

THE INFLUENCE OF WORKLOAD AND WORK ENVIRONMENT ON EMPLOYEE PERFORMANCE THROUGH JOB STRESS AS A MODERATING

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Abstract. This study aims to explore the impact of workload and work environment conditions on employee performance, with job stress as a moderating variable. The number of respondents in this study was 74 lecturers from an institution, with the analysis method using Structural Equation Modeling (SEM) based on Partial Least Square (PLS) 4.0.

The findings of the study indicate that workload has a significant influence on employee performance, while the work environment also has a positive impact on performance. Furthermore, job stress has been shown to act as a moderator in the relationship between workload and performance, with higher levels of stress amplifying the negative impact of workload on performance. However, in the relationship between work environment and performance, job stress did not function as a significant moderator. These results indicate that effective workload management and the creation of a supportive work environment are crucial for improving employee performance, and it is important for organizations to address the elements of job stress to prevent reduced productivity.

Keywords: Workload, Work Environment, Job Stress, Employee Performance

1. Introduction

The business sector is currently developing very rapidly, especially with the changes occurring within it. Technology continues to undergo significant transformations year after year. This is inseparable from the influence of current globalization. In this era of globalization, many companies have become more complex and competitive. Management is the science that studies the direction of an organization in this era of globalization. Many companies require organizational and human resource management to advance and compete with other businesses. According to Iristian et al., (2025), retaining competent employees is important for an organization.

In line with the times, developing countries like Indonesia are now entering a new industrial era connected to global economic activity, full of dynamics, and requiring expertise and quality human resources to improve internal activities. Human resources are a vital component of an organization, while natural resources are a crucial factor in organizational management, as people are the leaders and drivers of organizational activities.

Human resources with superior performance and quality must be able to motivate the organization to achieve competitive advantage. Furthermore, achieving these goals requires better performance and results from each individual. High performance makes employees more loyal to the organization, more motivated, and more likely to enjoy their work. Staff efficiency increases amidst increasingly fierce competition. One way to maintain or improve employee performance is to consistently maintain individual quality so that the company can grow, compete, or survive by evaluating staff performance. This includes the level of professional training, low employee engagement, lack of discipline, and the level of workload within the company.

One of the causes of work stress is excessive workload and poor physical conditions. Workload is a contributing factor to high levels of work stress, although this varies from individual to individual. Employee workload is an important element to consider when assessing employee

performance to avoid unnecessary issues resulting from imbalances in employee performance or low workloads due to overstaffing.

Besides workload, the work environment can also be a source of stress. The work environment encompasses everything around employees that can affect their work style and productivity. It can also be defined as the collection of tools and materials surrounding employees, including the work environment, work methods, and organization.

Job stress is a condition in which an individual feels pressured and unable to meet the demands of the work environment or difficult tasks. Excessive stress can have negative impacts on employees, such as difficulty thinking clearly, making sound decisions, and decreased work effectiveness. A person is considered to be experiencing job stress if the stress they experience is related to their environment or their inability to meet workplace demands. Job stress not only has negative impacts but can also positively impact performance and increase tension experienced in response to the physical and mental stressors common in the workplace.

2. Literature Review

Employee performance

Organizational effectiveness can be used as an indicator of the organization's success or failure in achieving its goals. Chandra and Priyono (2016) describe performance as an individual's ability to meet workplace demands with indicators of loyalty, achievement, responsibility, perseverance, honesty, and obedience. According to Hamid and Hasan (2015), performance is considered to play the most important role in achieving profits. Meanwhile, according to Mustovani and Suhermin (2019), employee performance is a final result achieved by each employee within a certain time period, where the employee is able to carry out each job task and responsibility assigned to him well. The employee performance indicators according to Afandi (2018:89) are: (a) Quality (b) Quantity (c) Punctuality (d) Effectiveness (e) Relationships with coworkers (f) Need for guidance.

Workload

According to (Ratna et al., 2022) workload can be defined as a group or number of activities that must be carried out by an organizational unit or task within a certain period of time. Siswanto et al., (2019) workload can be interpreted as an element that must be taken into account in order to achieve harmony and high productivity, so that it can reduce performance. Meanwhile, according to Koesomowidjojo (2017) workload is every job given to a staff member that must be completed within a certain period of time. As for indicators According to Koesomowidjojo (2017), in the world of work there are several indicators to determine how big the workload must be carried by employees, these indicators include: (a). Volume of work, (b). Working time (c). Work pressure (d). Work environment conditions.

H1: Workload affects employee performance

Work environment

A monotonous work environment prevents employees from performing their duties and activities optimally and can increase work stress (Putra and Putri, 2020). The work environment is also a supporting factor for a comfortable work atmosphere amidst tension, so many companies provide spaces that can temporarily relieve fatigue within the company. However, sometimes the obstacle is not due to information coming from outside but from within oneself. Stress and boredom with continuous routines cause stress, resulting in suboptimal performance (Farih et al., 2021). The indicators of the work environment according to Sedarmayanti (2017)

are: (a). Physical Condition, (b). Work Facilities (c). Social Relations in the Workplace (d). Relationships with Leaders (e). Sense of Security, (f). Comfort.

H2: Work environment influences employee performance

Work Stress

The term "stress" comes from the Latin "estrica" or the French "estrece," which was used in the 17th century to indicate disaster, difficulty, and sadness (Yurik et al., 2015). According to (Megawati, 2019), stress is a feeling of pressure experienced by employees when facing their work. Lack of communication between company employees can also cause work stress. Meanwhile, according to Sari and Rivai (2021), work stress is a state of tension that affects a person's emotions, thought processes, and physical condition. The indicators of work stress according to Beehr and Newman (1978) are as follows: (a) a stressful work environment (b) excessive work demands (c) unclear roles or role conflict.

H3: Job stress moderates the effect of workload on employee performance.

H4: Job stress moderates the effect of the work environment on employee performance.

CONCEPTUAL FRAMEWORK

In short, this research can be seen from the following conceptual framework:

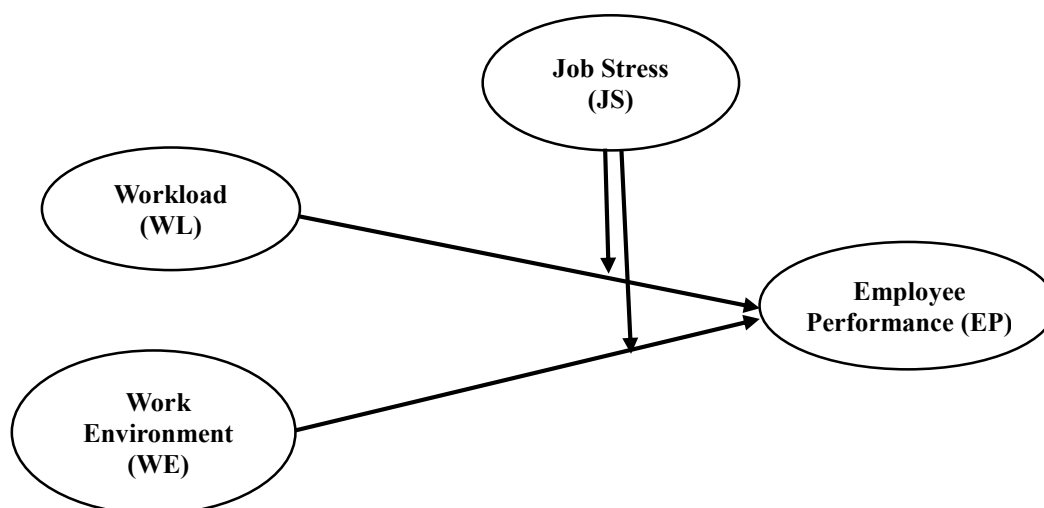


Figure 1 Conceptual framework

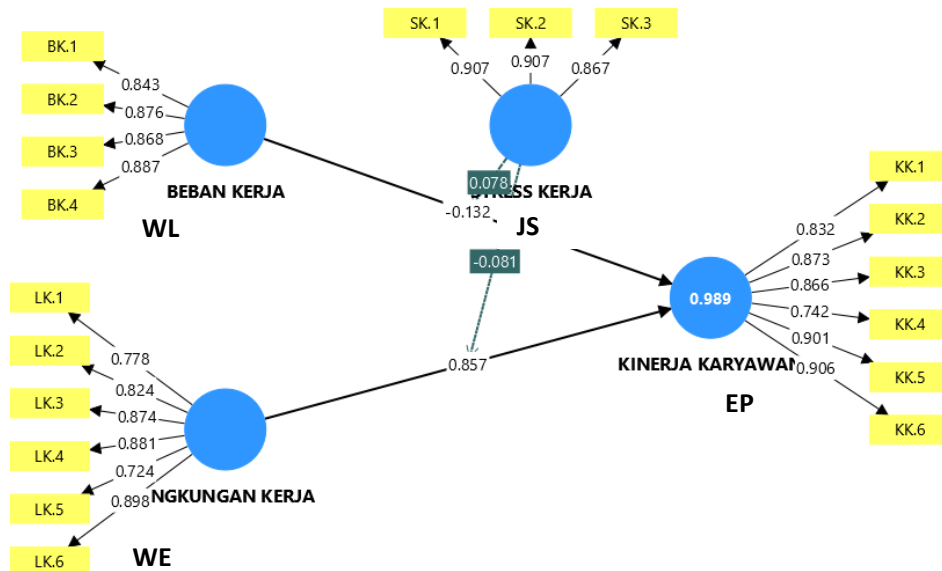
3. Method

This study uses a quantitative approach, more specifically the quantitative approach used is quantitative causality. The population of this study is all lecturers working at the AMI Makassar Maritime Polytechnic (POLIMARIM) with a total of 74 people. The sampling technique used in this study is a non-probability sampling technique. Sampling uses total sampling. This situation is done if the population is relatively small, so that the entire population is used as a sample. This research was conducted at the AMI Makassar Maritime Polytechnic (POLIMARIM).

The data used in this study is primary data, that is, data obtained directly from the research object. The data collection procedure used in this study is a questionnaire. The measurement technique for questionnaire responses can be measured using a Likert scale.

This study used SmartPLS software version 4 as a data analysis method. PLS (Partial Least Squares) is a variance-based structural equation analysis (SEM) that can simultaneously test measurement models and structural models. The measurement model is used to test validity and reliability, while the structural model is used to test causality (hypothesis testing with a predictive model).

4. Result and Discussion



Convergent Validity Test

The following are the results of the convergent validity test in this study, namely:

Table 1: Convergent Validity Test

	WL	EP	WE	JS	JS x WE	JS x WL
BK.1	0.843					
BK.2	0.876					
BK.3	0.868					
BK.4	0.887					
KK.1		0.832				
KK.2		0.873				
KK.3		0.866				
KK.4		0.742				
KK.5		0.901				
KK.6		0.906				
LK.1			0.778			
LK.2			0.824			
LK.3			0.874			
LK.4			0.881			
LK.5			0.724			
LK.6			0.898			
SK.1				0.907		
SK.2				0.907		
SK.3				0.867		
JS x WL						1.000
JS x WE					1.000	

Source: Processed Data, 2025

Based on the results of the tests carried out, it shows that all the indicators of the variables have met the Loading Factor ≥ 0.7 requirement, so that the data in this study can be declared valid.

Discriminant Validity Test

Table 2: Discriminant Validity Test

	WL	EP	WE	JS	JS x WE	JS x WL
BK.1	0.843	0.761	0.740	0.907	0.038	0.017
BK.2	0.876	0.745	0.746	0.867	0.041	-0.041
BK.3	0.868	0.778	0.806	0.709	0.131	0.160
BK.4	0.887	0.751	0.762	0.751	0.154	0.125
KK.1	0.783	0.832	0.824	0.781	0.020	0.071
KK.2	0.769	0.873	0.874	0.774	-0.042	0.154
KK.3	0.782	0.866	0.881	0.757	0.024	0.201
KK.4	0.538	0.742	0.724	0.620	-0.137	-0.010
KK.5	0.800	0.901	0.898	0.792	-0.066	0.014
KK.6	0.789	0.906	0.860	0.907	-0.086	0.068
LK.1	0.698	0.703	0.778	0.650	0.089	0.085
LK.2	0.783	0.832	0.824	0.781	0.020	0.071
LK.3	0.769	0.873	0.874	0.774	-0.042	0.154
LK.4	0.782	0.866	0.881	0.757	0.024	0.201
LK.5	0.538	0.742	0.724	0.620	-0.137	-0.010
LK.6	0.800	0.901	0.898	0.792	-0.066	0.014
SK.1	0.789	0.906	0.860	0.907	-0.086	0.068
SK.2	0.843	0.761	0.740	0.907	0.038	0.017
SK.3	0.876	0.745	0.746	0.867	0.041	-0.041
JS x WL	0.076	0.099	0.105	0.020	0.736	1.000
JW x WE	0.105	-0.054	-0.024	-0.008	1.000	0.736

Source: Processed Data, 2025

Reliability Test

The reliability test measurement in this study used the criteria of Cronbach's Alpha value ≥ 0.6 , which was declared reliable. If the Cronbach's Alpha value < 0.6 , it was declared unreliable. The following are the results of the reliability test:

Table 3 Reliability Test

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
WORKLOAD	0.891	0.891	0.925	0.754
EMPLOYEE PERFORMANCE	0.925	0.929	0.942	0.731
WORK ENVIRONMENT	0.910	0.916	0.931	0.693
WORK STRESS	0.875	0.885	0.923	0.799

Source: Processed Data, 2025

Based on the table above, each variable has a Cronbach alpha value of ≥ 0.6 , indicating that the variables used in this study are reliable. Therefore, it can be concluded that the entire construct meets the reliability requirements, both according to Cronbach's alpha criteria.

Hypothesis Testing

Hypothesis testing in this study used a t-test with a significance level of >1.96 and a P-Value of $0.000 < \alpha = 0.05$ (5%).

Table 4. Path Coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
WORKLOAD -> EMPLOYEE PERFORMANCE	-0.132	-0.131	0.047	2.834	0.005
WORK ENVIRONMENT -> EMPLOYEE PERFORMANCE	0.857	0.858	0.036	24.132	0.000
WORK STRESS -> EMPLOYEE PERFORMANCE	0.274	0.273	0.044	6.286	0.000
WORK STRESS x WORKLOAD -> EMPLOYEE PERFORMANCE	0.078	0.078	0.028	2.779	0.005
WORK STRESS x WORK ENVIRONMENT -> EMPLOYEE PERFORMANCE	-0.081	-0.080	0.029	2.788	0.005

Source: Processed Data, 2025

Discussion

Research shows that workload negatively impacts employee productivity. In other words, the greater the perceived workload, the lower the performance. This aligns with Robbins and Judge's (2017) findings, which explain that excessive workload can cause stress, reduce focus, and decrease work output. Furthermore, according to Mangkunegara (2013), workloads that exceed an employee's physical and mental capabilities can lead to fatigue, which in turn reduces the quality and quantity of work output. This research confirms that unbalanced workload management can disrupt effectiveness, reduce motivation, and increase the likelihood of errors in completing tasks. Therefore, organizations must pay attention to the division of tasks to align with employee capacity, thereby maximizing performance.

The results of the study indicate that workplace conditions have a positive impact on employee performance. This means that the better the workplace conditions, the higher the performance that employees can achieve. Sedarmayanti's opinion (2011) supports this, stating that a comfortable, safe, and supportive work environment can increase motivation and productivity. Nitisemito (2010) also emphasized that a good work atmosphere can create a pleasant environment, thus encouraging employees to work more effectively. Therefore, it can be concluded that providing a decent work environment, both in physical terms such as lighting, temperature, and cleanliness, as well as in non-physical terms such as relationships between colleagues and support from superiors, is an important factor in improving employee performance.

The results of this study indicate that occupational stress can influence the relationship between workload and employee performance. This means that when workload increases, its effect on employee performance is highly dependent on the level of stress experienced. If job stress levels are high, then a heavy workload is likely to significantly reduce performance. Conversely, if job stress is well managed, the negative impact of workload on performance can be reduced. These results align with Luthans' (2011) opinion, which states that job stress is a psychological reaction that arises from a mismatch between job demands and individual abilities. Robbins and Judge (2017) also emphasize that stress can reduce productivity,

especially when the workload exceeds an employee's ability to handle. Therefore, organizations must pay attention to stress management, such as providing social support, dividing tasks fairly, and creating a healthy work environment, to prevent the influence of workload on performance from having an excessively negative impact.

Research shows that work-related stress negatively impacts the quality of the work environment, which in turn improves employee performance. This means that while a positive work environment typically contributes to improved performance, this beneficial effect is diminished when employee job stress is high. In other words, a comfortable work environment does not always lead to improved performance when employees are under significant mental stress. This finding aligns with Robbins and Judge's (2017) findings, which suggest that workplace stress can reduce employee motivation, focus, and productivity. Luthans (2011) also asserts that excessive stress can negate the benefits of a positive work environment, as individuals are more likely to focus on the pressure they feel rather than taking advantage of supportive working conditions. Therefore, it is important for organizations to address stress management in addition to creating a positive work environment to maintain optimal employee performance.

5. Conclusion

Workload negatively impacts employee performance. As the workload increases, performance tends to decline, as physical and mental fatigue can reduce the effectiveness and quality of work. The work environment has a positive impact on employee performance. A comfortable, safe, and supportive work environment can increase employee motivation, productivity, and effectiveness in completing tasks.

Job stress can affect the relationship between workload and performance. If the workload is heavy and stress is high, performance will be further compromised. However, if stress is managed well, the negative impact of workload can be mitigated.

Job stress also influences the work environment's effect on performance. A positive work environment doesn't always have a positive impact if employees experience high levels of stress. Therefore, stress management is crucial to ensure the work environment continues to have an optimal impact on performance.

References

- Chandra, T., & Priyono. 2016. The Influence of Leadership Styles, Work Environment and Job Satisfaction of Employee Performance - Studies in The School of SMPN 10 Surabaya. *International Education Studies*, 131-140.
- Farih, M., Sari, D., & Lestari, R. 2021. Indikator lingkungan kerja dalam organisasi modern. Penerbit Ilmu Mandiri.
- Iristian, J., Budiyanto, & Suhermin. 2025. The Influence of Locus of Control, Social Support Capability and Welfare Benefit on Driver Retention Through Job Embeddedness. *Central Asian Journal of Innovations on Tourism Management and Finance* 6(2):391-398
- Koesomowidjojo, S. R. M. 2017. Panduan praktis menyusun analisis beban kerja. Jakarta: Raih Asa Sukses.
- Luthans, F. 2011. *Organizational behavior: An evidence-based approach* (12th ed.). New York: McGraw-Hill.
- Mangkunegara, A. P. 2013. Manajemen sumber daya manusia perusahaan. Bandung: Remaja Rosdakarya.

- Megawati, P. E., & Supriatin. 2019. Pengaruh Motivasi, Stress Kejadian Beban Kerja Terhadap Kinerjakaryawan. *Jurnal Ilmu Dan Riset Manajemen*, 8(8).
- Mustovani, I., & Suhermin, S. 2019. Pengaruh k3, disiplin kerja dan motivasi terhadap kinerja karyawan. *Jurnal Ilmu Dan Riset Manajemen (JIRM)*, 8(8).
- Neksen, A., Wadud, M., & Handayani, S. 2021. Pengaruh Beban Kerja dan Jam Kerja terhadap Kinerja Karyawan pada PT Grup Global Sumatera. *Jurnal Nasional Manajemen Pemasaran dan SDM*, 105-112.
- Ratna W, N.Setyowati, & W.Widyantoro. 2022. Beban Kerja Perawat Pelaksana dengan Penerapan Patient Safety di Ruang-Isolasi COVID-19 RS Mitra Siaga Tegal. Bhamada: *Jurnal Ilmu dan Teknologi Kesehatan (E-Journal)*, 13(1).
- Robbins, S. P., & Judge, T. A. 2017. *Organizational behavior* (17th ed.). Harlow: Pearson Education Limited.
- Sari, D., & Rivai, H. 2021. *Manajemen Stres Kerja Dalam Organisasi Modern*. Penerbit Mitra Ilmu.
- Sedarmayanti. 2011. *Manajemen Sumber Daya Manusia, Reformasi Birokrasi, Dan Manajemen Pegawai Negeri Sipil*. Bandung: Refika Aditama.
- Siswanto, S., & Ni'mah, U. 2019. Beban kerja karyawan perbankan, implikasinya terhadap kinerja karyawan melalui variabel motivasi. *Journal of Business & Banking*, 6(2), 241–256.
- Tarwaka. 2011. *Ergonomi Industri: Dasar-Dasar Pengetahuan Ergonomi Dan Aplikasi Di Tempat Kerja*. Surakarta: Harapan Press.
- Yurik, H., Suryani, L., & Pratama, D. 2015. *Stres kerja: Teori dan aplikasi dalam dunia kerja*.