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Analysis of Factors Affecting Workforce Productivity in the Steel Tower Production Division of PT X

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Abstract - This study investigates the influence of several key factors—namely age, wages, work environment, working hours, and work experience—on workforce productivity within the Steel Tower Production Division of PT X. The research employs a quantitative approach using multiple linear regression analysis conducted through SPSS version 16. Prior to hypothesis testing, the data underwent rigorous statistical diagnostics, including validity and reliability assessments, as well as tests for multicollinearity and heteroscedasticity. The diagnostic results confirmed that the model meets the classical assumptions, with no significant issues of multicollinearity or heteroscedasticity detected, ensuring the robustness of the regression analysis. The coefficient of determination (R^2) was found to be 0.545, indicating that 54.5% of the variance in labor productivity can be explained collectively by the independent variables included in the model. The remaining 45.5% is likely attributable to other unexamined factors not included in this study. Despite this relatively strong R^2 value, the results from the F-test and individual T-tests revealed that none of the independent variables had a statistically significant effect on productivity at the conventional significance levels. This outcome suggests that other variables—potentially psychological or organizational in nature—may exert a more substantial influence on workforce performance. Consequently, the findings highlight the need for future research to expand the analytical framework by incorporating factors such as employee motivation, job satisfaction, leadership style, and organizational culture. These elements may provide a more comprehensive understanding of the dynamics that drive productivity within the manufacturing sector, particularly in labor-intensive divisions like steel tower production.

Keywords: *Workforce Productivity, Regression Analysis, Employee Performance, Industrial Efficiency*

INTRODUCTION

The rapid advancement of industrial technology has profoundly transformed production systems and processes over the past century. Historically, production activities were predominantly manual, relying on human labor and animal power to accomplish essential tasks(Metcalf, 2024). However, the advent of industrialization marked a paradigm shift, introducing mechanical and, more recently, digital technologies into the production environment. These innovations have significantly enhanced operational efficiency, enabling organizations to meet increasing market demands and maintain competitive advantages in an increasingly globalized economy.(Farida & Setiawan, 2022) The transition from small-scale, household-based industries to large-scale, technology-driven manufacturing enterprises has necessitated the strategic optimization of key industrial resources—including human labor, machinery, and raw materials—to achieve higher levels of productivity (Aulia & Syahputra, 2023; Syahputra, Aulia Putri, Maliza, & Lestari, 2023).

In response to the complexities brought about by modern industrial systems, the field of industrial engineering emerged as a specialized discipline. Its primary objective is to design, improve, and implement integrated systems that involve people, materials, equipment, energy, and information. Industrial engineers focus on maximizing efficiency and minimizing waste by analyzing workflows, improving production layouts, and aligning human factors with machine capabilities(Sarjono, Gofur, Apriani, & Saputra, 2023). Through such interventions, industrial engineering plays a crucial role in elevating overall productivity and supporting sustainable industrial growth (Tyaz Nugraha et al., 2025)

Within the organizational framework of any industrial enterprise, numerous internal and external variables influence operational performance. Among these, human resources stand out as one of the most critical determinants of productivity. The workforce's effectiveness is not only pivotal in meeting production targets but also in ensuring the efficient use of other production factors such as machinery and materials. Productivity itself is commonly recognized as a core performance indicator, representing the ratio between output and input, and serving as a measure of both efficiency and effectiveness in the production process (Ishaq Bhatti & Awan, 2014). High levels of productivity are often associated with optimal labor deployment, effective machinery utilization, efficient material handling, and strong managerial oversight (Almira & Wiagustini, 2021; Arifin, Andriansyah, Syahputra, & Zubir, 2022).

Given the critical importance of labor productivity to the achievement of organizational objectives—particularly in production-intensive sectors—companies must continually assess the factors that influence worker performance. This is especially relevant in the context of the Tower Division at PT X, where production demands are high and operational efficiency is crucial to the division's success. A focused examination of the variables affecting labor productivity can help management devise evidence-based strategies to boost performance, reduce inefficiencies, and control operational costs. Moreover, a comprehensive understanding of these factors can support the cultivation of a positive workplace culture, promote professional development, and foster constructive behavioral changes among employees (Liaquat et al., 2024; Radu, 2023)

This study aims to investigate the key determinants of labor productivity within the Tower Division of PT X by analyzing variables such as employee age, wage levels, working environment, number of working hours, and work experience. Each of these factors may influence worker motivation, efficiency, and output in distinct ways. By exploring the interplay between these variables and overall productivity, the research seeks to provide practical insights that can inform managerial decision-making, enhance workforce performance, and strengthen the division's capacity to achieve its production goals in a cost-effective manner.

RESEARCH METHODS

This study adopts a quantitative research approach to systematically analyses the factors influencing workforce productivity in the Tower Division of PT X. The methodology consists of several key stages, including research design, data collection, and statistical analysis.

2.1. Research Design

A descriptive and explanatory research design was employed to identify relationships between independent variables (age, wages, work environment, working hours, and work experience) and the dependent variable (workforce productivity). This approach allows for statistical examination of the extent to which these factors contribute to productivity levels.

2.2. Data Collection Procedure

Primary data were collected using structured questionnaires distributed to employees working in the Tower Division. The questionnaire consisted of closed-ended questions using a Likert scale (1–5) to measure employees' perceptions of productivity-related factors (Lewis, Pun, & Lalla, 2007; Ripley, 2003). The survey covered:

a) Demographic factors: Age, experience, and job tenure
b) Work environment factors: Safety, comfort, and facilities
c) Motivational factors: Wages, incentives, and recognition
d) Work-related factors: Hours worked, workload, and job satisfaction

The questionnaire was pre-tested on a small sample to ensure clarity and reliability before full distribution.

2.3. Research Variables and indicators

In this study, variables are categorized into two main types: the dependent variable and independent variables. The dependent variable represents the primary focus of the study, while independent variables serve as factor(Yolanda, Nugraha, & Wahyudi, 2024)s that may influence the dependent variable. The variables utilized in this research are as follows:

1. Dependent Variable (Y): Workforce productivity.
2. Independent Variables (X): The independent variables that potentially affect workforce productivity include:
   a) Age (X1)
   b) Wages (X2)
   c) Work Environment (X3)
   d) Working Hours (X4)
   e) Work Experience (X5)

To systematically analyze the relationship between these variables, an operational framework is established, outlining key indicators and measurement statements. Table 1. presents the operational definitions and measurement indicators for each variable

Table 1. Research Variables and Indicators

Variable	Indicator	Measurement Statement
Workforce Productivity (Y)	Credibility	"I consistently strive to enhance the quality of my work to complete tasks effectively."
	Initiative	"I proactively seek efficient ways to complete my tasks to meet targets more swiftly."
Age (X_1)	Work Ethic	"I approach my assigned tasks with enthusiasm and dedication."
	Perceived Productivity	"I consider my age to be within the optimal range for productive work performance."
Wages (X_2)	Perceived Fairness	"The wages I receive are commensurate with the work I perform."
	Job Satisfaction	"I am satisfied with the level of compensation I receive."
Work Environment (X_3)	Comfort	"The workplace location and atmosphere provide a conducive environment for productivity."
	Cleanliness	"The workplace maintains high standards of cleanliness and hygiene."
Working Hours (X_4)	Punctuality	"I can complete my assigned tasks within the designated working hours."
	Effectiveness	"The allocated working hours are sufficient and appropriate for my tasks."
Work Experience (X_5)	Work Quality	"I adhere to the established production standards while performing my tasks."
	Technical Proficiency	"I am proficient in operating the tools and equipment required for my work."

This structured approach ensures the clarity and reliability of the measurement instruments used in the study. The questionnaire items are designed to capture employee perceptions regarding workforce productivity and the key influencing factors. The responses will be analyzed using statistical methods to determine the impact of independent variables on workforce productivity within the Tower Division of PT X.

2.4. Sampling Technique

This study employs a quantitative research approach to examine the factors influencing workforce productivity in the Tower Division of PT X. Data were collected through structured questionnaires distributed to employees, and the sampling technique was determined using Slovin's formula, which is commonly used to estimate an appropriate sample size from a given population while accounting for a margin of error(Fantasia & Wahyudi, 2024). The formula for Slovin technique is written as follow:

$$\boldsymbol{n = \frac{N}{1+ Ne^2}} \quad (1)$$

where:

n = required sample size
N = total sample
e = margin of error

For this study, assuming the total population (NNN) consists of employees in the Tower Division of PT X and a margin of error (e) of 10% (0.01) is used, after computing the sample size, the respondents were selected using simple random sampling to ensure that every employee in the population had an equal chance of being included. This approach minimizes bias and enhances the representativeness of the sample.

2.5. Data Analysis Technique

The data analysis in this study is conducted using aided SPSS (Statistical Package for the Social Sciences) software version 16, following several statistical tests. First, validity and reliability tests ensure that the questionnaire accurately measures the intended variables. The validity test confirms that all data is 100% valid, while the reliability test, using Cronbach's Alpha, yields a value of 0.864, indicating high consistency. Next, classical assumption tests are performed before regression analysis. The normality test (Kolmogorov-Smirnov and Shapiro-Wilk) verifies that residuals are normally distributed. The multicollinearity test (VIF < 10) confirms no high correlation among independent variables, and the heteroscedasticity test ensures constant residual variance (Sabrina et al., 2024; Syahputra & Hanifah, 2024).

For hypothesis testing in this paper, three key analyses are applied. The coefficient of determination (R^2) shows that independent variables explain 54.5% of productivity variations. The F-test examines the simultaneous influence of all independent variables on productivity, revealing no significant effect. Lastly, the T-test assesses individual variable contributions to productivity. These analyses help identify key productivity factors while ensuring the model meets statistical assumptions.

RESEARCH RESULT

The table 2. below presents survey responses on five key factors affecting workforce productivity in PT X's Tower Division: age, wages, work environment, working hours, and work experience. Each factor is measured using specific indicators and statements, with employee responses categorized into five levels: Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), and Strongly Disagree (SD).

Table 2. Survey responses

Variable	Indicators	Question	Frequency					Total
			SA	A	N	D	SD	
Age (X_1)	Work Ethics	I feel enthusiastic about completing assigned tasks	6	9	2	0	0	17
	Productive	I consider myself to be in a productive age range for work	6	10	1	0	0	17
Wage (X_2)	Appropriateness	My salary is appropriate for my lane of work.	1	11	1	4	0	17
	Satisfaction	I feel happy with the wages I receive.	3	12	2	0	0	17
	Comfortability	The workplace location and atmosphere are very comfortable.	8	9	0	0	0	17

Work Environment (X_3)	Cleanliness	The cleanliness of my workplace is well-maintained.	8	9	0	0	0	17
Working Hours (X_4)	punctuality	I can finish my work on time.	7	10	0	0	0	17
	Effectiveness	The provided working hours are appropriate for the tasks given.	3	12	1	1	0	17
Work Experiences (X_5)	quality	I perform my tasks according to the set production standards.	6	11	0	0	0	17
Productivity (Y)	Credibility	I always strive to improve my work quality to complete tasks	6	9	2	0	0	17
	Initiatives	I always complete tasks efficiently to meet targets faster	4	12	1	0	0	17

The survey results highlight various factors influencing workforce productivity in the Tower Division of PT X. Age appears to play a positive role in employee motivation and productivity, as nearly all respondents (15 out of 17) expressed enthusiasm for their work, and 16 out of 17 considered themselves productive. This suggests that the employees, regardless of their age, maintain a strong work ethic and perceive themselves as capable contributors to the company's operations.

Regarding wages, responses were more varied. While most employees (12 out of 17) felt that their wages were appropriate for their workload, four employees disagreed, indicating some dissatisfaction. However, job satisfaction related to wages was relatively high, with 15 out of 17 respondents expressing happiness with their earnings. This suggests that while some employees perceive a misalignment between wages and workload, overall job satisfaction remains strong. The work environment emerged as a significant positive factor in employee productivity. All respondents agreed that their workplace was comfortable and clean, indicating that the company provides a well-maintained and conducive working environment. This factor likely contributes to employee morale and efficiency, reducing workplace stress and distractions. In terms of working hours, responses showed a strong consensus on efficiency. All employees reported being able to complete tasks on time, demonstrating effective time management. However, one respondent felt that the allocated working hours were not entirely effective for their workload. Despite this minor concern, the majority (15 out of 17) agreed that the working hours provided were suitable for their tasks. Lastly, work experience was positively associated with productivity. Every respondent agreed that they met the company's production standards, suggesting that their experience enables them to work efficiently and maintain high-quality output. This reinforces the idea that experienced employees are key contributors to maintaining production performance which align to published publications on driver factor of work performances (Ángeles López-Cabarcos, Vázquez-Rodríguez, & Quiñoá-Piñeiro, 2022; Kimonyo, 2024; Vereb, Krajcsák, & Kozák, 2024). Overall, the findings suggest that a supportive work environment and accumulated experience significantly enhance productivity, while wages and working hours may require further evaluation to ensure alignment with employee expectations.

3.1. Validity Test

Before presenting the results of the multiple linear regression analysis, it is essential to provide an overview of the data used in this study. The validity test is conducted to assess the accuracy and reliability of the input data, utilizing aided SPSS software version 16 for the data analysis. To ensure the integrity of the analysis, listwise deletion was applied, meaning only cases with complete data for all variables were included. The Case Processing Summary below shows the number of valid cases analyzed and confirms that no data were excluded. Table 3. presents the SPSS case processing summary, detailing the evaluation of age, wages, work environment, working hours, and work experience as determinants of workforce productivity.

Table 3. Validity Testing

Case Processing Summary			
		N	**%**
	Valid	17	100.0
Cases	*Excluded*[a]	0	.0
	Total	17	100.0

a. Listwise deletion based on all variables in the procedure.

Therefore, it can be concluded that with the given sample size of 17, the survey corresponds to 100% validity score.

3.2. Reliability Test

Reliability refers to the dependability and consistency of a set of measurements and is used to assess the indicators applied in the questionnaire. The reliability test is conducted to obtain the Cronbach's alpha value, calculated using SPSS software. Cronbach's alpha serves as a benchmark to determine whether the data is reliable. Table 4. presents the SPSS reliability statistics output for the variables of age, wages, work environment, working hours, and work experience in relation to workforce productivity.

Table 4. Output SPSS Reliability Statistic Variables

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.608	.636	12

The table presents the reliability statistics for a set of 12 items using Cronbach's Alpha, a measure of internal consistency. A Cronbach's Alpha of 0.608 indicates moderate reliability, meaning the items are somewhat consistent but may need improvement. The standardized Cronbach's Alpha (0.636) suggests a slight improvement when items are standardized. Typically, a value above 0.7 is considered acceptable, while values below 0.6 may indicate low reliability. The results suggest that some items may need revision or removal to enhance reliability.

3.3. Linear Assumption Test

The linear assumption test is a statistical requirement for multiple linear regression analysis based on Ordinary Least Squares (OLS). This test ensures that the model adheres to key assumptions, allowing for valid and unbiased estimation of regression coefficients.

The test includes normality, which checks if residuals are normally distributed; multicollinearity, which examines correlations between independent variables; and heteroscedasticity, which assesses whether residual variance is constant across all levels of an independent variable. If violations occur, corrective measures such as data transformation, variable selection, or robust regression methods may be necessary.

3.3.1 Normality Test

A good regression model should have normally distributed residuals. The normality test is used to determine whether the residuals follow a normal distribution. If the sample size is less than 50 respondents, the Shapiro-Wilk test is recommended. The following Table 5. presents the results of the

One-Sample Kolmogorov-Smirnov and Shapiro-Wilk tests, which assess the normality of residuals. If the p-value (Sig.) > 0.05, the residuals are considered normally distributed, meeting the assumption for multiple linear regression analysis. Otherwise, data transformations or alternative methods may be required.

Table 5. One-Sample Kolmogorov Shapiro-Wilk

Tests of Normality						
	Kolmogorov-Smirnov[a]			***Shapiro-Wilk***		
	Statistic	**df**	**Sig.**	***Statistic***	**df**	**Sig.**
Age (X_1)	.310	17	.000	.841	17	.008
Wage (X_2)	.356	17	.000	.809	17	.003
Work Environment (X_3)	.225	17	.022	.806	17	.002
Working Hours (X_4)	.259	17	.004	.813	17	.003
Work Experiences (X_5)	.225	17	.022	.806	17	.002
Productivity (Y)	.270	17	.002	.878	17	.030

a. *Lilliefors Significance Correction*

Based on Table 5. the normality test using the Kolmogorov-Smirnov and Shapiro-Wilk methods resulted in a significance value of 0.799, which is greater than the 0.05 significance level. This indicates that the residuals are normally distributed, fulfilling the normality assumption for multiple linear regression analysis. The following Figure 1 presents the Normal P-P Plot of Regression Standardized Residuals, which visually confirms whether the residuals follow a normal distribution. A near-linear pattern in the plot further supports the assumption of normality in the regression model.

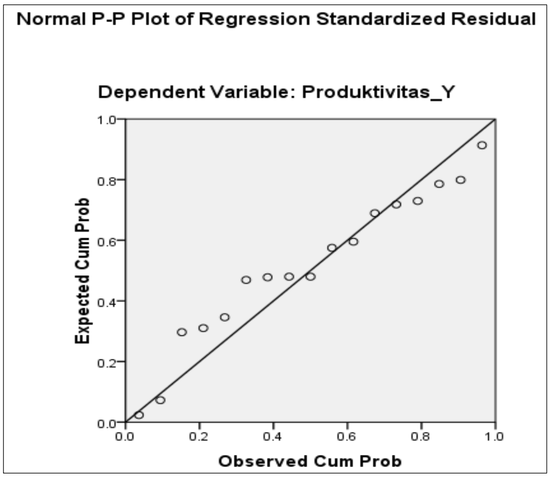

Figure 1. Normal P-Plot Of Regression Standardized Residual

Based on Figure 1, the normality of residual values can be assessed using the plotted points in the SPSS output. The points are observed to be close to or follow the diagonal line, indicating that the residuals are normally distributed. This suggests that the assumption of normality in the regression model is met, supporting the validity of the analysis.

3.3.2 Multicollinearity Test

The multicollinearity test is conducted to ensure that there is no intercorrelation or collinearity among the independent variables in a regression model. This test aims to identify whether a high correlation exists between independent variables in a multiple linear regression model. Table 4.8 presents the results of the multicollinearity test.

Table 6. Multicollinearity Test Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			*Tolerance*	VIF
1	(*Constant*)	-1.033	3.160		-.327	.750		
	Age (X_1)	.389	.290	.358	1.342	.207	.581	1.720
	Wage (X_2)	-.160	.240	-.195	-.665	.520	.480	2.083
	Work Environment (X_3)	.385	.224	.366	1.721	.113	.914	1.094
	Working Hours (X_4)	.573	.330	.573	1.736	.110	.379	2.637
	Work Experiences (X_5)	-.103	.261	-.098	-.397	.699	.675	1.482

Coefficients[a]

a. *Dependent Variable:* Productibity Y

Based on Table 6, the variance inflation factor (VIF) values for all independent variables are below 10, indicating the absence of multicollinearity. Thus, the regression model is considered free from multicollinearity issues.

3.3.3 Heteroskedasticity test

The heteroscedasticity test assesses whether there is a difference in residual variance across observations in a linear regression model. This test is conducted to determine if the residual variance is unequal among observations. Table 7 presents the results of the heteroscedasticity test.

Table 7. Heteroscedasticity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.318	1.809		-.176	.864
	Age (X_1)	-.132	.166	-.270	-.793	.445
	Wage (X_2)	.154	.137	.420	1.120	.286
	Work Environment (X_3)	-.045	.128	-.095	-.352	.732
	Working Hours (X_4)	-.048	.189	-.107	-.255	.804
	Work Experiences (X_5)	.166	.149	.352	1.114	.289

a. Dependent Variable: RES2

Based on Table 7, the significance values for all independent variables are above the standard significance threshold of 0.05, indicating the absence of heteroscedasticity issues.

3.4. Hypothesis Testing

Hypothesis testing is a procedure aimed at determining whether to accept or reject a hypothesis regarding the parameters of the observed population.

3.4.2. Coefficient of Determination (R^2)

The coefficient of determination (R^2) measures the extent to which independent variables explain variations in the dependent variable. Table 8 presents the regression model summary.

Table 8. Regresion Model Summary[b]

Model Summary[b]					
Model	R	R *Square*	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.738[a]	.545	.338	.708	1.421

a. Predictors: (Constant), PengalamanKerja_X5, LingkunganKerja_X3, Upah_X2, Usia_X1, JamKerja_X4

b. Dependent Variable: Produktivitas_Y

Based on Table 4.10, the R^2 value is 0.545, meaning that the independent variables (age, wages, work environment, working hours, and work experience) collectively explain 54.5% of the variance in productivity. The remaining 45.5% is influenced by other external factors not examined in this study.

3.4.3. Coefficient of Determination (R^2)

The coefficient of determination (R^2) measures the extent to which independent variables explain variations in the dependent variable. Table 9. presents the regression model summary.

Table 9. R^2 Summary

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.738[a]	.545	.338	.708	1.421

a. Predictors: (Constant), Work Experiences (X_5), Work Environment (X_3), Wage (X_2), Age (X_1), Working Hours (X_4)

b. Dependent Variable: Productibity Y

Based on Table 9, the R^2 value is 0.545, meaning that the independent variables (age, wages, work environment, working hours, and work experience) collectively explain 54.5% of the variance in productivity. The remaining 45.5% is influenced by other external factors not examined in this study.

3.4.4. F-Test

The F-test, also known as the simultaneous test or ANOVA test, examines the collective effect of independent variables on the dependent variable. According to (Nurfadilah, Aidi, Notodiputro, & Susetyo, 2024) the F-test determines whether the independent variables have a significant simultaneous impact on the dependent variable. Table 10 presents the F-test results (P-value < 0.10) using SPSS 16.

Table 10. F-Test Results

ANOVA[b]						
Model		*Sum of Squares*	df	*Mean Square*	F	Sig.
	Regression	6.603	5	1.321	2.634	.084[a]
1	Residual	5.515	11	.501		
	Total	12.118	16			

a. Predictors: (Constant), Work Experiences (X_5), Work Environment (X_3), Wage (X_2), Age (X_1), Working Hours (X_4)

b. *Dependent Variable*: Produktivitas_Y

Based on Table 10, the calculated F-value of 2.634 is lower than the F-table value of 4.70, indicating that the independent variables do not have a significant simultaneous effect on the dependent variable. Therefore, it can be concluded that age (X1), wages (X2), work environment (X3), working hours (X4), and work experience (X5) do not collectively influence productivity (Y)

3.4.5. F-Test

The partial T-test is conducted to determine whether each independent variable in the regression model has an individual effect on the dependent variable while considering the presence of other variables in the model. Table 11 presents the T-test results using SPSS 16.

Table 11. T-Test Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1.033	3.160		-.327	.750		
	Age (X_1)	.389	.290	.358	1.342	.207	.581	1.720
	Wage (X_2)	-.160	.240	-.195	-.665	.520	.480	2.083
	Work Environment (X_3)	.385	.224	.366	1.721	.113	.914	1.094
	Working Hours (X_4)	.573	.330	.573	1.736	.110	.379	2.637
	Work Experiences (X_5)	-.103	.261	-.098	-.397	.699	.675	1.482

a. Dependent Variable: Productivity_Y

Based on Table 11, the analysis examines the influence of independent variables on the dependent variable by comparing the t-values with the critical t-table value of 1.753. The t-value for the Age (X1) variable is 1.342, which is lower than 1.753, indicating no significant effect. Similarly, the Wages (X2) variable has a t-value of -0.665, the Work Environment (X3) variable has a t-value of 1.721, the Working Hours (X4) variable has a t-value of 1.736, and the Work Experience (X5) variable has a t-value of -0.397, all of which are also below the threshold of 1.753. As a result, none of the independent variables exhibit a statistically significant effect on productivity (Y).

CONCLUSION

This study aimed to analyse the impact of various factors, including age, wages, work environment, working hours, and work experience, on employee productivity. The results of the multicollinearity test confirmed that all independent variables were free from multicollinearity issues, as indicated by Variance Inflation Factor (VIF) values below 10. Additionally, the heteroscedasticity test showed no significant heteroscedasticity problems, ensuring the validity of the regression model.

The coefficient of determination (R^2) analysis revealed that the independent variables collectively explained 54.5% of the variation in productivity, while the remaining 45.5% was influenced by other unexamined factors. However, the F-test results indicated that the independent variables did not have a simultaneous significant impact on productivity, as the computed F-value (2.634) was lower than the critical F-table value (4.70). Similarly, the T-test results demonstrated that none of the independent variables had a statistically significant effect on productivity, as their t-values were below the threshold of 1.753.

In conclusion, the findings suggest that age, wages, work environment, working hours, and work experience do not significantly influence productivity in this study. This implies that other factors, such as motivation, job satisfaction, or organizational culture, may play a more critical role in determining productivity. Future research should explore these aspects to provide a more comprehensive understanding of the determinants of employee performance.

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