and 'worker'. They are unable to tell whether they are in a social or working situation (Gross et al., 2018). These murky ties make gig workers more irritated and anxious.

Gig workers work in online environments and find themselves socially isolated. Employees require social support (Fisher & Cassady, 2019), but a few scholars have examined gig workers' social support (Gleim et al., 2019). Harter et al. (2002) observed that employees become more passionate about their occupations when their companies and leaders meet their fundamental requirements. Therefore, hypothesize:

Hypothesis 4. Social support is positively associated to work engagement.

2.2.5 PSYCHOLOGICAL CAPITAL AND WORK ENGAGEMENT

Psychological capital as per Nel and Kotzé (Nel & Kotzé, 2017) is an exceptional construct comprised of four distinct lower-class conceptions. Lower-class psychological capital comprises four constructs: resilience, optimism, hope, and self-efficacy. Self-efficacy is the ability to undertake challenging work tasks with confidence and devote the necessary effort to achieve success. Hope is thinking optimistically while remaining driven to achieve predetermined goals and taking remedial steps as necessary to ensure an individual's success. Resilience is the capacity to rebound from failure and perform successfully when faced with adversity. Optimism is the belief that one will achieve success in one day and the assessment of one's chances (Norman et al., 2010).

Psychological capital is a personal resource that has been proposed to increase work engagement. One of the key purposes of gig platform monitoring is to encourage gig workers to participate in gig work (Newlands, 2021). However, increasing gig workers' work engagement is tough. Gig workers are not directly involved in the automatic information-collecting process and have no direct interaction with the platform's administrators. Gig workers require psychological resources to sustain their involvement (Ashford et al., 2018). A study of hotel employees indicated that psychological capital had a significant and favourable impact on work engagement (Paek et al., 2015). Therefore, hypothesize:

Hypothesis 5. Psychological capital is positively associated to work engagement.

3. METHODOLOGY

3.1 PARTICIPANTS AND PROCEDURES

A total of 318 sets data were collected from gig workers in Kuala Lumpur, Selangor, Penang, Kedah, Johor, and Melaka through convenience sampling.

3.2 MEASURES

The study includes six constructs namely, workload, time pressure, job autonomy, social support, psychological capital, and work engagement. The self-administered questionnaire comprised a total of 50 items.

3.2.1 WORKLOAD

Workload was measured by 5 items from Spector & Jex (1998) on a five-point Likert-type scale (1 = never to 5 = always). A sample item reads "I have to do more work than I can do well." The Cronbach's alpha was 0.752.

3.2.2 TIME PRESSURE

Time pressure was measured by 4 items from Semmer et al. (1995) on a five-point Likert-type scale (1 = never to 5 = always). A sample item reads "I often feel that time is pressing." The Cronbach's alpha was 0.856.

3.2.3 JOB AUTONOMY

Job autonomy was measured by 9 items from Breaugh's (1985) on a seven-point Likert-type scale (1 = strongly disagree to 7 = strongly agree). A sample item reads "I am able to modify what my job objectives are." The Cronbach's alpha was 0.947.

3.2.4 SOCIAL SUPPORT

Social support was measured by 12 items from Zimet et al. (1988) on a seven-point Likert-type scale (1 = very strongly disagree to 7 = very strongly agree). A sample item reads "My family really tries to help me." The Cronbach's alpha was 0.954.

3.2.5 PSYCHOLOGICAL CAPITAL

Psychological capital was measured by 12 items from Lorenz et al. (2016) on a six-point Likert-type scale (1 = strongly disagree to 6 = strongly agree). A sample item reads "Right now, I see myself as being pretty successful." The Cronbach's alpha was 0.932.

3.2.6 WORK ENGAGEMENT

Work engagement was measured by 8 items from Schaufeli et al. (2006) on a seven-point Likert-type scale (0 = never to 6 = always). A sample item reads "At my work, I feel bursting with energy." The Cronbach's alpha was 0.94.

4. RESULTS AND DISCUSSION

SPSS was applied to analyse the demographic information of the respondents. In the sample, all the respondents are Malaysian and there were 210 male respondents (66%). 158 respondents (49.7%) were in the age group of 30–39 years and 169 (53.1%) respondents were Malay. 193 (60.7%) respondents were married and 179 (56.3%) respondents did not have a child. 140 (44%) respondents were from Melaka and 161 (50.6%) respondents were Foodpanda riders. In addition, 172 (54.1%) respondents' highest education level were SPM. 217 (68.2%) respondents were full time gig workers and 142 (44.7%) respondents worked as a gig worker for 4 to 6 years. 94 (29.6%) respondents worked 20 to 29 hours weekly. The suggested model and the connection between the hypotheses were tested using the partial least squares structural equation modelling (PLS-SEM) method using SmartPLS 4.0 software. The findings of the analysis are presented in the tables below.

4.1 MEASUREMENT MODEL

This study follows Hair et al. (2017)'s guidelines for assessing the measurement model by examining the measures' validity and reliability. The outer loadings, average variance extracted (AVE), composite reliability (CR), and discriminant validity were used to evaluate reliability and convergent validity.

As shown in **Table 1**, all factor loadings for the items were between 0.603 and 0.945, above the minimal threshold of 0.40 (Hair et al., 2017), while AVE findings ranged between 0.600 and 0.752, meeting the minimum requirement of 0.50 (Fornell & Larcker, 1981). CR was also tested to determine the structures' dependability. The CR values of all constructs exceeded the criteria (0.70) (Hair et al., 2017). All measurements have shown strong internal consistency.

Table 1 Measurement model: Outer loadings, composite reliability (CR), and average variance extracted (AVE)

Constructs	Items	Loadings	CR	AVE
Workload	W1	0.890	0.834	0.632
	W2	0.860		
	W3	0.604		
Time pressure	TP2	0.819	0.901	0.752
	TP3	0.895		
	TP4	0.885		
Job autonomy	JA1	0.849	0.954	0.697
	JA2	0.753		
	JA3	0.753		
	JA4	0.834		
	JA5	0.906		
	JA6	0.852		
	JA7	0.897		
	JA8	0.813		
	JA9	0.844		
Social support	SS1	0.921	0.959	0.663
	SS2	0.915		
	SS3	0.906		
	SS4	0.904		
	SS5	0.617		
	SS6	0.878		
	SS7	0.817		
	SS8	0.773		
	SS9	0.742		
	SS10	0.695		
	SS11	0.761		
	SS12	0.775		
Psychological capital	PC1	0.804	0.942	0.600
	PC2	0.689		
	PC3	0.789		
	PC4	0.725		
	PC5	0.746		
	PC6	0.603		

	PC8	0.897		
	PC9	0.723		
	PC10	0.759		
	PC11	0.831		
	PC12	0.903		
Work engagement	WE1	0.896	0.951	0.685
	WE2	0.927		
	WE3	0.875		
	WE4	0.945		
	WE5	0.880		
	WE6	0.702		
	WE7	0.717		
	WE8	0.821		
	WE9	0.624		
Note(s): CR = composite reliability, AVE = average variance extracted				

This study also examined the discriminant validity using the heterotrait-monotrait (HTMT) correlation ratio. Traditionally, examining cross-loading of indicators and the Fornell-Lacker criterion (Fornell & Larcker, 1981) were employed for evaluating discriminant validity. However, researchers claim that these approaches are insufficient to discover the absence of discriminant validity when compared to HTMT (Henseler et al., 2015). HTMT is then established as a superior method for assessing discriminant validity. The HTMT value is indicated as a maximum threshold of 0.90 to indicate a lack of discriminant validity. **Table 2** shows the HTMT matrix with all values <0.90, indicating good discriminant validity.

Table 2 Measurement model: Discriminant validity using Heterotrait-monotrait (HTMT) criterion

Construct	**JA**	**PC**	**SS**	**WE**	**W**
Job autonomy					
Psychological capital	0.547				
Social support	0.511	0.820			
Time pressure	0.259	0.387	0.213		
Work engagement	0.615	0.729	0.657	0.276	
Workload	0.324	0.336	0.256	0.688	0.297

Note(s): JA = job autonomy, PC = psychological capital, SS = social support, WE = work engagement, W = workload

4.2 STRUCTURAL MODEL

Table 3 and **Figure 1** show the hypothesis testing of the study. This study posited five hypotheses to examine the impact of five JD-R variables on work engagement of gig workers. Four paths (out of five) are significant, with p-values less than 0.05. The statistical results reveal that workload has positive impact on work engagement (standardised coefficient = 0.385; p = 0.000); thus, the hypothesis (H_1) is not supported as workload is expected to have negative relationship with work engagement.

The findings of this study clearly indicate that time pressure is negatively associated with work engagement (-0.158; p = 0.000); therefore, the hypothesis (H_2) is supported. It was determined from the results that job autonomy has significant positive impact on work engagement (0.382; p = 0.000); thus, the hypothesis (H_3) is supported. The results provide strong evidence that social support has significant positive impact on work engagement (0.382; p = 0.000); hence, the hypothesis (H_4) is supported. The SEM analysis shows that psychological capital is positively associated with work engagement but the relationship is not significant (0.087; p = 0.110); hence, the hypothesis (H_5) is not supported. Therefore, only H2, H3 and H4 are supported.

Table 3 Hypothesis testing

Hypothesis	Relationship	Std Beta	Std Error	t-value	P-value	Decision
H1	workload to work engagement	0.385	0.050	7.756	0.000**	not supported
H2	time pressure to work engagement	-0.158	0.040	3.901	0.000**	supported
H3	job autonomy to work engagement	0.382	0.041	9.296	0.000**	supported
H4	social support to work engagement	0.493	0.077	6.369	0.000**	supported
H5	psychological capital to work engagement	0.087	0.071	1.224	0.110	not supported

Notes: **if p-value < 0.01

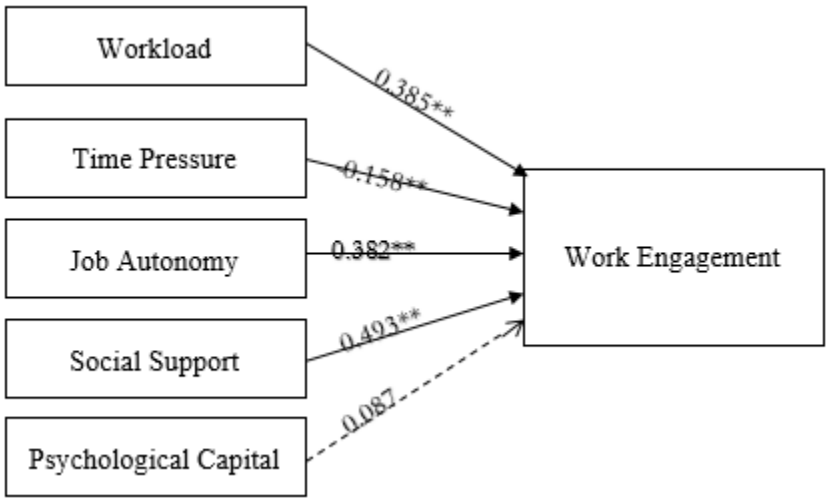

Figure 1 Hypothesis testing

5. CONCLUSION

The result indicated that workload, job autonomy, social support, and psychological capital contribute to work engagement. Workload, job autonomy, and social support are significant predictors of gig workers' work engagement. This study validates Bakker and Demerouti's (2007) JD-R model in the gig economy and also analyses its impact on work engagement. Results of SEM analysis revealed that job demand and resources have significant impact on work engagement of gig workers. The results confirmed that gig workers are having high job demands and time pressure greatly reduces their work engagement. Workload as a job demand can be either challenging or hindering to the workers. Challenging demands give employee motivation while hindering demands demotivate employee unless employees can use the required resources to face these demands (Podsakoff et al., 2007). Moderate workload motivates workers to perform better but overload will have a detrimental impact on employees (Sarwat et al., 2021). In this study, respondents do not have a high workload which will reduce work engagement. Hence, workload is a challenging job demand which motivates employees to engage in their work in this study. This finding is in line with the argument set forward by Gilboa et al (2008), Eatough et al (2011) and Sarwat et al (2021).

Overall, the findings strongly supported JD-R theory (Bakker & Demerouti, 2017) and earlier research indicating that job resources had a favourable influence on work engagement (Hakanen et al., 2006; Halbesleben, 2010; Vera et al., 2016; Xanthopoulou et al., 2009). If gig workers receive strong job resources such as job autonomy and social support, they would experience high level of work engagement. Surprisingly, the finding did not support a positive effect of psychological capital on work engagement.

Malaysia's gig economy is expected to expand further, driven by continuing digitization, altering work preferences, and a need for flexible job opportunities. The findings of this study provide the management and freelancers with assistance and support, and help them to bring about constructive changes in the organisation to ensure higher work engagement in the gig economy of Malaysia. The top management and freelancers should revisit their business policies and practices which involve reduced or manageable workload and time pressure. The results of the study also reveal that it is very important to provide employees an adequate level of independence in managing one's work.

This study is not free from limitations. Firstly, the sample was drawn from the few states in Northern, Central, and Southern regions of Peninsular Malaysia and therefore, the results may not be cross-validated on a larger population in other states such as Negeri Sembilan, Terengganu, Kuantan, and East Malaysia. The second limitation is the cross-sectional design of the study. The study happens at a certain time and does not involve manipulating variables. As a result, it restricts the causality of the findings. The causal relationships between the JD-R variables and work engagement cannot be defined. Alternatively, future studies may use a longitudinal research design.

6. AUTHOR CONTRIBUTIONS

The study was conceptualized by SWL, who designed the methodology, supervised data collection, and performed statistical analysis. CSC contributed to the study design, provided technical expertise, and assisted with data collection and analysis. YYC helped with data collection, literature review, and manuscript drafting, while also revising the manuscript for clarity. MA provided specialized expertise in data analysis, contributed to the interpretation of results, and critically reviewed the manuscript. All authors were involved in the writing and revision of the manuscript and approved the final version.

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