

Job Demands-Resources Model and Burnout among Penang Preschool Teachers: The Mediating Role of Work Engagement

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Abstract

The vulnerability to burnout among teachers from Penang preschool has become an intense issue to be addressed. Moreover, preschool teachers struggle with more burnout when job demands are high and when job resources are limited. Therefore, this paper aims to inspect the predictors of burnout among preschool teachers. Besides, the potential role of work engagement as a mediating variable was also examined in the paper. There was a total of 102 participants by Penang preschool teachers in the research. The study discovered that work engagement was in a significant negative relationship with burnout. Meanwhile, job demands were in a significant negative relationship with work engagement whereas job resources were in a significant positive relationship with work engagement. Furthermore, it is determined that job demands and job resources possessed a significant indirect relationship with burnout respectively, through work engagement as a mediator. The outcomes of this study are advantageous to both scholars and practitioners who wish to safeguard and minimize the burnout levels among preschool teachers.

Keywords: job demands, job resources, burnout, work engagement, preschool teachers.

1.0 Introduction

Early childhood education is important for young children's development. In Malaysia, Preschool education is focusing on 4 to 6 years old children. There are three Ministries involved in early childhood education. The Ministries involved are the Ministry of Education (MOE), the Ministry of Rural and the Regional Development (KEMAS), as well as the Department of National Unity and Integration (PERPADUAN) under the Prime Minister Department (Mustafa & Azman, 2013). There are also preschools under the supervision of state governments such as MAIWP (or Federal Territory Islamic Religious Council) Islamic Kindergarten and JAIS (or Selangor Islamic Religious Department) preschool, as well as private kindergartens (Ahmad, Saffardin & Teoh, 2020). Public preschools in Malaysia allow parents to register their children at an early age with fewer fees or free charges. While parents have another option to send their children to a private preschool as an alternative to give quality education to their children at an affordable price (Mustafa & Azman, 2013).

Quality teaching requires the need for teachers to continuously learn and develop as qualified teachers. Teacher learning is important for ongoing educational changes and to improve the quality of education for children. Furthermore, teaching is perceived as a challenging career that requires hard work as well as physical, mental, and emotional strength (de Wal, van den Beemt, Martens & den Brok, 2018). According to Rohaty (2013), every

early child's experiences, whether at home, in child care, or in other preschool settings, do matter. The child is regarded as the jewel of the nation as children are the potential leaders of tomorrow. Therefore, the teacher's role has changed, which they used to be solely teaching but currently also responsible for handling administrative work, disciplining, and counseling students (Roslan, Ho, Ng & Sabasivan, 2015). In Malaysia, it is reported that teachers are burdened with workloads that would lead to stress at work. This has been supported by Syed (2018) who stated that Former Education Minister, Dr. Maszlee has announced to lessen the burden of teachers. He also has introduced the nine steps intervention method to reduce the burden faced by school teachers (Ahmad et al., 2020).

Due to the heavy workload, teachers are likely to feel emotional exhaustion which is a component of burnout (Roslan et al., 2015). Burnout teachers tend to impact their teaching quality and students suffer academically and emotionally from their teachers' inconsistencies (Jacobson, 2016). Teachers who can draw upon job resources like job control, supervisory support and innovativeness may become more vigorous and dedicated. They will engage in their work and may feel a stronger commitment. However, lacking of job resources may undermine work engagement and lead to lower organizational commitment (Hakanen, Bakker & Schaufeli, 2006). Moreover, in the response to the Covid-19 pandemic, all levels and types of education are facing serious challenges, including the early childhood sector. Teachers are expected to engage in conducting remote or online teaching during at-home isolation. Hence, the request for shifting teaching to the online platforms has also been reported to increase the levels of stress and anxiety among teachers in different parts of the world (Duraku & Hoxha, 2020)

According to Ahmad et al. (2020), there are number of researches done on stress, depression and burnout among teachers but there are not many in the early childhood context. In this regard, this paper aims to investigate the predictors of burnout among Penang preschool teachers and the mediating variable of work engagement.

2.0 Literature Review and Purpose

According to the Job Demands–Resources (JD–R) Model, work characteristic is divided into two main components that are job demand and job resources (Hakanen et al., 2006). The JD–R model used in this research is to examine the predictor variables of burnout as well as the mediating variable role of work engagement. Several studies have been conducted and confirmed that burnout has a negative relationship with work engagement (Teoh & Kee, 2020), while job demands and job resources are negatively and positively related to engagement respectively (Ahmad et al., 2020).

Alzyoud, Othman and Isa (2017) argued that when individuals are committed, they are not only physically engaged in their work, they are also developmentally proactive and emotionally attached to others. However, the teacher's profession has shown a high level of exhaustion and cynicism, and these are related to the dimensions of burnout. As a result, teachers are experiencing lack of professional efficacy, where one in the organization has decreased feelings of competence, successful accomplishment, and achievement (Ford, Olsen, Khoasteh, Ware & Urick, 2019). As a result, teachers often show fatigue causing them to be unable to engage in work and reduce work effort, motivation, and organizational commitment.

On the other hand, job demands such as red tape, conflict, job insecurity and organizational politics are negatively related to work engagement (Teoh & Kee, 2019). Furthermore, job demand has been considered as the major cause of psychological pressure among educators in the contexts of early childhood education, such as workload and poor working environment (Ahmad et al., 2020). For example, if teachers are burdened with overload work for a long period, it would deplete the energy needed to accomplish their tasks and it will contribute to high burnout levels (Roslan et al., 2015).

Besides that, the high work engagement among teachers will occur if their job resources such as job control, accessibility, and supervisory assistance are available at work. However, if these resources are missing, they are likely to have low work engagement levels (Roslan et al., 2015). A lack of job resources could have negative implications on the well-being of teachers and it will lead to increasing levels of burnout. As a result, this study will investigate the Job Demands-Resources Model and burnout among Penang preschool teachers through the mediating role of work engagement as shown in Figure 1.

Based on the discussions above, we propose the following hypotheses:

H1: Job demand has a negative relationship with work engagement.

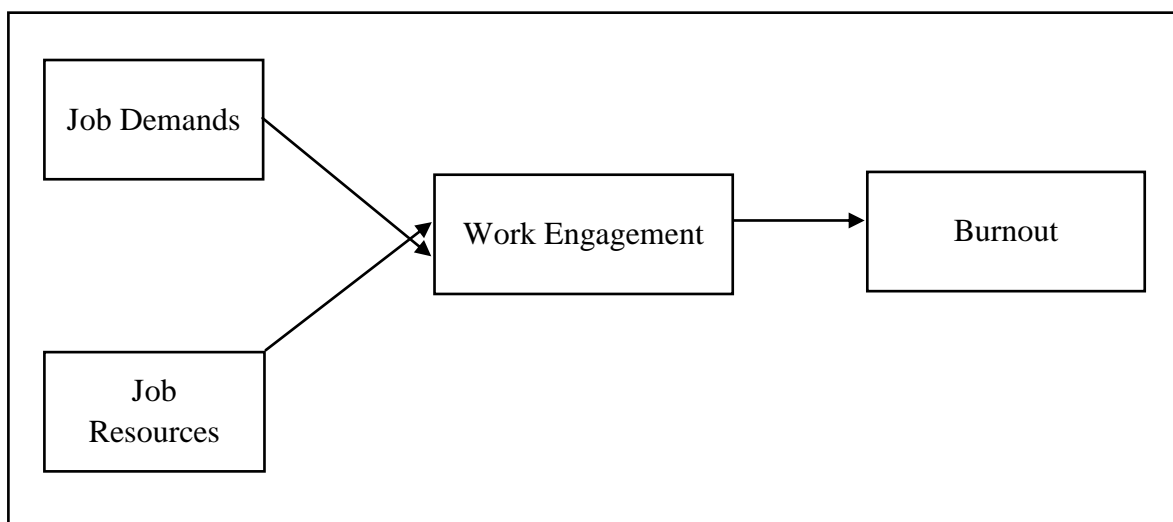
H2: Job resources has a positive relationship with work engagement.

H3: Work engagement has a negative relationship with burnout.

H4: Work engagement mediates the relationship between job demands and burnout.

H5: Work engagement mediates the relationship between job resources and burnout.

Figure 1
Research Framework



3.0 Methodology

3.1 Research Design and setting

A quantitative approach of a cross-sectional study is used in this study. All data were collected from the preschool teachers in Penang Island. However, the respondents in this research were obtained using the purposive sampling technique. The sample was drawn with one condition where only full-time preschool teachers with more than one year of working experience from Penang island is examined in this study. We considered full-time preschool

teachers with at least one year of employment because preschool teachers might not encounter burnout in the first year or beginning of their working life (Teoh & Kee, 2019).

3.2 Survey Data

A survey of the preschool teachers in Penang Island has been conducted to collect quantitative data. We approached the preschool principals and informed them of the study's purpose. After obtaining permission from the preschool's principals, the questionnaires were put in an envelope, and the preschool principals help to distribute the questionnaire to their teachers who met the criteria. Of the 313 questionnaires distributed, 102 returned the completed questionnaires, representing a response rate of 32.59%. Majority of the respondents were female (92.2%), were 21 to 25 years old (48.0%), were Chinese (67.6%), were single (77.5%), were working as a preschool teacher for 1 to 5 years (65.7%), had worked for the current preschool for 1 to 5 years (84.3%) and were Bachelor's degree holders (53.9%). Table 1 presents a summary of the respondents' profile. It is also noticed from Table 1 that about half of the respondents reported themselves experiencing burnout at work (49.0%).

Table 1
Profiles of Respondents

Demographic Variable	Category	Frequency	Percentage
Gender	Male	8	7.8
	Female	94	92.2
Age	21-25	49	48.0
	26-30	29	28.4
	31-35	9	8.8
	36-40	4	3.9
	41-45	6	5.9
	46-50	1	1.0
	51-55	3	2.9
	56-60	1	1.0
Ethnicity	Malay	15	14.7
	Chinese	69	67.6
	Indian	18	17.6
Marital Status	Single	79	77.5
	Married	21	20.6
	Widowed	2	2.0
Working Experience	1-5 years	67	65.7
	6-10 years	25	24.5
	11-15 years	2	2.0
	16-20 years	3	2.9
	21 years and above	5	4.9
Tenure with the Organization	1-5 years	86	84.3
	6-10 years	12	11.8

	11-15 years	3	2.9
	16-20 years	1	1.0
Highest Education	Diploma	37	36.3
	Bachelor's Degree	55	53.9
	Master's Degree	10	9.8
Burnout Experience	Yes	50	49.0
	No	52	51.0

3.3 Research Instrument

Job Demands-Resources Model. A 23-item scale of job demands and a 17-item scale for job resources were adopted from Jackson and Rothmann (2005). Examples of the items of job demands include “Do you have to work at speed?” and “Do you have too much work to do for job demands?”. Meanwhile, the examples of the items of job resources include “Do you have control over how your work is carried out?” and “Do you have flexibility in the execution of your job?”. A 5-point Likert scale ranging from 1 “never” to 5 “very often” is used for both scales.

Burnout. An 8-item scale for each burnout was adopted from Bakker, Demerouti, De Boer, and Schaufeli (2003). Examples of the items include “There are days when I feel tired before I arrive at work.” and “After work, I tend to need more time than in the past in order to relax and feel better”. Participants responded using a 5-point Likert scale ranging from 1 “strongly disagree” to 5 “Strongly agree”.

Work engagement A 3-item scale by Schaufeli, Shimazu, Hakanen, Salanova, and De Witte (2017) was employed to assess preschool teacher's work engagement levels. An example of the items include “At my work, I feel bursting with energy”. Participants responded using a 7-point Likert scale ranging from 1 “never” to 7 “everyday”.

4.0 Findings

As a statistical tool to investigate the measurement and structural model, Partial Least Square (PLS) modeling using the SmartPLS 3.2.8 version was used (Ringle, Wende & Backer, 2015) since it does not need to assume for normality and survey research is usually not normally distributed (Chin, Marcolin & Newsted, 2003). First of all, the full collinearity was tested to address the issue of common method variance since data was collected using a single source (Kock, 2015; Kock & Lynn, 2012). In this method, all the variables will be regressed against a common variable, and there is no bias from the single source data if the $VIF \leq 3.3$. Based on Table 4, all the VIF values are lower than 3.3. Hence, the single source bias is not a serious issue with the data collected.

4.1 Measurement Model

According to the suggestions by Anderson and Gerbing (1988), a 2-step approach was used to test the model developed. It was first examined against the measurement model to test the validity and reliability of the instruments used by following the guidelines of Hair, Risher, Sarstedt and Ringle (2019) and Ramayah, Cheah, Chuah, Ting and Memon (2018), and successively the structural model was run to test the hypotheses developed.

We tested the loadings, average variance explained (AVE), and the composite reliability (CR) for the measurement model. The loadings' values should be ≥ 0.5 , the AVE should be ≥ 0.5 , and the CR should be ≥ 0.7 . Based on Table 2, the AVEs are all greater than 0.5 and the CRs are all greater than 0.7. The loadings were also acceptable, with some loadings of job demands, job resources and burnout lower than 0.708 (Hair et al., 2019).

Next, the discriminant validity using the HTMT criterion suggested by Henseler, Ringle, and Sarstedt (2015) and updated by Franke and Sarstedt (2019) was evaluated. The HTMT values should be ≤ 0.85 for the stricter criterion, while it should be ≤ 0.90 for the more lenient criterion. As shown in Table 3, the HTMT values were all lesser than the stricter criterion of ≤ 0.85 . Thus, we can conclude that the respondents understood that the four constructs were different. These validity tests showed that the measurement models are both valid and reliable.

Table 2
Measurement Model

Constructs	Items	Loadings	AVE	CR
Job Demands	JD2	0.735	0.545	0.929
	JD3	0.770		
	JD4	0.758		
	JD7	0.712		
	JD13	0.725		
	JD14	0.720		
	JD15	0.786		
	JD19	0.711		
	JD20	0.753		
	JD21	0.717		
	JD22	0.729		
Job Resources	JR3	0.794	0.611	0.945
	JR6	0.731		
	JR7	0.773		
	JR8	0.787		
	JR9	0.804		
	JR10	0.778		
	JR11	0.850		
	JR12	0.795		
	JR13	0.770		
	JR14	0.756		
JR15	0.757			

Work Engagement	WE1	0.786	0.753	0.901
	WE2	0.953		
	WE3	0.856		
Burnout	B1	0.781	0.615	0.762
	B8	0.788		

Table 3
Discriminant Validity (HTMT)

	1	2	3	4
1. Job Demands				
2. Job Resources	0.163			
3. Work Engagement	0.258	0.135		
4. Burnout	0.356	0.805	0.234	

4.2 Structural Model

Based on the recommendations by Hair, Thomas, Hult, Ringle, and Sarstedt (2017) and Cain, Zhang, and Yuan (2016), the multivariate skewness and kurtosis were examined. The results exhibited that the data we had collected was not multivariate normal, Mardia's multivariate skewness ($\beta = 1.668, p > 0.05$) and Mardia's multivariate kurtosis ($\beta = 24.179, p > 0.05$). By following to the recommendations by Hair et al. (2019), we then reported the path coefficients, the standard errors, t-values, and p-values for the structural model using a 5,000-sample re-sample bootstrapping procedure. Furthermore, Hahn and Ang (2017) criticized that p-values were not good criteria for testing the hypothesis's significance and suggested using an integrating of criteria, such as p-values, confidence intervals, and effect sizes. Table 4 shows a summary of the criteria we have used to test the hypotheses developed.

Table 4
Hypothesis Testing Direct Effects

Hypothesis	Relationship	Std Beta	Std Error	t-values	p-values	BCI LL	BCI UL	f ²	VIF
H1	JD→WE	-0.296	0.119	2.479	0.007	-0.480	0.225	0.098	1.000
H2	JR→WE	0.213	0.101	2.116	0.017	0.036	0.368	0.050	1.411
H3	WE→B	0.186	0.108	1.729	0.042	0.356	0.035	0.034	1.676

Note: We use 95% confidence interval with a bootstrapping of 5,000

First, we assessed the effect of job demands and job resources on work engagement. The R² was 0.313 (Q² = 0.219), which shows that both predictors explained 31.3% of the variance in work engagement. Job demands ($\beta = -0.296, p < 0.05$) were shown to have a significant

negative relationship with work engagement. Thus, H1 was supported. On the other hand, job resources ($\beta = 0.213$, $p < 0.05$) were also significantly and positively related to work engagement, which led to H2 being supported. Next, we tested the effect of work engagement on burnout, with an R^2 of 0.051 ($Q^2 = 0.030$), which indicates that work engagement explained 5.1% of the variance in burnout. Nonetheless, work engagement ($\beta = -0.186$, $p < 0.05$) was shown to be significantly and negatively related to burnout, and this implies that H3 was supported.

Table 5
Hypothesis Testing Indirect Effects

Hypothesis	Relationship	Std Beta	Std Error	t-values	p-values	BCI LL	BCI UL
H4	JD→WE→B	0.160	0.023	7.021	0.000	0.116	0.204
H5	JR→WE→B	-0.065	0.015	4.347	0.000	-0.097	-0.038

Note: We use 95% confidence interval with a bootstrapping of 5,000

To evaluate the mediation hypotheses, we consider Preacher and Hayes (2004; 2008) recommendations by bootstrapping the indirect effect. It is concluded that the mediation is significant when the confidence interval does not straddle a 0. As exhibited in Table 5, JD → WE → B ($\beta = 0.160$, $p < 0.05$) was significant since its confidence interval bias-corrected 95% did not straddle a 0, which gives rise to H4 being supported. On the other hand, JR → WE → B ($\beta = -0.065$, $p > 0.05$) was also shown to be significant since its confidence interval bias-corrected 95% did not straddle a 0, and this indicates that H5 was supported.

Following the recommendations by Shmueli et al. (2019), who proposed PLSpredict, a holdout sample-based procedure generates case-level predictions on an item or a construct level using the PLS-Predict with a 10-fold procedure to check for predictive relevance. Shmueli et al. (2019) claimed that if all the item differences (PLS-LM) were lower than predictive relevance, then there is strong predictive power; if all are higher than predictive relevance, then the predictive power is not confirmed; if the majority is lower than predictive relevance, then there is moderate predictive power; if the minority is lower than predictive relevance, then there is low predictive power. Based on Table 6, half of the PLS model errors were lower than the LM model; thus, we can conclude that our model has moderate predictive power.

Table 6
PLS-Predict

Item	PLS RMSE	LM RMSE	PLS-SEM	Q ² _predict
B1	1.048	1.016	0.032	0.029
B8	0.947	0.990	-0.043	0.002

5.0 Conclusions and Managerial Implications

This study aims to investigate the effect of job demands and job resources on work engagement as well as the effect of work engagement on burnout. The study also aims to test the mediating roles of work engagement on the relationships between job demands and burnout, and between job resources and burnout. This study found that job demands have a significant negative relationship with work engagement; thus, H1 was supported. The significant negative relationship between job demands and work engagement shows that Penang preschool teachers with high levels of job demands can reduce their work engagement levels at work. This finding is consistent with the prior studies that a high level of job demands was found to decrease work engagement levels among employees (Teoh & Kee, 2018; Geisler, Berthelsen & Muhonen, 2019; Kunte & Rungruang, 2019; Riedl & Thomas, 2019). Verbruggan (2009) explained that the negative features of job demands used to make the job difficult for employees to feel engaged, which in turn fades away the feeling of enthusiasm and dedication towards their job. For this reason, the management of Penang preschools is advised to reduce the unfavorable features of job demands so that the work engagement levels among their teachers are enhanced.

The relationship between job resources and work engagement was positively significant, and hence H2 was supported. This significant relationship indicates that the high levels of job resources can trigger better work engagement levels among Penang preschool teachers. This finding concurs with the previous studies, where job resources (job control, supervisor support, climate, innovativeness, information and appreciation) were positively related to work engagement (vigor, dedication and absorption) (Demrouti, Bakker, Nachreiner & Schaufeli, 2001; Hobfoll, 2002). Saks (2006) further explained that employees tend to be engaged at work when they are reinforced with resources and benefits by their organization. Hence, it is recommended that the management of Penang preschools focuses on the efforts to impart sufficient resources to their teachers so that high levels of work engagements among teachers are benefited to the students.

Meanwhile, the relationship between work engagement and burnout was negatively significant in the study, which denotes that H3 was supported. Hence, it is implied that a high level of work engagement can decrease the burnout levels among Penang preschool teachers. This is in line with Teoh and Kee (2020), who uttered that a higher level of work engagement can induce a lower burnout level among research university academicians. Villavicencio-Ayub, Jurado-Cardenas & Valencia-Cruz (2015) argued that the exposure of job burnout can be reduced when the organization cultivates positive behaviors of work engagement via providing chances for professional advancement, work acknowledgement, a favourable working environment, job security, work-life balance and an enchanting incentive system. Considering this finding, it is suggested that Penang preschools' management promote activities which enhance work engagement levels at workplace in order to reduce the burnout levels among their teachers.

For the mediator in the study, the results showed that work engagement is a significant mediator on the relationship between job demands and burnout, and thus H4 was supported. This significant indirect relationship highlights that a high level of job demands can cause a lower level of work engagement among Penang preschool teachers, which subsequently resulting the rise of their burnout levels. Therefore, it is highly suggested to the

management of Penang preschools to look into the job demands assigned to their teachers. It is then hoped that a better job design is used to increase the levels of work engagement among preschool teachers, which ultimately minimizing their burnout levels.

Furthermore, the study's finding exhibited that the indirect relationship between job resources and burnout is significant through work engagement, which indicates the support of H5. It is implied from this significant indirect relationship that higher levels of job resources can promote for a better work engagement level among Penang preschool teachers, which successively decreasing their burnout levels. As a result, Penang preschools' management are advised to provide more necessary job resources for their teachers to observe an enhanced work engagement level as well as a minimum level of burnout indirectly.

6.0 Originality

In this paper, we advance the management literature on JD-R model by examining how JD-R impacted on burnout in the Penang preschool industry. We also build on Teoh and Kee's (2020) research that work engagement can be used as a mediator to test on the relationship between various predictors and burnout. In this study, it was found that job demands and job resources in Penang preschools can significantly reduce and increase the work engagement level among their teachers respectively. Also, a better work engagement level can promise for lower levels of burnout among teachers from Penang preschools. Furthermore, it was noticed that work engagement can play as a significant mediator between JD-R model and burnout. On the other hand, this study is priceless to academics and practitioners who hope to minimize teachers or academics' burnout levels. Since JD-R is new to the preschool industry, the present study has convinced its usefulness to improve teachers' work engagement levels as well as reducing their burnout levels.

7.0 Limitation and Future Research

In this study, the findings cannot be generalized despite its contribution to the existing literature. Future studies should employ the suggested research model among different preschools in Malaysia with a bigger sample size. Lastly, the common method variance formed due to the cross-sectional design can be addressed with the use of a longitudinal study on burnout among different preschools in Malaysia.

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