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The Effect of Workload, Work Motivation and Employee Competence on Employee Productivity at the Shopee Warehouse in Surabaya

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Abstract: This study aims to analyze the effects of workload, work motivation, and employee competence on employee productivity at Shopee Warehouse Surabaya, both partially and simultaneously. This study employed a quantitative approach using a survey method. The population consisted of 93 employees, all of whom were selected as the sample using a saturated sampling technique. Data were collected through a Likert-scale questionnaire and analyzed using IBM SPSS Statistics version 26, including validity, reliability, classical assumption, multiple linear regression, partial (t-test), simultaneous (F-test), and coefficient of determination (Adjusted R Square) analyses. The results indicate that workload has no significant effect on employee productivity. In contrast, work motivation and employee competence have a positive and significant effect on employee productivity. Simultaneously, workload, work motivation, and employee competence significantly affect employee productivity. The R Square value of 0.655 indicates that 65.5% of the variation in employee productivity is explained by the three independent variables, while the remaining 34.5% is influenced by other factors outside the scope of this study. These findings are expected to provide practical recommendations for improving employee productivity through competency development, enhanced work motivation, and effective workload management.

Keywords: Employee Competence; Employee Productivity; Multiple Linear Regression; Workload; Work Motivation

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1. Introduction

The rapid advancement of digital technology and internet accessibility has accelerated the growth of the e-commerce industry in Indonesia. According to Statistics Indonesia (BPS-Statistic Indonesia, 2024), the value of e-commerce transactions has continued to increase annually. Furthermore, Similarweb reported that one of the leading e-commerce platforms in Indonesia consistently records the highest number of website visits. The continuous growth of online transactions has intensified operational activities in logistics centers and warehouses, requiring companies to improve operational efficiency through effective human resource management.

This study was conducted at a logistics warehouse of a leading e-commerce company located in Surabaya, Indonesia. The warehouse is responsible for handling receiving, storage, sorting, picking, packing, and shipping activities. These operations require employees to perform their tasks efficiently, accurately, and carefully while complying with established standard operating procedures. During major promotional campaigns, such as 9.9, 10.10, 11.11, 12.12, and the National Online Shopping Day (Harbolnas), the volume of processed orders increases substantially, resulting in higher workloads and more

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demanding performance targets. Under these circumstances, employee productivity becomes a critical factor in ensuring operational efficiency and maintaining service quality.

Employee productivity is widely recognized as one of the key indicators of organizational performance. Hasibuan (2017) defines work productivity as the comparison between work output and the resources utilized in the production process. Therefore, improving employee productivity requires effective human resource management practices that enable organizations to achieve their strategic objectives.

Several factors have been identified as determinants of employee productivity, including workload, work motivation, and employee competence. According to Koesomowidjojo (2017), workload refers to the amount of work assigned to an employee within a specified period. An appropriate workload that matches employees' capabilities can improve productivity, whereas excessive workload may generate work-related stress and reduce employee performance (Sunyoto, 2020). Furthermore, Hasibuan (2017) explains that work motivation represents the internal drive that encourages employees to perform effectively and efficiently in achieving organizational goals. Consequently, organizations should maintain employee motivation by providing fair compensation, career development opportunities, effective communication, and a supportive working environment. Employee competence is another important determinant of productivity. Wibowo (2016) defines competence as a combination of knowledge, skills, and work attitudes that enable individuals to perform their jobs successfully. Employees with higher levels of competence are more likely to demonstrate superior productivity.

Previous empirical studies have reported inconsistent findings regarding the relationship between workload and employee productivity. Agistiani & Mulyandani (2024) found that workload has a significant positive effect on employee productivity. Similarly, studies examining the effect of work motivation have produced mixed findings across different organizational settings. In contrast, most previous studies consistently indicate that employee competence positively influences employee productivity and job performance. Moreover, empirical studies examining the simultaneous effects of workload, work motivation, and employee competence on employee productivity in Indonesia's e-commerce logistics sector remain limited. These inconsistent findings and the limited empirical evidence indicate the existence of a research gap that warrants further investigation.

Unlike previous studies, the present research examines the simultaneous effects of workload, work motivation, and employee competence on employee productivity using multiple linear regression analysis. The study involves the entire population of 93 employees through a saturated sampling technique. This approach is expected to provide a more comprehensive understanding of the determinants of employee productivity in the logistics and e-commerce industry.

Based on the foregoing discussion, this study aims to examine the effects of workload, work motivation, and employee competence on employee productivity, both individually and simultaneously. The findings are expected to contribute to the development of Human Resource Management literature, particularly in the context of employee productivity within the logistics sector. Furthermore, the results are expected to provide practical implications for logistics and e-commerce companies in developing policies related to workload management, employee motivation enhancement, and competency development to improve employee productivity and overall organizational performance.

2. Materials and Methods

This study employed a quantitative research approach using a survey method to examine the effects of workload, work motivation, and employee competence on employee productivity at the Shopee Warehouse in Surabaya. The employees of the Shopee Warehouse in Surabaya served as the research participants.

The study population consisted of 93 employees. A saturated sampling (total sampling) technique was employed, in which all members of the population were included as the research sample.

Primary data were collected through a structured questionnaire using a five-point Likert scale, ranging from Strongly Disagree (SD) to Strongly Agree (SA). The research instrument was developed based on the indicators of each research variable, namely workload (X_1), work motivation (X_2), employee competence (X_3), and employee productivity (Y).

The collected data were analyzed using IBM SPSS Statistics Version 26. The data analysis procedures included validity testing, reliability testing, classical assumption tests (normality, multicollinearity, and heteroscedasticity), multiple linear regression analysis, partial hypothesis testing (t-test), simultaneous hypothesis testing (F-test), and the coefficient of determination (Adjusted R Square) to determine the extent to which the independent variables explain the variation in the dependent variable.

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3. Results

This study involved 93 respondents, all of whom were employees of the Shopee Warehouse in Surabaya. Based on the respondents' demographic characteristics, the majority were male, accounting for 85 respondents (91.4%), while 8 respondents (8.6%) were female. In terms of age distribution, most respondents were between 21 and 25 years old, comprising 50 respondents (53.8%). This was followed by respondents aged 26–30 years, totaling 34 respondents (36.6%). Meanwhile, 5 respondents (5.4%) were aged 15–20 years, and 4 respondents (4.3%) were between 31 and 35 years old.

Table 1. Respondent

Characteristic	Category	Frequency	Percentage
Gender	Male	85	91,4%
	Female	8	8,6%
Age	15–20 years	5	5,4%
	21–25 years	50	53,8%
	26–30 years	34	36,6%
	31–35 years	4	4,3%

3.1. Validity Test

The validity test in this study was conducted using IBM SPSS Statistics Version 26 by examining the Corrected Item–Total Correlation values. The purpose of the validity test was to determine whether each questionnaire item was capable of accurately measuring the intended research variable. According to Ghozali (2021). a questionnaire item is considered valid if its Corrected Item–Total Correlation value is greater than the critical r-table value at the 5% significance level or if its significance value (p-value) is less than 0.05. Therefore, all questionnaire items were evaluated based on these validity criteria before proceeding to the subsequent data analysis.

Table 2. Validity Test

Variable	Item	Calculated r (r-count)	Critical r	Result
Workload (X1)	X1.1	0,816	0,2039	Valid
Workload (X1)	X1.2	0,870	0,2039	Valid
Workload (X1)	X1.3	0,788	0,2039	Valid
Workload (X1)	X1.4	0,879	0,2039	Valid
Work Motivation (X_2)	X2.1	0,808	0,2039	Valid
Work Motivation (X_2)	X2.2	0,921	0,2039	Valid
Work Motivation (X_2)	X2.3	0,806	0,2039	Valid
Work Motivation (X_2)	X2.4	0,881	0,2039	Valid
Work Motivation (X_2)	X2.5	0,885	0,2039	Valid
Employee Competence (X3)	X3.1	0,912	0,2039	Valid
Employee Competence (X3)	X3.2	0,958	0,2039	Valid
Employee Competence (X3)	X3.3	0,945	0,2039	Valid
Employee Competence (X3)	X3.4	0,915	0,2039	Valid
Employee Competence (X3)	X3.5	0,954	0,2039	Valid
Employee Productivity (Y)	Y1	0,868	0,2039	Valid
Employee Productivity (Y)	Y2	0,932	0,2039	Valid
Employee Productivity (Y)	Y3	0,908	0,2039	Valid
Employee Productivity (Y)	Y4	0,946	0,2039	Valid
Employee Productivity (Y)	Y5	0,947	0,2039	Valid

Based on the validity test results presented in Table 4.7, all questionnaire items measuring Workload (X_1), Work Motivation (X_2), Employee Competence (X_3), and Employee Productivity (Y) obtained calculated r-values (r-count) greater than the critical r-value (r-table) of 0.2039. The calculated r-values ranged from 0.788 to 0.958, indicating that all questionnaire items met the validity criteria. In addition, all items had significance values (p-values) below 0.05, demonstrating a statistically significant correlation between each item and the total score of its respective variable. Therefore, all questionnaire items were

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considered valid and appropriate for use as research instruments. Consequently, the data were deemed suitable for further reliability testing and subsequent statistical analyses.

3.2. Reliability Test

Reliability testing was conducted using Cronbach's Alpha with IBM SPSS Statistics. A variable is considered reliable if the Cronbach's Alpha value is greater than 0.70.

Table 3. Reliability Test

Variable	Cronbach's Alpha	Interpretation
Workload (X_1)	0.858	Reliable
Work Motivation (X_2)	0.911	Very Reliable
Employee Competence (X_3)	0.964	Very Reliable
Employee Productivity (Y)	0.955	Very Reliable

The results indicate that all variables have Cronbach's Alpha values above 0.70, indicating that all research instruments are reliable. The Workload variable obtained a Cronbach's Alpha of 0.858 (reliable), while Work Motivation (0.911), Employee Competence (0.964), and Employee Productivity (0.955) were classified as very reliable. These results indicate that all questionnaire items have good internal consistency and are suitable for further analysis.

3.3. Classical Assumption Test Results

3.3.1. Normality Test

Normality was tested using the Normal Probability Plot (P-P Plot). The results show that the residual points are distributed around and follow the diagonal line, indicating that the regression residuals are normally distributed. Therefore, the regression model satisfies the normality assumption.

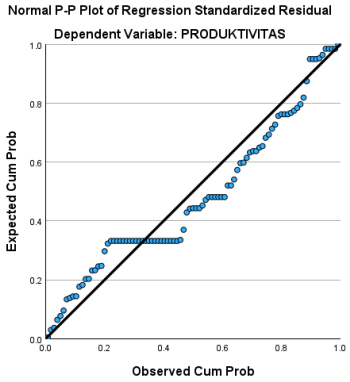


Figure 1. Normality Test

3.3.2. Multicollinearity Test

Table 4. Multicollinearity Test Results

Variable	Tolerance	VIF	Result
Workload (X_1)	0,421	2,377	No multicollinearity
Work Motivation (X_2)	0,631	1,585	No multicollinearity
Employee Competence (X_3)	0,532	1,881	No multicollinearity

Based on Table 4, all independent variables have Tolerance values greater than 0.10 and VIF values less than 10, indicating that the regression model is free from multicollinearity.

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3.3.3. Heteroscedasticity Test

The heteroscedasticity test was conducted using a Scatterplot. The scatterplot shows that the residual points are randomly distributed above and below zero without forming a specific pattern. Therefore, the regression model does not exhibit heteroscedasticity and meets the classical assumption.

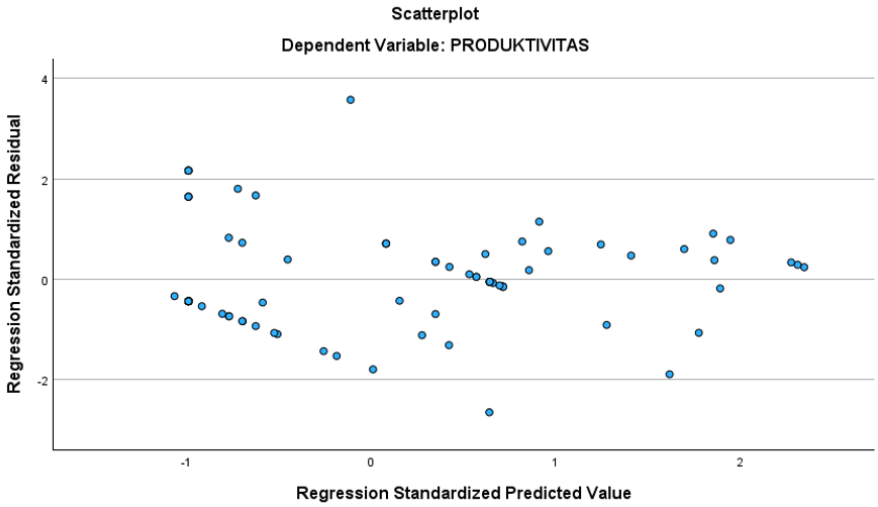


Figure 2. Heteroscedasticity Test

The heteroscedasticity test can be performed using a scatterplot graph. If the data points are randomly distributed above and below the zero value on the Y-axis and do not form any specific pattern, the regression model is considered free from heteroscedasticity. Conversely, if the data points exhibit a clear or systematic pattern, the regression model is considered to have heteroscedasticity (Azizah et al., 2021).

3.4. Multiple Linear Regression Analysis Results

Multiple linear regression analysis was conducted to examine the effect of Workload (X_1), Work Motivation (X_2), and Employee Competence (X_3) on Employee Productivity (Y). The analysis was performed using IBM SPSS Statistics.

Table 5. Multicollinearity Test Results

Variable	B	Beta	t	Sig.
Constant	3.066	-	2.202	0.030
Workload (X_1)	-0.046	-0.031	-0.323	0.748
Work Motivation (X_2)	0.190	0.175	2.239	0.028
Employee Competence (X_3)	0.698	0.738	8.650	<0.001

The multiple regression equation is:

$$\boldsymbol{Y = 3\,066 - 0\,046X_1 + 0\,190X_2 + 0\,698X_3}$$

The regression results indicate that workload has a negative regression coefficient (-0.046), while work motivation (0.190) and employee competence (0.698) have positive regression coefficients. Employee competence has the largest coefficient, indicating that it is the most influential variable in improving employee productivity.

Based on the results of the multiple linear regression analysis:

- Workload has a negative regression coefficient, indicating that an increase in workload tends to reduce employee productivity.
- Work motivation has a positive regression coefficient, indicating that higher levels of work motivation are associated with increased employee productivity.
- Employee competence has the largest positive regression coefficient, suggesting that it is the most influential independent variable in improving employee productivity among the variables examined in this study.

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3.5. Hypothesis Test

3.5.1. Simultaneous Test (F-Test)

Table 6. Simultaneous Test (F-Test) Results

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	625.354	3	208.451	56.340	<,001[b]
	Residual	329.291	89	3.700		
	Total	954.645	92			

a. Dependent Variable: Produktivitas
b. Predictors: (Constant), Kompetensi, Motivasi, Beban

The results of the F-test showed an F-value of 56.340 with a significance value of < 0.001. These findings indicate that workload, work motivation, and employee competence simultaneously have a significant effect on employee productivity. Therefore, the regression model is considered statistically significant and appropriate for explaining the relationship between the independent variables and the dependent variable in this study.

3.5.2. Partial Test (t-Test)

The results of the t-test indicated that workload did not have a significant effect on employee productivity ($p = 0.748$). In contrast, work motivation ($p = 0.028$) and employee competence ($p < 0.001$) had positive and statistically significant effects on employee productivity. Among the three independent variables, employee competence was identified as the most dominant predictor of employee productivity, indicating that it contributed the strongest influence on the dependent variable in this study.

Table 7. Partial Test (t-Test)

Variable	t-Value	Sig.	Interpretation
Workload (X_1)	-0,323	0,748	No Significant Effect
Work Motivation (X_2)	2,239	0,028	Significant Effect
Employee Competence (X_3)	8,650	<0,001	Significant Effect

3.5.3. Coefficient of Determination (R^2)

Table 8. Coefficient of Determination (R^2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.809a	.655	.643	1.92351

a. Predictors: (Constant), Kompetensi, Motivasi, Beban
b. Dependent Variable: Produktivitas

Table 9. R Square

Model	R	R Square	Adjusted R Square
1	0,809	0,655	0,643

The R Square value of 0.655 indicates that 65.5% of the variation in employee productivity can be explained by workload, work motivation, and employee competence. The remaining 34.5% of the variation is attributed to other factors that were not included in the research model.

4. Discussion

1. The findings of this study indicate that workload does not have a statistically significant effect on employee productivity. This result suggests that variations in workload do not necessarily lead to changes in employee productivity at the Shopee Warehouse in Surabaya. According to Koesomowidjojo (2017), workload refers to the amount of work assigned to employees within a

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specific period and should be adjusted to their capabilities to achieve optimal performance. Furthermore, Sunyoto (2020) argues that excessive workload may reduce employee performance by creating work-related stress, whereas an appropriate workload can support productivity. The findings of this study imply that the workload assigned to employees at the Shopee Warehouse in Surabaya is generally well balanced and remains within employees' capacity. Consequently, employees are able to complete their tasks effectively without experiencing excessive workload that could negatively affect their productivity.

2. The results also reveal that work motivation has a positive and statistically significant effect on employee productivity. This finding indicates that employees with higher levels of work motivation tend to demonstrate higher productivity. The result supports Hasibuan's (2017) theory, which states that work motivation is the internal driving force that encourages employees to perform their duties effectively and efficiently in achieving organizational objectives. Employees who receive appropriate rewards, career development opportunities, effective communication, and organizational support are more likely to maintain high levels of motivation, leading to improved work performance and productivity. Therefore, strengthening employee motivation is an important strategy for improving productivity within the logistics and e-commerce industry.
3. Furthermore, the findings demonstrate that employee competence has a positive and statistically significant effect on employee productivity and represents the most dominant independent variable in this study. This result is consistent with Wibowo (2016), who defines competence as the integration of knowledge, skills, and work attitudes that enable employees to perform their jobs successfully. Employees possessing higher levels of competence are better equipped to complete their tasks accurately, efficiently, and in accordance with organizational standards, thereby achieving higher levels of productivity. The dominant influence of employee competence indicates that enhancing employees' knowledge, technical skills, and professional attitudes should be a primary focus of human resource management. Consequently, organizations are encouraged to invest in continuous training, competency development programs, and performance improvement initiatives to enhance employee productivity and strengthen organizational competitiveness.
4. The F-test results indicate that workload, work motivation, and employee competence simultaneously have a significant effect on employee productivity at Shopee Warehouse Surabaya. This finding suggests that employee productivity is influenced by the combined contribution of appropriate workload management, strong work motivation, and adequate employee competence. These three variables explain 65.5% of the variation in employee productivity, while the remaining 34.5% is influenced by other factors outside the scope of this study. This finding supports Hasibuan (2017), who stated that productivity is influenced by several interrelated factors, and is consistent with the studies of Aprilyanto et al. (2025) and Riswanto et al. (2020), which found that workload, work motivation, and competence contribute to improving employee performance and productivity.

5. Conclusions

1. Workload has no significant effect on employee productivity at Shopee Warehouse Surabaya, indicating that the workload assigned to employees remains within their capacity to complete work according to company targets.
2. Work motivation has a positive and significant effect on employee productivity. Employees with higher work motivation tend to perform their duties more effectively and achieve higher productivity.
3. Employee competence has a positive and significant effect on employee productivity and is the most dominant variable in this study. Employees with better knowledge, skills, and abilities are more capable of completing their work effectively and efficiently.
4. Workload, work motivation, and employee competence simultaneously have a significant effect on employee productivity. This finding indicates that employee productivity is influenced by the combined contribution of multiple human resource factors.
5. The coefficient of determination (R Square) of 0.655 indicates that 65.5% of the variation in employee productivity is explained by workload, work motivation, and employee competence, while the remaining 34.5% is influenced by other factors outside the scope of this study. Therefore, companies should prioritize competency development, maintain employee motivation, and manage workload appropriately to improve employee productivity.

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