

## **MODERATING EFFECT OF PERCEIVED REMAINING TIME IN THE RELATIONSHIP BETWEEN JOB DEMANDS AND JOB STRESS**

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### **ABSTRACT**

*This study aims to investigate the moderating effect of perceived remaining time on the relationship between job demands and job stress. Using the Conservation of Resources (COR) theory to explain the moderation effect, we argue that the relationship between job demands and job stress is weakened by perceived remaining time. Data were collected using online survey on public sector employees from 32 government institutions in Indonesia (N = 220). Data were analysed using Hayes' PROCESS macro on SPSS software. Results showed that perceived remaining time moderated the relationship between job demands and job stress, such that the relationship was positive and higher when perceived remaining time was low than when perceived remaining time was high. Theoretical and practical implications are further discussed.*

**Keywords:** job demands, job stress, perceived remaining time

### **INTRODUCTION**

Job stress is known as one of the common problems that employees confront with daily at the workplace (Irawanto et al., 2015; Yozgat et al., 2013). Job stress plays an important role in decreased work performance (Irawanto et al., 2015) and health condition (Jamal, 2005; Widiyanti & Tafal, 2014). Stressors

that lead to job stress includes the work itself (i.e., job demands, hospitality job characteristics), organisation characteristics, role in the organisation (i.e., role overload, higher job position), work relation (i.e., fear of victimisation, threat of harm), career development opportunity, and external responsibility (Besral & Widiyanti, 2014, 2015; Lambert et al., 2019; Panari et al., 2010; Parker & DeCotiis, 1983; Rhineberger-Dunn & Mack, 2018).

Most studies showed that job demands (i.e., workload, emotional demands, and technology demands) is the most significant predictor of job stress (Affrunti et al., 2018; Bakker & Demerouti, 2007, 2017; Hamann & Foster, 2014; Lee et al., 2017). However, previous research also showed that the relationship between job demands and job stress is dependent on whether an individual has resources or not (Bakker et al., 2010; Bakker & Demerouti, 2007; Hessels et al., 2017; Hu et al., 2011). Studies have found many individual resources that played an important role as the moderator of the relationships, such as mindfulness, self-determination, and active coping (Grover et al., 2016; Parker et al., 2010; Schmidt & Diestel, 2013).

In this present study, we focus on perceived remaining time as the moderator on the job demands–job stress relationship, because employee perception on remaining time helps them to view how much time they still have to pursue their work goals, and this in turn would motivate them to see job demands as a challenge rather than a hindrance (Cavanaugh et al., 2000). For this reason, perceived remaining time is conceptualised as a personal resource that enables individuals to pursue goals. This study focuses on public sector employees in Indonesia because government institutions are undergoing bureaucratic reform that is characterised by changing in job demands, in which employees are needed to serve the public in a faster, righteous, and professional manner (Ahmad & Erfina, 2017; Saputra, 2017) while at the same time increasing their working hours (Laelasari & Kurniawidjaja, 2016; Primanto et al., 2014; Saputra, 2017). Thus, this study is adding the literature on the important role of job resources in the relationship between job demands and job stress.

## **LITERATURE REVIEW**

### **The Relationship between Job Demands and Job Stress**

Job stress can be explained as the feeling of a person that deviates from the normal or self-desired functioning in the workplace as the result of anticipated or missed opportunities, constraints on goal-directed behavior, or demands

leading to important but uncertain outcomes (Parker & DeCotiis, 1983). Job stress can also be explained as the unsatisfied feeling due to high job demands that exceeds the mental and physical resources which can threaten the employees well-being (Hamann & Foster, 2014; Hessels et al., 2017; Jamal, 2005). Job demands represent aspects of the job that could potentially cause strain in cases where they exceed the employee's adaptive capability (Rothmann et al., 2006). Job demands also refer to physical, psychological, social, or organisational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs (Bakker & Demerouti, 2007). Job demands include exposure to several factors, including workload, work patterns, and work environment (Purba et al., 2019) and also time pressures (Bowen et al., 2014).

Most studies showed that job demands (i.e., workload, emotional demands, and technology demands) are factors that lead to job stress in wage workers as well as self-employed contexts (Brunborg, 2008; Hessels et al., 2017; Lee et al., 2017; Perrewe & Ganster, 1989). Thus, job demands in the forms of constant exposure to work overload and high emotional demands may deplete individual mental and physical resources indicating high job stress conditions (Hessels et al., 2017).

### **The Moderating Role of Perceived Remaining Time**

Previous research showed that there was an inconsistent relations between job demands and job stress (Affrunti et al., 2018; Bakker et al., 2010; Bakker & Demerouti, 2007; Hamann & Foster, 2014; Hessels et al., 2017; Hu et al., 2011), indicating the need for moderating variables to explain the relation. Indeed, previous studies showed that job demands did not necessarily lead to job stress, when individuals possess resources that buffers the relationship between the variables (Affrunti et al., 2018; Brunborg, 2008; De Croon et al., 2005). According to Job Demands–Resources Model (Bakker & Demerouti, 2007), jobs that require excessive demands would lead to high job stress when the demands are not compensated by job resources. In other words, job resources moderate the positive relationship between job demands and job stress. Moderators of job demands and job stress relationship falls in the category of organisational and personal resources (Karatepe et al., 2018; Xanthopoulou et al., 2007). Previous studies showed some organisational resource factors such as job control and skill discretion that allow employee to keep control of their jobs, helps workers cope with job demands and thus, contributes to sustaining job well-being and reduction of stress (Portoghese et al., 2014; Viotti & Converso, 2016). Other organisational factors are opportunity for learning and

development that increase the innovative capacity of workers and enterprises which allow individuals to face continuous changes and growing demands (Panari et al., 2010). An example of personal resource factors is mindfulness that helps individuals to separate environment characteristics in the workplace from their responses to them and to reduce stress among employees who face challenging work situations as a coping stress (Grover et al., 2016). Other personal factors are self-determination, an individual psychological needs for autonomy, competence, and relatedness, that buffers the relationship between stressors and job stress (Parker et al., 2010), and active coping that mitigates the adverse effects of high job demands (Schmidt & Diestel, 2013).

Based on the previous studies, particularly using Job Demands–Resources Model, organisational resources have been the most studied variable that weaken the relationship between job demands and job-related stress, including burnout (Boudrias et al., 2011; Portoghese et al., 2014). Thus, in the current study, we focused on personal resource as the moderator of the job demands–job stress relationship at least for three reasons. First, previous study (Taris, 2006) found only 10% of the published research found organisational resources as the moderator in job demands–job stress relationship, leading to a suggestion to put an end to the studying interaction between job demands and organisational resource (Grover et al., 2016). Second, personal resources need to be explored more in relation to how job demands lead to job stress, because individuals respond differently to the same stimuli in the workplace (Besral & Widiantini, 2015; Boudrias et al., 2011). Third, personal resources are more likely not well established as the boundary condition in the literature, as some researchers suggest to put personal resources as mediators rather than moderators (Grover et al., 2016; Schaufeli & Taris, 2014). Therefore, we propose perceived remaining time, a subscale of occupational future time perspective (OFTP), as a personal resources that buffers the negative effects of job demands on job stress (Zacher, 2013).

OFTP is a concept developed by Zacher and Frese (2009) for the work context based on future time perspective concept by Cate and John (2007). OFTP consists of two dimensions, namely perceived remaining opportunities and perceived remaining time. Perceived remaining opportunities is defined as individuals' perceptions of their remaining goals, opportunities and possibilities in the employment context, and perceived remaining time is defined as how much time an individual believes he or she has left in the occupational and employment context before exiting the labor force (Zacher, 2013; Zacher & Frese, 2009).

In this present study, we posit OFTP as a moderator in job demands–job stress relationship because it associates with well-being outcomes in which focus on positive future can buffer the negative outcomes of stressors (Henry et al., 2017; Rudolph et al., 2017). OFTP is also a motivational variable that may serve as an anticipation of future events (Janeiro & Isabel, 2010). OFTP can be examined as a total score of perceived remaining time and perceived remaining opportunities dimensions but can also be examined separately (Henry et al., 2017; Topa & Zacher, 2018; Zacher, 2013). Perceived remaining opportunities are considered equal to public sector employees, in which all employees regardless of their performance have rather predictable career path according to Badan Kepegawaian Negara (National Civil Service Agency – BKN, 2011). Meanwhile, perceived remaining time differs among public sector employees depending on how they see their future goals (Kooij & Zacher, 2016; Zacher, 2013; Zacher & Frese, 2009). Thus, we decided to only examine perceived remaining time as the moderator.

This study draws on Conservation of Resources (COR) theory (Hobfoll, 1989) as a theoretical framework to explain the association between job demands, job stress, and perceived remaining time. COR theory explains that resource loss leads to stress, and individuals tend to protect and search resources to avoid stressful situation (Hobfoll, 1989). According to COR theory, we argue that employees who have high job demands but at the same time also possess high perceived remaining time in the organisation tend to have low levels of job stress. In this sense, individuals who perceive that they have more time would seize demands as a challenge rather than a hindrance (Cavanaugh et al., 2000). On the contrary, individuals with high job demands and low perceived remaining time in the organisation tend to have high levels of job stress. This is because individuals who perceive less time in the organisation would tend to see demands as a hindrance rather than a challenge (Cavanaugh et al., 2000). Thus, we hypothesise that – perceived remaining time moderates the relationship between job demands and job stress – such that when perceived remaining time is high, the relationship between job demands and job stress decreases, and when perceived remaining time is low, the relationship between job demands and job stress increases.

## **METHODOLOGY**

### **Participant and Procedure**

This study was conducted in government institutions in Indonesia by online survey. In general, after the massive Indonesia bureaucratic reform of government institutions in the year 2004, job demands of public sector employees in Indonesia increased considerably in all areas (Ahmad & Erfina, 2017; Labolo & Indrayani, 2017; Murgiyono, 2010; Widhyharto, 2008). This phenomenon may lead to high job stress among public sector employees. Thus, the participant's criteria were public sector employees with a minimum length of service of two years, who work in central ministries in Jakarta.

From the convenient sampling procedure, participants from 32 government institutions responded the survey ( $N = 220$ ). More than half of the participants were female ( $N = 120$ , 54.5%). Mean age of the participants was 38.18 years old ( $SD = 10.361$ ). With regard of their length of work (job tenure), participants had been employed from 2 to 36 years and the majority had been employed for 4 years ( $N = 45$ , 20.5%). Majority of the participants ( $N = 100$ , 45.5%) have a bachelor's degree as their educational background. Other educational backgrounds consist of high school's degree ( $N = 10$ , 4.5%), diploma degree ( $N = 18$ , 8.2%), master's degree ( $N = 86$ , 39.1%), and doctoral degree ( $N = 6$ , 2.7%).

### **Data Collection**

Data were collected using self-report online survey. The link to the survey was created online using Google form and was sent to employees in government institutions in Jakarta with an introduction to the survey. We also asked participants to send the link to their colleagues at central government bodies in Jakarta. In the survey link, we ensured the participants that the survey has received an approval from the research ethics committee of the Faculty of Psychology, Universitas Indonesia. We also ensured participants that their participation was voluntary and confidential, and that they may stop their participation anytime they want. Participants are then asked to put their e-signatures in the informed consent page to participate in the survey. Among the 230 responses received, only 220 were retained. We did not use 10 data, as the participants did not meet the criteria, such as under two years of tenure or working in regional offices.

## **Measurement**

All original scales were in English and were translated into Indonesian language. Job demands scale was already translated into Indonesian language by Atan and Purba (2018). Perceived remaining time and job stress scales were translated from English to Indonesian (forward translation) and back translated from Indonesian to English afterwards. The back-translate procedure was suggested by Brislin (1970) to ensure the measures were comparable between the original and the new languages. The forward translation was conducted by a bilingual master's student majoring in English Literature, and the back translation (from Indonesian back to English) was conducted by a bilingual master's student majoring in Psychology. An expert judgment then was provided by an organisational psychologist to ensure that the meanings of the original items are intact in the new language. We did not find any deviation in item meanings both in Indonesian and English translations.

Perceived remaining time scale was measured using the 5-items developed by Zacher (2013). The scales used 5-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree. The scale scores were averaged to get the perceived remaining score, and higher scores indicated high remaining time in the organisation. An example of the item is "My occupational future seems infinite to me." The alpha coefficient of this scale is 0.78.

Job stress scale was measured using the 13-items developed by Parker and DeCotiis (1983). The scale used 5-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree. The scale scores were averaged to get the job stress score, and higher scores indicated high job stress. A sample item is: "I have too much work and too little time to do it in." The alpha coefficient of this scale is 0.924).

Job demands scale was using bahasa Indonesia version adapted by Atan and Purba (2018) from Rothmann et al. (2006). The scale was measured using 7-items and 4-point of Likert scale from 1 = never to 4 = always. The scale scores were averaged to get the job demands score, and higher scores indicated high job demand. Item examples are: "Do you have too much work to do?" and "Do you work under time pressure?" The alpha coefficient of this scale is 0.807).

Data were analysed using the Hayes' PROCESS macro version 3.3 on SPSS software. This method was used to test moderating effect of remaining time on the relationship between job demands and job stress. Descriptive statistics, correlations, and internal consistencies for study variables were also calculated prior to regression analysis.

## **Confirmatory Factor Analysis**

To assess the discriminant validity of our study variables, we performed a confirmatory factor analysis (CFA) on RStudio version 3.5.1. by comparing two models, namely 1-factor model in which all items were reflected on one general latent variable, and 3-factor model in which all items were reflected on their respective latent variables. It has been suggested that Comparative Fit Index (CFI) and Tucker–Lewis Index (TLI) values should be close to 0.9; Root Mean Square Error of Approximation (RMSEA) values less than 0.05 constitute good fit, values in the 0.05 to 0.08 range acceptable fit, values in the 0.08 to 0.10 range marginal fit, and values greater than 0.10 poor fit; and Standardised Root Mean Square Residual (SRMR) value is should be over 0.06 (Bentler, 1990; Fabrigar et al., 1999; Hu & Bentler, 1999). The model fit indices for 1-factor model were as follows: CFI = 0.673, TLI = 0.643, RMSEA = 0.109, SRMR = 0.116, while model fit indices for 3-factor model were as follows: CFI = 0.820, TLI = 0.802, RMSEA = 0.082, SRMR = 0.080. After we compared the model fit indices between 1-factor model (general latent variable) and 3-factor model (job demands, job stress, and perceived remaining time) it confirmed that 3-factor model is well established for our research model.

## **Checking for Common Method Bias**

All the variables in this study were collected at the same time using self-report online survey, raising the issue of common method bias. We used Harman's single-factor test (Podsakoff, 2003) to address this issue, by performing an exploratory factor analysis (EFA) on all the variables with SPSS statistics. We found that there were five factors that emerged with eigenvalues greater than one, accounting for 63.070% variance in all variables involved in the study. The first factor accounted for 34.034% of the variance, indicating that common method bias may not be an issue that influences the results. We also used the latent variable approach (Podsakoff et al., 2003), by performing a CFA on all variables with RStudio version 3.5.1. We compared standardised regression weights of a model with common latent variable and the proposed model. The results showed that of the 25 items, only 1 item was beyond the threshold 0.2 (Podsakoff et al., 2003). Moreover, as found in the CFA results, the discriminant validity of the latent variables is established, showing that there was no conceptual overlap in items for different constructs. Conway and Lance (2010) suggested that the discriminant validity test is necessary to rule out substantial method effects. Therefore, we argue that common method bias is not pervasive in this study.



## RESULTS

Table 1 showed means, standard deviations, and correlations between variables. Results from Table 1 showed that job tenure was significantly correlated with job stress ( $r = -0.154, p < 0.01$ ). Age also was significantly correlated with job stress ( $r = -0.180, p < 0.01$ ). Job demands had a significant positive correlation with job stress ( $r = 0.582, p < 0.01$ ). Remaining time had a negative correlation with job stress ( $r = -0.224, p < 0.01$ ). Because the correlations between our study variables are significant, we then proceed with further analyses to test the hypothesis. The hypothesis was analysed using Hayes' PROCESS macro on SPSS software. Our confidence intervals are based on bias corrected method with 5,000 bootstrap sample. Hypothesis stated that perceived remaining time moderated the relationship between job demands and job stress.

Table 1  
*Means, standard deviations, and correlations among study variables*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5
Age	38.18	10.361					
Tenure	11.90	9.500	0.884**				
Remaining time	3.37	0.821	-0.303**	-0.314**	(0.795)		
Job stress	2.78	0.853	-0.180**	-0.154**	-0.224**	(0.924)	
Job demands	2.95	0.508	-0.251**	-0.188**	0.009	0.582**	(0.807)

*Notes:*  $N = 220$ . Age and job tenure were measured in years; remaining time and job stress were measured on a 5-point Likert scale, and job demands was measured on a 4-point Likert scale. Coefficient alpha reliabilities are presented on the diagonal. \*\* $p < 0.01$ , \* $p < 0.05$ .

Table 2  
*Moderating effect of remaining time between job demands and job stress*

Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	LLCI	ULCI
Constant	-1.0403	0.8777	-1.1852	0.2372	-2.7702	0.6897
Job demands	1.5518	0.2840	5.4647	0.0000**	0.9921	2.1115
Remaining time	-0.3146	0.2672	1.1171	0.2404	-0.2121	8.413
Job demands × Remaining time	-0.1831	0.0866	-2.1159	0.0355**	-0.3537	-0.0125

*Notes:*  $N = 220$ ; *b* = coefficient; *SE* = standardised error; LLCI = lower-level confidence interval; ULCI = upper-level confidence interval. \*\* $p < 0.01$ , \* $p < 0.05$ .

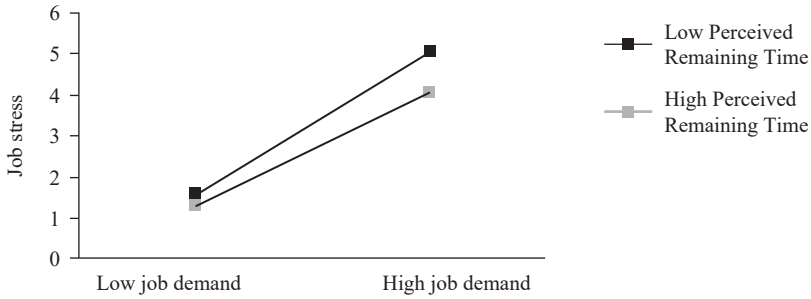


Figure 1. Remaining time as a moderator of the relationship between job demands and job stress

Results in Table 2 showed that perceived remaining time moderates the relationship between job demands and job stress ( $interaction = -0.1831$ ,  $SE = 0.0866$ ,  $p < 0.005$ , 95% CI  $[-0.3537, -0.0125]$ ). It means that perceived remaining time weakens the positive relationship between job demands and job stress as showed in Figure 1. Thus, our hypothesis was supported by the data. Figure 1 showed the simple slopes of the relation between job demands and job stress. In the case when individuals perceive low remaining time in the organisation, job demands predict job stress positively. When individuals perceive that they still have plenty remaining time in the organisation, the positive relation between job demands and job stress slightly decreases, but remains positive and significant.

## DISCUSSION

The main purpose of this study is to test the moderating effect of perceived remaining time in the relationship between job demands and job stress. The results of the present study support our hypothesis, that perceived remaining time moderated the relationship between job demands and job stress. In other words, perceived remaining time weakens the positive relation between job demands and job stress.

Drawing on COR theory, perceived remaining time is regarded as a personal resource that is important to reduce job stress. This study is in line with other studies that found personal resources, namely mindfulness, self-determination, optimism, resilience, and active coping, to buffer the effect of job demands on job stress (Boudrias et al., 2011; Giaque et al., 2013; Grover et al., 2016; Parker et al., 2010; Schmidt & Diestel, 2013).

It is interesting to note that our study finds age to be negatively related with job stress and job demands, indicating that older people are better able to cope with job demands and job stress. These findings are in line with few previous studies (Grover et al., 2016; Park et al., 2020) who also found negative relations between job demands and job stress. Our study finds that age is not related with perceived remaining time, indicating that employees may perceive differently on how much time left to pursue their career regardless of their age (Kooij & Zacher, 2016; Zacher, 2013; Zacher & Frese, 2009). Moreover, our study is in line with the study of Weikamp and Göritz (2015) that found remaining time to be negatively related with job stress. Employees with an open-ended remaining time perceive no time limits, restrictions or boundaries in their occupational future, and employees with a limited remaining time perceive that they only have little time to achieve their goals in the organisation that leads to high levels of stress. In this context, employees who hold perceived remaining time as their personal resources who are confident about their capabilities and optimistic with clearer image of their future career (Rudolph et al., 2017; Xanthopoulou et al., 2007) may identify job demands as challenges (Cavanaugh et al., 2000) that can keep themselves away from work stress.

### **Theoretical Implications**

This study contributes to the literature by demonstrating that perceived remaining time buffered the relationship between job demands and job stress. However, we should note that the magnitude of the relationship changed but remained significant. This is actually in line with previous research (Boudrias et al., 2011) that studied optimism and resilience as moderators in the relationship between job demands and job stress. They also found that although personal resources (i.e., optimism and resilience) were salient moderators of job demands-psychological distress relations, the relationship was still positive and significant regardless of the levels of personal resources. In addition, in line with previous studies, we found that job demands exerts significant main effect on job stress (Affrunti et al., 2018; Akbari et al., 2017; Bowen et al., 2014). Nonetheless, this study enriches our understanding on how personal resources weakens the negative effects of job demands on employee well-being, that may be a better moderator compared to organisational resources (Boudrias et al., 2011). As personal resources have yet been thoroughly studied as moderator variables in previous studies, we suggest future studies to consider studying diverse of personal resources as the moderators in job demands-job stress relationship to reveal its robustness in predicting job stress compared to job resources.

This recent study only uses perceived remaining time as a moderator investigating job stress in public sector employees. We suggest future studies to examine a more general population and use the total score of OFTP, as perceived remaining opportunities may also play a powerful personal resource in reducing job stress.

### **Managerial Implications**

For practical implication, based on the research findings, we suggest organisations to conduct several practices to prevent their employees from stress. First, the study findings suggest that age is negatively related to job demands and job stress, indicating that older employees tend to perceive lower job demands and less job stress. Thus, increasing employees' retirement age can be beneficial both for the organisation and older employees to allow them to contribute actively in the organisation. Second, this study suggests that high job demands would lead to lesser job stress on employees with higher remaining time than on employees with less perceived remaining time. One of the practices that can lengthen employee perceived remaining time is career counselling and second career opportunities for older employees. Kooij and Zacher (2016) found that providing learning and development opportunities lengthen employees perceived remaining time. Third, in relation to the positive impact of high job demands on job stress, organisations may let employee to control their amount of workload and working hours by providing flexible working hours' regulation. This is not a new practice in private organisations, but such practices are not available yet for government employees in Indonesia. Another practice that is related to reducing job demands is making effort to reduce overtime work hours to maintain and promote high levels of mental health among employees (Hino et al., 2015).

### **Limitation and Future Research**

Several limitations of this study need to be addressed. First, although participants of this study are not limited to only one government institution, we hardly could reach sufficient number of participants from all institutions. Thus, the power to generalise the finding to other public sector employees is limited. Second, the study employed self-report online survey which may lead to common method bias. Self-report is considered as the most appropriate method in this study because constructs measured in this study is highly subjective in nature, and we believe that employees are most aware of their personal conditions. We tried to reduce the common method bias by ensuring participants that their responses are kept confidential and there are no right and wrong

answers. We also used statistical remedies to check the possibility of common method bias. However, future studies should avoid common method bias by employing different method to collect data, namely time lagged design. Third, the study used cross-sectional design that limits the ability to determine the causal relationship between variables. Longitudinal design may also be employed, because job demands and job stress may fluctuate over time.

## **CONCLUSIONS**

Our study has established that perceived remaining time weakens positive relation between job demands and job stress. However, despite the significant effect, the relationship between job demands and job stress remained positive on high perceived remaining time individuals. This study extends Job Demands-Resource Model by conceptualising perceived remaining time as personal resource that buffers the positive relationship between job demands and job stress.

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