

Influence of Workload and Work Environment on Employee Performance with Work Motivation as a Mediating Variable at PT MAK

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ABSTRACT

This study is grounded in the critical role of human resource management within the dynamic maritime logistics industry, where workload and work environment are key factors influencing employee motivation and performance. The objective of this research is to examine the influence of workload and work environment on employee performance, with work motivation serving as a mediating variable, conducted at PT MAK. A quantitative research design was employed, utilizing a survey method involving 64 employees as respondents. Data analysis included validity and reliability testing, classical assumption testing, path analysis, and hypothesis testing. The findings reveal that both workload and work environment have a significant effect on work motivation. Furthermore, the work environment has a direct and significant impact on employee performance, whereas workload does not show a direct effect. However, work motivation is proven to mediate the relationship between both workload and work environment on employee performance. This study offers valuable contributions by providing practical insights for organizations, particularly in the maritime logistics sector, emphasizing the importance of effective workload management and a supportive work environment in enhancing employee motivation and performance. The results may serve as a reference for the formulation of human resource policies aimed at improving operational productivity.

Keywords: Workload, Work Environment, Work Motivation, Employee Performance

Pengaruh Beban Kerja dan Lingkungan Kerja terhadap Kinerja Karyawan dengan Motivasi Kerja sebagai Variabel Mediasi di PT MAK

Abstrak

Penelitian ini didasarkan pada peran penting manajemen sumber daya manusia dalam industri logistik maritim yang dinamis, di mana beban kerja dan lingkungan kerja merupakan faktor kunci yang memengaruhi motivasi dan kinerja karyawan. Tujuan penelitian ini adalah untuk menguji pengaruh beban kerja dan lingkungan kerja terhadap kinerja karyawan, dengan motivasi kerja sebagai variabel mediasi, yang dilakukan di PT MAK. Desain penelitian kuantitatif digunakan dengan metode survei yang melibatkan 64 karyawan sebagai responden. Analisis data meliputi uji validitas dan reliabilitas, uji asumsi klasik, analisis jalur, dan uji hipotesis. Temuan penelitian menunjukkan bahwa beban kerja dan lingkungan kerja memiliki pengaruh yang signifikan terhadap motivasi kerja. Lebih lanjut, lingkungan kerja memiliki pengaruh langsung dan signifikan terhadap kinerja karyawan, sementara beban kerja tidak menunjukkan pengaruh langsung. Namun, motivasi kerja terbukti memediasi hubungan antara beban kerja dan lingkungan kerja terhadap kinerja karyawan. Studi ini menawarkan kontribusi berharga dengan memberikan wawasan praktis bagi organisasi, khususnya di sektor logistik maritim, dengan menekankan pentingnya manajemen beban kerja yang efektif dan lingkungan kerja yang suportif dalam meningkatkan motivasi dan

kinerja karyawan. Hasil penelitian ini dapat menjadi referensi dalam perumusan kebijakan sumber daya manusia yang bertujuan untuk meningkatkan produktivitas operasional.

Kata Kunci: Beban Kerja, Lingkungan Kerja, Motivasi Kerja, Kinerja Karyawan

INTRODUCTION

The maritime logistics sector is a vital link in global supply chains, enabling the transit of commodities across international borders and fostering economic development. Its operations are characterized by high complexity, time pressure, and labor-intensive processes, demanding effective human resource management to sustain performance and service quality (Wilkinson et al., 2014). PT MAK as one of the leading players in Indonesia's maritime logistics sector, provides services such as vessel chartering, cargo handling, and supply chain coordination. The operational nature of the company requires employees to work under high workloads and diverse environmental conditions, thus emphasizing the importance of managing workload and the work environment effectively (Ananda & Handayani, 2024).

In such demanding work settings, human resource management must address two key factors—workload and work environment—which are known to significantly influence employee motivation and performance (Afna & Anwar, 2022; Dewi et al., 2023). Excessive workloads can lead to physical fatigue, job dissatisfaction, and decreased employee performance, especially if not aligned with job capacity and support systems (Anshori, 2019; Steffany & Hikmah, 2023). Conversely, a conducive work environment—both physical and psychosocial—can increase job satisfaction and foster higher levels of work motivation, ultimately enhancing performance outcomes (Ihzardian & Suwitho, 2024).

Although prior studies have widely recognized these relationships, findings regarding the direct impact of workload on performance remain inconsistent. Some research suggests that workload may not significantly affect performance unless

mediated by motivational factors (Ananda & Handayani, 2024; Dewi et al., 2023). This highlights the need to further investigate the mediating role of work motivation, particularly within the maritime logistics industry, where the job nature is both physically and mentally demanding (Alam & Alias, 2018).

In response to these challenges, PT MAK has initiated several employee-centered programs aimed at increasing work motivation and maintaining high performance. These include incentive schemes, workplace facility improvements, employee development programs, and initiatives that promote open communication between supervisors and staff. However, the effectiveness of these strategies has not yet been empirically assessed in terms of their impact on employee motivation and job performance. Therefore, this study aims to examine how workload and work environment influence employee performance through the mediating role of work motivation at PT MAK.

With work motivation serving as a mediating variable at PT MAK, this study seeks to address these shortcomings by examining how workload and work environment affect employee performance. The following research questions are proposed:

- a) Does workload influence work motivation?
- b) Does the work environment influence work motivation?
- c) Does workload influence employee performance?
- d) Does the work environment influence employee performance?
- e) Does work motivation influence employee performance?

- f) Does the simultaneous effect of workload and work environment influence work motivation?
- g) Does the simultaneous effect of workload, work environment, and work motivation influence employee performance?

Literature Review

Human resource management plays a central role in enhancing organizational performance, especially in the logistics and shipping sectors where employee efficiency directly impacts service delivery. This research is based on fundamental management ideas, such as Maslow's Hierarchy of Needs, which holds that people are driven by a hierarchy of needs that begins with basic physiological needs and culminates in self-actualization (Utamaningsih et al., 2019). The understanding of managerial assumptions regarding employee motivation, which ranges from autocratic to participatory approaches, is also guided by McGregor's Theory X and Y (Marliani, 2019). These frameworks are essential in contextualizing how motivation operates within the organizational setting. Moreover, the 5-P Model of HRM (Wilkinson et al., 2014) links philosophy, policies, programs, practices, and processes as strategic elements influencing employee behavior and organizational effectiveness.

In addition, past research emphasizes that work motivation plays a mediating role between job demands and employee outcomes (Alam & Alias, 2018; Rahmadhon, 2024). Therefore, understanding the complex interplay between workload, work environment, motivation, and performance becomes crucial for organizations in dynamic sectors such as maritime logistics.

Workload

Workload refers to the amount and intensity of tasks assigned to an employee within a given period. High workloads, particularly when not aligned with employee capacity, can lead to stress and diminished

performance (Didik Wahyu Setyawan et al., 2024). However, a moderate level of challenge can enhance motivation when perceived as achievable. Empirical studies demonstrate that workload significantly influences work motivation and, indirectly, employee performance (Afna & Anwar, 2022; Dewi et al., 2023). In contrast, other research suggests that the effect of workload on performance is often mediated through other factors such as motivation and satisfaction (Ibrahim et al., 2022; Johan & Satrya, 2023).

Work Environment

A conducive work environment includes physical safety, ergonomic conditions, and interpersonal relationships. The environment not only supports operational efficiency but also serves as a psychological cue that impacts employee morale and engagement (Fauzi et al., 2023). Positive work environments foster motivation and directly correlate with higher performance levels (Opang Abdul Gopar et al., 2022; Peres & Maridjo, 2024). According to Ihzardian and Suwitho (2024), a well-structured work environment reduces stressors and facilitates better communication, both of which are crucial in high-pressure industries like logistics and shipping.

Work Motivation

Motivation is a psychological force that drives goal-directed behavior. Maslow's Hierarchy of Needs states that people are driven to meet a sequence of hierarchical needs, beginning with physiological and safety requirements, progressing via social and esteem needs, and finally aiming for self-actualization (Utamaningsih et al., 2019). In the workplace, these needs translate into aspects such as fair compensation, job security, supportive relationships, recognition, and opportunities for personal growth. When these needs are met, employees are more likely to exhibit strong motivation and optimal performance.

Several empirical studies in the Indonesian organizational context support the role of motivation as a mediating factor between workload, work environment, and performance. Ananda and Handayani (2024) found that motivation significantly moderates the negative impact of excessive workload on performance. Similarly, Dewi et al. (2023) confirmed that motivation helps transform stressful job demands into productive outcomes. Alam and Alias (2018) also highlighted that motivation serves as a vital link connecting organizational expectations to employee productivity.

Employee Performance

Employee performance reflects the effectiveness and efficiency with which employees fulfill their responsibilities. It is influenced by both contextual factors and internal motivators. Studies show that motivation significantly boosts employee output and quality of work (Safitri et al., 2022). Moreover, the integration of workload and work environment management contributes to optimal performance outcomes (Fransiska & Tupti, 2020; Steffany & Hikmah, 2023). Hence, organizations that prioritize these interrelated dimensions can achieve sustainable operational success.

Hypotheses

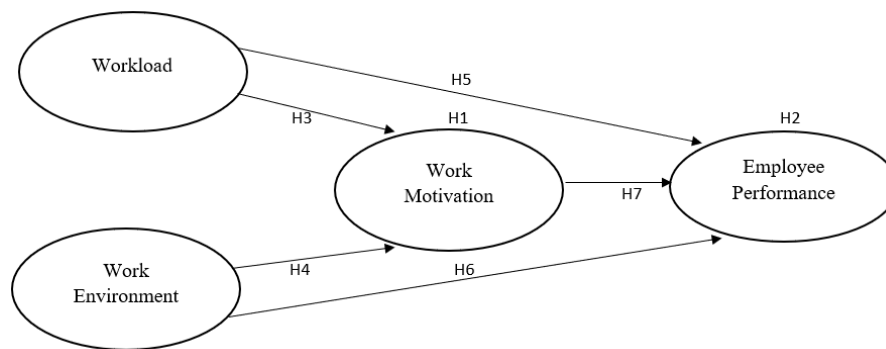


Figure 1. Conceptual Framework

- H1: Workload and work environment simultaneously have a significant effect on work motivation.
- H2: Workload, work environment, and work motivation simultaneously have a significant effect on employee performance.
- H3: Workload has a significant effect on work motivation.
- H4: Work environment has a significant effect on work motivation.
- H5: Workload has a significant effect on employee performance.
- H6: Work environment has a significant effect on employee performance.
- H7: Work motivation has a significant effect on employee performance.

METHODS

Research Design and Sampling

This research uses a quantitative method with a census sampling technique involving 64 employees at PT MAK. Respondents were selected based on their tenure of at least one year to ensure data reliability.

Data Collection

Data were gathered through structured questionnaires consisting of items related to workload, work environment, motivation, and performance. A 5-point Likert scale was used to measure responses. All constructs

passed the validity test (r count > 0.361) and reliability test (Cronbach's Alpha > 0.60), indicating consistency of the measurement instruments

Data Analysis

SPSS 26 was used for statistical analysis, which included hypothesis testing, path analysis, and classical assumption testing (normality, heteroscedasticity, multicollinearity). The regression models were verified using the classical assumption tests. Normality was confirmed via Kolmogorov-Smirnov tests ($p = 0.200$ for both models) and supported by histogram and P-P plot analyses, indicating normally distributed residuals. Scatterplots showed random dispersion of residuals, confirming no heteroskedasticity (Zahriyah et al., 2021:95). Multicollinearity diagnostics revealed tolerance values above 0.10 and VIFs below 10, indicating no multicollinearity issues. Finally, linearity tests yielded significant results ($p < 0.05$), verifying linear relationships between independent and dependent variables, thus ensuring the robustness and reliability of the regression analysis.

RESULT AND DISCUSSION

Workload, Work Environment, and Work Motivation

The f-test for model 1, which examines the effect of workload and work environment on work motivation, the significance value is 0.000. Since this value is less than the 0.05 significance level, it

indicates that workload and work environment together significantly influence work motivation. This means our first regression model effectively explains the changes in work motivation based on these two variables, supporting their combined relevance in predicting motivation.

Workload, Work Environment, Work Motivation, and Employee Performance

The significance value for the f-test for model 2, which examines the combined impact of workload, work environment, and work motivation on employee performance, is likewise 0.000. The fact that this figure is below 0.05 supports the conclusion that these three factors, taken as a whole, have a substantial influence on employee performance. This finding highlights the importance of considering the interplay of these three factors to understand and improve employee performance within an organization.

Workload and Work Motivation

The t-test result showed a calculated t-value of $4.669 > 1.999$ with a significance value of $0.000 < 0.025$. This indicates a significant effect of workload on work motivation. Therefore, the hypothesis stating that workload affects work motivation is accepted. These findings support the theoretical argument that employees tend to feel more motivated when workload is challenging but manageable (Marliani, 2019:168).

Table 1. Determination Coefficient

Model	Correlation Coefficient (R)	Determination Coefficient (R^2)	Adjusted Determination Coefficient (R^2)
Model 1	0,799	0,639	0,627
Model 2	0,766	0,587	0,567
Source: Processed Primary Data, 2025			

Table 2. F Test

Model	Sign. Value	Sign. Standard
Model 1	0,000	0,05
Model 2	0,000	0,05
Source: Processed Primary Data, 2025		

Work Environment and Work Motivation

The test revealed a t-value of 4.704 with a significance level of 0.000. Since the significance value is less than 0.025, the hypothesis is accepted. A supportive work environment enhances employee morale, which in turn increases motivation Fauzi et al., (2023). This result aligns with McGregor's Theory Y, which emphasizes the importance of a conducive work environment in fostering motivation.

Workload and Employee Performance

The t-value for workload's effect on employee performance was only 0.283 with a significance value of 0.778. As this is above the 0.025 threshold, the hypothesis is rejected. Thus, workload does not significantly affect employee performance directly. It suggests that while workload may influence motivation, its direct impact on performance is less significant.

Work Environment and Employee Performance

The result indicates a t-value of 2.435 > 2.000 and a significance level of 0.018 <

0.025. This confirms that the work environment significantly affects employee performance. A clean, safe, and socially supportive workplace appears to encourage more effective and efficient task execution (Wahyuni, 2023).

Motivation and Employee Performance

Work motivation shows a strong and significant impact on performance, with a t-value of 3.653 and a significance value of 0.001. These findings affirm the importance of internal and external motivators in enhancing employee output (Ahid Mudayana & A, 2020) It supports Maslow's hierarchy, particularly on esteem and self-actualization needs, as well as McGregor's Theory Y.

Mediating Effect of Motivation

The link between workload and performance, as well as between work environment and performance, is mediated by motivation. This finding is critical as it highlights motivation as the psychological bridge that enables employees to translate working conditions into performance results.

Table 3. Model Equation Test 1

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1,073	3,008		-0,357	0,723
	Workload (X1)	0,557	0,119	0,446	4,669	0,000
	Work Environment (X2)	0,929	0,198	0,449	4,704	0,000

Source: Processed Primary Data, 2025

Table 4. Model Equation Test 2

Model		Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	Sig.
		<i>B</i>	<i>Std. Error</i>	<i>Beta</i>		
1	(Constant)	14,100	4,551		3,098	0,003
	Workload (X1)	0,059	0,210	0,034	0,283	0,778
	Work Environment (X2)	0,849	0,349	0,293	2,435	0,018
	Work Motivation (Z)	0,707	0,194	0,504	3,653	0,001
Source: Processed Primary Data, 2025						

CONCLUSION

PT MAK faces several challenges in human resource management, particularly in managing high workloads, suboptimal working conditions, and fluctuating employee motivation. These issues are critical because they have direct implications for productivity and the continuity of company operations. Excessive workloads, if not managed wisely, can lead to stress and decreased morale. Therefore, appropriate compensation, balanced task allocation, and managerial support are essential. Moreover, efforts to improve both the physical and psychological aspects of the work environment are necessary to create a safe, comfortable, and supportive workplace.

This study confirms the importance of work motivation as a mediating variable in the relationship between workload, work environment, and employee performance. While workload alone does not directly enhance performance, it can positively influence motivation, which in turn improves performance. Likewise, a supportive work environment has both direct and indirect positive effects on motivation and performance. These findings are especially relevant for companies operating in high-pressure sectors such as maritime logistics.

Managerial Implication

The findings of this study provide several important implications for management, particularly within high-pressure

industries such as maritime logistics. First, managers at PT MAK and similar organizations should focus on creating a balanced workload for employees. While high workloads may not directly reduce performance, they influence motivation, which in turn affects performance. Therefore, ensuring task clarity, equitable distribution of responsibilities, and realistic deadlines can help maintain employee motivation.

Second, improving the work environment—both physical and psychosocial—is critical. Investments in ergonomics, safety, and cleanliness, as well as fostering positive relationships among employees and supervisors, can enhance work motivation and directly improve performance.

Third, management should develop structured programs to foster both intrinsic and extrinsic motivation. This includes recognition systems, career development opportunities, and encouraging employee involvement in decision-making.

Lastly, considering the distinct needs between field crews and office staff, differentiated management approaches are recommended. Field crews may require closer supervision and task-oriented support, while office employees may respond better to autonomy and growth-oriented feedback, consistent with McGregor's Theory X and Y. By integrating these strategies, companies can enhance workforce performance, job satisfaction, and long-term organizational productivity.

Limitations And Future Research

This study is limited by its cross-sectional design and single-company focus. Future research could explore longitudinal effects of motivation or include comparative studies across multiple shipping firms. Moreover, incorporating variables such as leadership style or organizational justice could enrich understanding.

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