Job stress mediate: Workload on employee performance

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Abstract

The purpose of this study was to analyse the role of job stress as a mediator between workload and performance. Based on the calculation of the slovin formula, this study involved 188 employees of PT Gearinc Service Indonesia Bali branch with probability sampling technique. Data were analysed using Structural Equation Modeling (SEM) with the Partial Least Square (PLS) approach. The results show that job stress mediates the relationship between workload and employee performance. The theoretical implications are based on job demands-resources theory, where workload and stress result from excessive demands on low-performing employees. This research has practical implications for PT Gearinc Service Indonesia in evaluating employee performance and influential factors. The conclusion obtained in this study is that the higher the employee's workload, then coupled with the higher job stress felt by the employee, the lower the employee's performance.

Keywords: Workload; Job Stress; Performance; Job Demands-Resources Theory

1. Introduction

Providing an appropriate workload can be one of the factors that can affect employee performance at PT Gearinc Service Indonesia. An increase in workload can lead to a decrease in productivity and quality of work produced by employees. In addition, high workloads can also cause stress in employees, which in turn can negatively affect employee performance.

The number and variety of tasks that employees must complete in a given period of time is known as their workload. Workload is described as the burden experienced by a person when performing their job duties (Rizal, 2018). Recent research published in 2022 studied the concept of workload, focusing on the factors that contribute to high workload and its impact on employee well-being and performance. Workload can be influenced by various factors, including organizational factors such as task complexity, job demands, and working conditions, as well as individual factors such as cognitive ability and motivation, according to Park & Lee (2022). According to the study, excessive workload can result in negative outcomes for employees such as stress, burnout, and decreased job satisfaction. In addition, heavy workload can impact organizational outcomes such as increased turnover and decreased productivity. Workload can come from various sources, such as large volumes of work, tight deadlines, complex tasks, and social interactions with colleagues and managers. Employee performance can be significantly affected by stress, which can result in decreased productivity and work completion errors. To create a healthy and productive work environment, proper workload management and support from superiors and co-workers in managing stress and high work demands are crucial (Inoue, Tsuchiya, Tsurugano, Nishikitani, & Yano, 2021).

Workload management and assistance from superiors and co-workers in dealing with high job stress and demands are essential in preventing job stress, which is a situation in which employees experience pressure and tension because of high job demands and tasks. Occupational stress is a condition in which employees feel pressurized and tense as a result of their work.
of the high demands and tasks of their jobs. Recent research in 2022 found that job stress has a negative impact on employees’ psychological and physical well-being, as well as overall organizational performance. Job stress, according to a study by Kocaoğlu et al. (2022), can cause a variety of health problems, including fatigue, headaches, indigestion and heart disease. In addition, job stress can cause psychological problems such as anxiety, melancholy and mental fatigue. According to the study, the consequences of job stress on employees may have a detrimental influence on organizational performance, such as increased absenteeism, attrition, and decreased productivity. As a result, effective stress management and policies that promote employee wellbeing are critical to a company’s success.

Job Demand and Resource theory (JD-R) is an important theory in research on the effect of workload on performance through the mediation of job stress. Job Demand and Resource can be used in this study because it focuses on the interaction between job demands and resources in influencing employee performance and well-being. Employees’ job stress levels can be influenced by job demands as a determinant of workload. Meanwhile, resources as a determinant of performance can help employees in dealing with heavy workloads. So, by considering these two aspects in this study, we can understand how workload caused by job demands can interfere with employee performance through the mediation of job stress and how resources owned by employees can help overcome this. Understanding the Job Demands-Resources (JD-R) theory, which analyses how workload and work resources affect employee well-being and performance, makes effective stress management and employee well-being policies critical to a company’s success. Job demands, according to Bakker & Demerouti (2022), are the physical, psychological, social, or organizational aspects of work that require sustained effort or skill, while job resources are “the physical, psychological, social, or organizational aspects of work that can help achieve goals, reduce job demands, and promote personal growth and development”. This study emphasizes the importance of understanding the dynamic interaction between job demands and resources, and their impact on employee outcomes such as burnout, engagement, and intention to leave. The research also underscores the importance of organizations providing sufficient job resources to offset the negative effects of job demands and prevent employee burnout. The availability of resources, such as social support, autonomy, and feedback, can buffer the negative impact of high job demands on employee well-being and promote personal growth and development, wrote Bakker & Demerouti (2022). Therefore, organizations should prioritize providing job resources such as training and growth opportunities, social support, and job control to assist employees in managing high job demands and maintaining their well-being and performance. Organizations can build a pleasant work environment that encourages employee growth and development while improving organizational outcomes such as productivity and retention by implementing a Job Demands-Resources strategy for employee well-being and performance.

2. Literature review and hypothesis development

Workload has a negative and significant effect on employee performance. This is outlined in research conducted by Paramitadewi (2017). The negative effect of workload on employee performance means that the lower the employee workload, the higher the employee performance. Similar results were also obtained by Kusuma & Soesatyo (2014). Research conducted by Shabbir & Naqvi (2017) found that workload has a negative and significant effect on employee performance. Akob (2016) states that workload has a negative effect on employee performance. The same thing was stated by Wakoli (2016) in his research on workload on teacher performance in Bungoma, Kenya. Research conducted by Chandra & Adriansyah (2017) and Iskandar & Sembada (2012) shows that there is a negative and significant effect of workload on employee performance. Gozali (2016) in his research states that workload has a negative and significant effect on the performance of employees of the Central Statistics Agency in Deli Serdang and Serdang Begawai Districts.

H1: Workload has a negative and significant effect on employee performance

Pratama & Satrya (2018) at the Bali Provincial Transportation Office shows that workload has a positive and significant effect on job stress. This is because an increase in workload accompanied by a lack of time to do work and a lack of opportunity to be able to make decisions at work results in increased job stress. Lestari & Utama (2017) state that workload has a positive and significant effect on job stress. Yo & Surya (2015) in their research found that workload and job stress have a positive and significant relationship. Research conducted by Kusuma & Soesatyo (2014) found that workload has a positive effect on job stress. Shabbir & Naqvi (2017) state that workload has a positive and significant effect on job stress. Research by Rizky & Afrianty (2018) on the Social Service of East Java Province states that workload affects job stress positively and significantly. Wijaya (2018) states that workload has a positive effect on job stress. Aujada, Saryadi, & Nugraha (2015) state that workload has a significant positive effect on job stress.

on job stress. Olowookere & Fagbohun (2021) This study examines the effect of workload on job stress in the education sector in Nigeria. The results showed that there is a positive and significant relationship between workload and job stress. This research suggests that companies and organizations should pay attention to employee workload and provide adequate support to reduce their job stress. Research in the health sector was also conducted research related
to workload on employee well-being in the health service sector in India by Kamaraj et al., 2021. The results showed that workload negatively affects employee well-being, and job stress mediates the relationship between workload and employee well-being. This study suggests organizations to provide adequate support and improve employee work control as an effort to reduce job stress. Duan et al., (2022) this study examined the effect of workload and job stress on the performance of medical personnel in the United States. The results showed that workload has a positive effect on job stress, which in turn has a negative effect on employee performance.

H2: Workload has a positive and significant effect on job stress

Research on job stress and employee performance by Ahmad et al. (2018) showed a negative and significant effect of job stress on employee performance. Kotteeswari & Sharief (2014) state that job stress affects employee performance. Job stress makes employees unable to concentrate properly on their work. Similar results were also obtained in Vijayan’s research (2018), which states that management can do the necessary ways to be able to control employee job stress levels so that employee performance increases. Shahid (2012) stated that job stress negatively affects the performance of bank employees in Faisalabad, Pakistan.

Ahmed & Ramzan (2013) in a study of the banking sector in Pakistan stated that job stress significantly reduces employee performance. Saranani (2015) and Kristanti (2017) stated that job stress has a negative and significant effect on employee performance. Kusuma & Soesatyo’s (2014) research also states that job stress has a significant negative effect on employee performance. Judiarto & Marwati (2021) This journal examines the effect of job stress on employee performance by looking at the role of work engagement as a mediator. The research was conducted on bank employees in Indonesia. The results showed that job stress has a negative effect on employee performance, but work engagement can mediate this influence so that the results become positive and significant. Mirzaei et al. (2021) explored the effect of job stress on employee performance by looking at the role of emotional intelligence as a mediator. The research was conducted on industrial sector employees in Iran. The results showed that job stress has a negative influence on employee performance, but emotional intelligence can mediate this influence so that the results become positive and significant.

H3: Job stress has a negative and significant effect on employee performance.

Stress in the workplace can be a serious problem for organizations and employees. One of the real impacts of job stress is creating an imbalance between individual abilities, needs, and expectations and what the organization asks individuals to do (Alkubaisi, 2015). Shabbir & Naqvi (2017) state that job stress mediates the effect of workload on employee performance. Research conducted by Martini & Sitiari (2018) states that job stress partially mediates the effect of workload on employee performance. Similar research was also conducted by Alharbi et al. (2019) This study examines the effect of workload on nurse performance in Saudi Arabia. The results showed that job stress mediates the relationship between workload and nurse performance. This suggests that increasing balancing factors, such as social support and control over work, can help reduce job stress and improve nurse performance. Research was also conducted in Mexico and involved nurses in public hospitals by Valdez et al. (2019). The results showed that workload and job stress affect nurses’ performance. This study concluded that improving the quality of the work environment and improving human resource management are key to improving nurse performance. Abrokwa et al. (2020). This study examines the effect of workload on the performance of hotel employees in Ghana. The results showed that job stress mediates the relationship between workload and hotel employee performance. Kim et al. (2021) stated the effect of workload on employee performance in South Korea. The study found that job stress mediates the relationship between workload and employee performance, and that stress coping strategies can moderate this relationship. The study concluded that strengthening employees’ stress coping strategies can help improve their performance. Genc (2022) This study examines the effect of workload on employee performance in the hospitality sector in Turkey. The results showed that job stress mediated the relationship between workload and employee performance. This study concluded that improving the factors that cause workload and job stress can help improve employee performance.

H4: Job stress mediates the effect of workload on employee performance.

3. Methods

The scope of the study includes the subject of the study, namely employees of PT Gearinc Service Indonesia Bali branch with subject criteria, namely gender, age, latest education, and field of duty. The subject criteria were chosen with the consideration that job demands refer to the physical, psychological, social, or organisational aspects of the job, which require continuous physical and psychological abilities. The number of human resources at PT Gearinc Service Indonesia is 1500 people for all of Indonesia, in this study the researchers only used a sample of PT Gearinc Service
Indonesia Bali branch which has 355 employees from all existing divisions, many divisions and subdivisions that the company was reluctant to mention. The population in this study were all employees of the Kuaishou project and TTR divisions at PT Gearinc Service Indonesia, totaling 188 people. The sample of this study is a saturated sample, which uses the entire population of employees of the Kuaishou project and TTR divisions as samples, excluding other existing divisions. This is based on the number of employees at PT Gearinc Service Indonesia has a variety of positions and different job descriptions so that the selection of saturated samples is expected to be able to show the perceptions of employees without discriminating. Based on the calculation using the Slovin formula, the sample that can be taken from the population is 188, so the number of samples for this research is 188 people. The data analysis technique used in this research is using Structural Equation Modeling (SEM) or variance-based structural equation models or component-based SEM called Partial Least Square (PLS). SEM PLS analysis in the study was carried out with the Smart PLS 5.0 software application.

4. Result and discussion

4.1. Convergent validity

Table 1 Convergent Validity

<table>
<thead>
<tr>
<th></th>
<th>M (Job Stress)</th>
<th>X (Workload)</th>
<th>Y (Performance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>0.865</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2</td>
<td>0.854</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3</td>
<td>0.810</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M4</td>
<td>0.739</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M5</td>
<td>0.791</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X1</td>
<td>0.880</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X2</td>
<td>0.878</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X3</td>
<td>0.852</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X4</td>
<td>0.839</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y1</td>
<td></td>
<td>0.764</td>
<td></td>
</tr>
<tr>
<td>Y2</td>
<td></td>
<td>0.832</td>
<td></td>
</tr>
<tr>
<td>Y3</td>
<td></td>
<td>0.809</td>
<td></td>
</tr>
<tr>
<td>Y4</td>
<td></td>
<td>0.761</td>
<td></td>
</tr>
<tr>
<td>Y5</td>
<td></td>
<td>0.830</td>
<td></td>
</tr>
</tbody>
</table>

The convergent validity test results in Table 1 show that all variable indicator outer loading values have a value greater than 0.70. Thus, it can be concluded that all indicators have met the convergent validity requirements.

4.2. Discriminant validity

Table 2 Discriminant Validity

<table>
<thead>
<tr>
<th></th>
<th>Average Variance Extracted (AVE)</th>
<th>Akar AVE ($\sqrt{AVE}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (Job Stress)</td>
<td>0.661</td>
<td>0.813</td>
</tr>
<tr>
<td>X (Workload)</td>
<td>0.744</td>
<td>0.863</td>
</tr>
<tr>
<td>Y (Performance)</td>
<td>0.639</td>
<td>0.800</td>
</tr>
</tbody>
</table>
Based on Table 2, it can be explained that the AVE value of the workload, job stress and performance variables is greater than 0.5, thus, all variables in the tested model meet the discriminant validity criteria. The model is said to be good if the AVE of each variable is greater than 0.50. The output results show that the AVE value of all variables is greater than 0.50 so that the model can be said to be valid. The results of the discriminant validity test can also be done by comparing the cross loading values.

**Table 3 Cross Loading**

<table>
<thead>
<tr>
<th>M (Job Stress)</th>
<th>X (Workload)</th>
<th>Y (Performance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1 0.865</td>
<td>0.536</td>
<td>-0.463</td>
</tr>
<tr>
<td>M2 0.854</td>
<td>0.622</td>
<td>-0.526</td>
</tr>
<tr>
<td>M3 0.810</td>
<td>0.551</td>
<td>-0.420</td>
</tr>
<tr>
<td>M4 0.739</td>
<td>0.330</td>
<td>-0.354</td>
</tr>
<tr>
<td>M5 0.791</td>
<td>0.502</td>
<td>-0.384</td>
</tr>
<tr>
<td>X1 0.548</td>
<td>0.880</td>
<td>-0.333</td>
</tr>
<tr>
<td>X2 0.614</td>
<td>0.878</td>
<td>-0.387</td>
</tr>
<tr>
<td>X3 0.521</td>
<td>0.852</td>
<td>-0.419</td>
</tr>
<tr>
<td>X4 0.522</td>
<td>0.839</td>
<td>-0.502</td>
</tr>
<tr>
<td>Y1 -0.375</td>
<td>-0.416</td>
<td>0.764</td>
</tr>
<tr>
<td>Y2 -0.541</td>
<td>-0.423</td>
<td>0.832</td>
</tr>
<tr>
<td>Y3 -0.491</td>
<td>-0.377</td>
<td>0.809</td>
</tr>
<tr>
<td>Y4 -0.332</td>
<td>-0.183</td>
<td>0.761</td>
</tr>
<tr>
<td>Y5 -0.344</td>
<td>-0.456</td>
<td>0.830</td>
</tr>
</tbody>
</table>

Based on Table 3, it can be seen that the correlation of indicators M1, M2, M3, M4, and M5 with their variables is higher than the correlation with other variables. Because the cross loading value of variable M (job stress) indicators has a greater correlation with its indicators than with other variables, it can be said that variable X (workload) has fulfilled discriminant validity. Furthermore, the correlation of indicators X1, X2, X3, and X4 with their variables is higher than the correlation with other variables. Because the cross loading value of variable X (workload) indicators has a greater correlation with the indicators it has than with other variables, it can be said that variable X (workload) has fulfilled discriminant validity. Likewise, the correlation of indicators Y1, Y2, Y3, Y4, and Y5 with their variables is higher than the correlation with other variables. Because the cross loading value of variable Y (performance) indicators has a greater correlation with the indicators it has than with other variables, it can be said that variable Y (performance) has fulfilled discriminant validity.

4.3. Reliability

**Table 4 Reliability**

<table>
<thead>
<tr>
<th></th>
<th>Cronbach's Alpha</th>
<th>Composite Reliability</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (Job Stress)</td>
<td>0.872</td>
<td>0.907</td>
<td>Reliable</td>
</tr>
<tr>
<td>X (Workload)</td>
<td>0.885</td>
<td>0.921</td>
<td>Reliable</td>
</tr>
<tr>
<td>Y (Performance)</td>
<td>0.860</td>
<td>0.899</td>
<td>Reliable</td>
</tr>
</tbody>
</table>

The output results of composite reliability and Cronbach’s alpha of workload, job stress, and performance variables are all above 0.70. Thus, it can be explained that all variables have good reliability.
4.4. R-Square (R²)

**Table 5** R-square

<table>
<thead>
<tr>
<th></th>
<th>R Square</th>
<th>R Square Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (Job Stress)</td>
<td>0.410</td>
<td>0.404</td>
</tr>
<tr>
<td>Y (Performance)</td>
<td>0.318</td>
<td>0.305</td>
</tr>
</tbody>
</table>

Based on Table 5, the model of the effect of workload on job stress provides an R-square value of 0.410 which can be interpreted that the variability of the job stress variable can be explained by the variability of the workload variable by 41 percent, while 59 percent is explained by other variables outside the study. Furthermore, the model of the effect of workload, and job stress on performance provides an R-square value of 0.318 which can be interpreted that the variability of the performance variable can be explained by the variability of the workload variable, and job stress by 31.8 per cent, while the remaining 68.2 per cent is explained by other variables outside the study.

The Q2 value has a value with a range of 0 < Q2 < 1, where the closer to 1 means the better the model. To measure how well the observed value is produced by the model and also the parameter estimate, it is necessary to calculate the Q-square (Q2) as follows:

\[
Q^2 = 1 - (1 - (R_1)^2)(1 - (R_2)^2)
\]

\[
= 1 - (1 - 0.41)^2(1 - 0.318)^2
\]

\[
= 1 - (0.647)(0.682)
\]

\[
= 1 - 0.441
\]

\[
= 0.559
\]

The calculation results obtained Q2 value is 0.559 so it can be concluded that the model has good predictive relevance. Thus, it can be explained that 55.9 per cent of the variation in performance is influenced by workload, and job stress, while the remaining 44.1 per cent is influenced by other variables not examined in this study.

4.5. Goodness of Fit (GoF) Test Results

The Goodness of Fit test is used to assess the accuracy of the model being tested whether it is good (fit) or not. The GoF value criteria are 0.10, 0.25 and 0.36 which indicate that GoF is small, GoF is medium and GoF is large (Ghozali and Latan, 2015). The Goodness of Fit formula used is:

\[
GoF = \sqrt{\frac{AVE}{R^2}}
\]

Keterangan:

\[AVE = Ave\ mean\]

\[R^2 = R^2\ mean\]

**Table 6** Goodness of Fit

<table>
<thead>
<tr>
<th></th>
<th>Average Variance Extracted (AVE)</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (Job Stress)</td>
<td>0.661</td>
<td>0.410</td>
</tr>
<tr>
<td>X (Workload)</td>
<td>0.744</td>
<td></td>
</tr>
<tr>
<td>Y (Performance)</td>
<td>0.639</td>
<td>0.318</td>
</tr>
<tr>
<td>Mean</td>
<td>0.681</td>
<td>0.364</td>
</tr>
</tbody>
</table>

Primary Data, 2023
Table 6 shows the average value of R Square is 0.408, then the average value of AVE is 0.680, then the results of the Goodness of Fit calculation are as follows:

\[
GoF = \sqrt{\text{AVE} \times R^2}
\]

\[
= \sqrt{0.681 \times 0.364} = 0.498
\]

GoF value of 0.365 is classified as large, a GoF value of 0.25 is classified as medium/moderate and a GoF value of less than 0.25 is classified as small (Hair, 2017). A model that has a large GoF value means that it is more suitable in describing the research sample. Based on the results of the Goodness of Fit (GoF) calculation above, the GoF value is 0.498 so it can be concluded that the model in this study has a relatively large research model fit.

4.6. Direct Effect

Table 7 Direct Effect

| Original Sample (O) | T Statistics (|O/STDEV|) | P Values | Keterangan |
|---------------------|-----------------|----------|-----------|
| X (Workload) -> Y (Performance) | -0.229 | 2.174 | 0.030 | Accepted |
| X (Workload) -> M (Job stress) | 0.640 | 10.357 | 0.000 | Accepted |
| M (Job stress) -> Y (Performance) | -0.389 | 3.251 | 0.001 | Accepted |

Hypothesis testing on the effect of workload on performance results in a correlation coefficient of -0.229, so workload has a negative effect on performance. The value of t Statistics obtained is 2.174 (> t-critical 1.96) with a p value of 0.030 <0.050, then the effect of workload on performance is significant. Thus, hypothesis 1 (H1) which states that workload has a negative and significant effect on performance is accepted.

Hypothesis testing on the effect of workload on job stress produces a correlation coefficient of 0.640, so workload has a positive effect on job stress. The t Statistics value obtained is 10.357 (> t-critical 1.96) with a p value of 0.000 <0.050, so the effect of workload on job stress is significant. Thus, hypothesis 2 (H2) which states that workload has a positive and significant effect on job stress is accepted.

Hypothesis testing on the effect of job stress on performance produces a correlation coefficient of -0.389, so job stress has a negative effect on performance. The t Statistics value obtained is 3.251 (> t-critical 1.96) with a p value of 0.001 <0.050, so the effect of job stress on performance is significant. Thus, hypothesis 3 (H3) which states that job stress has a negative and significant effect on performance is accepted.

4.7. Indirect Effect

Table 8 Indirect Effect

| Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|---------------------|----------------|---------------------------|-----------------|----------|
| X (Workload) -> M (Job stress) -> Y (Performance) | -0.249 | -0.264 | 0.079 | 3.137 | 0.002 |

Workload on performance through job stress obtained a correlation value of -0.249 with a t statistic of 3.137 > 1.96, and a p value of 0.002 <0.050, so there is a significant positive indirect effect between workload on performance through job stress.
5. Conclusion

The results showed that there is a positive and significant relationship between workload variables and job stress, but there is a negative and significant relationship between workload variables and job stress on employee performance. The implications of the research results are in accordance with the application of Job demands-resources theory, where this theory states that workload and job stress are caused by excessive demands on low-performing employees. Emotional intelligence is based on job demands-resources theory which is related to a person's psychological capacity and can be used to reduce the impact of job demands and job resources in the company, in other words, emotional intelligence can help employees control stress so that employees can work at their best performance. Job demands-resources theory is used as the main theory in this study because this theory can help explain what behaviours are shown by employees in their work by analysing based on the factors available in the theory. Employee behaviours that affect employee performance can be triggered by disturbances in employee emotional intelligence, increased workload, and employee job stress. Job demands-resources theory in Bakker et al. (2013) that when job demands are high, employees must make extra efforts to achieve their job goals. Job requirements are not always detrimental, but when job requirements exceed employees' abilities, employees will lack energy and cause other performance-related problems.

This research provides implications for PT Gearinc Service Indonesia as material for consideration and evaluation regarding employee performance and the factors that influence it. PT Gearinc Service Indonesia in improving employee performance should be able to see and consider workload and job stress factors because they can significantly affect employee performance when working at PT Gearinc Service Indonesia.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References


