

THE IMPACT OF THE WORK ENVIRONMENT ON THE PRODUCTIVITY OF MECHANICAL EMPLOYEES AT PT. THIESS CONTRACTORS INDONESIA

Rivalda Laila Fitrie Etriza¹⁾, Denia Maulani²⁾

^{1,2)}Management Study Program, Universitas Terbuka, Indonesia

Corresponding author: trizalaa@gmail.com

Abstract

The purpose of this study is to determine the influence of the environment on the work productivity of mechanical employees in PT. Thiess Contractors Indonesia, Balikpapan because employee work productivity is one of the things that determine the success of the company in achieving the goals that have been set. This study examines the relationship between the productivity of mechanical staff at PT. Thiess Contractors Indonesia and their work environment using a quantitative technique and a correlational design. All employees of the company were the subject of the study, with a randomly selected sample of 50 employees. Data were collected through a questionnaire that measured two main variables: work environment and work productivity. The results showed that the company's work environment was considered good by respondents, with an average value of 3.76. Work productivity was also fairly good, with an average of 3.77. A conducive work environment has been shown to have a significant effect on employee work productivity, positively by 22%. Overall, the work environment supports productivity, but moral support and motivation From management need to be improved for more optimal results.

Keywords: Work Environment, Work Productivity, Performance, PT. Thiess, Contractors, Significant effect.

Introduction

Employee work productivity is one of the things that determine the success of a company in achieving its goals. In the industrial sector, especially companies engaged in the contractor sector such as PT. Thiess Contractors Indonesia, employee work productivity is greatly influenced by various factors. The main factor in worker productivity is the work environment. According to Rahmawati, et al. (2020), a good work environment, including facilities, relationships between coworkers, and a supportive work atmosphere, can boost employee performance and motivation. However, a less supportive work environment can dampen work enthusiasm, reduce efficiency, and potentially increase employee absenteeism or even turnover (Kartini, 2020).

According to Aqsa (2018) in Astuti (2020), it refers to various physical, social, and psychological conditions in the workplace that play a role in influencing employee well-being and performance. In addition, the work environment also includes the non-physical aspects, such as interactions between coworkers, the culture adopted by the organization, and support provided by management. A healthy and conducive work environment can increase employee motivation, job satisfaction, and creativity, which contributes to increased productivity. Conversely, a poor work environment, such as a disharmonious atmosphere or inadequate facilities, can cause stress, anxiety, or fatigue which has a negative impact on individual productivity and performance (Nugroho, 2021).

According to Saleh and Hardi (2018), work environment factors that are often considered include physical conditions (lighting, temperature, cleanliness), workplace ergonomics, occupational safety and health (K3) aspects, employee relations, and company policies related to welfare and internal communication. In the context of a company engaged in the contracting sector such as PT. Thiess Contractors Indonesia, the work environment often includes external factors such as weather conditions, remote project locations, and high levels of risk, especially for field workers, such as mechanics who have to work with heavy equipment and in challenging conditions.

PT. Thiess Contractors Indonesia, as a company engaged in the contractor sector, has a unique work environment, with a lot of field work and quite high physical demands. One example is the mechanical employees, who are responsible for the maintenance and repair of equipment at the project site, are faced with various working conditions, ranging from extreme weather to challenging work environments. Conditions like this require special attention from the company in creating a conducive environment,

which not only meets the safety and comfort aspects, but can also motivate employees to work more productively (Simamora, 2004 in Saleh and Hardi, 2018). Understanding how work environment factors play a significant role in increasing the work productivity of mechanical workers in this company is crucial (Winata, 2022).

The work environment includes everything around employees that can influence them in carrying out the tasks that have been given (Segoro and Wiwik, 2021). Some important elements that can be of concern are the physical condition of the workplace, social relationships between employees, and management policies that support employee welfare (Panjaitan, 2017). Understanding these factors more deeply allows companies to create more effective interventions, which will ultimately help improve overall company performance (Pramono, 2020 in Fau and Progresif, 2023).

Overall, PT. Thiess Contractors Indonesia has the potential to develop the work productivity of its mechanical employees by making improvements to the work environment, both physically, socially, and psychologically. Therefore, it is important to know the relationship between the work environment and employee productivity in the company. This is crucial to create a more effective strategy in improving performance and optimal results in every project worked on.

Based on the title and introduction above, this research is expected to find out:

1. How do employees assess the Work Environment at PT. Thiess Contractors Indonesia
2. How do employees assess Work Productivity at PT. Thiess Contractors Indonesia
3. Does the Work Environment affect employee Work Productivity and can provide new perceptions for the management of PT. Thiess Contractors Indonesia in formulating impressive policies and Strategies to produce a better work environment.

Methods

This study uses a quantitative approach with a correlational research design. The quantitative approach was chosen because the study aims to measure and analyze the relationship and influence between the work environment and work productivity of mechanical employees at PT. Thiess Contractors Indonesia. The population of this study includes all mechanical employees working at PT. Thiess Contractors Indonesia, which is located in Balikpapan. Based on company data, the total number of mechanical employees in the population is 50 people.

The research sample was taken using a simple random sampling technique, to ensure that each individual in the population has an equal chance of being selected. Based on research criteria, the research sample comprised 50 mechanical employees from the total population. The main instrument used in this study was a structured questionnaire designed to collect data related to two main variables: work environment and work productivity. This study focuses on mechanical employees working in PT. Thiess Contractors Indonesia located in Balikpapan. This study is intended to provide a deeper and more specific understanding that is relevant to the company and cannot be generalized to other organizations or sectors

Results and Discussions

Employee work productivity is a measure of work efficiency that reflects how much output is produced by employees in a certain time. In the context of a company, work productivity is not only measured by the number of tasks completed, but also seen from the quality of work results, skill levels, and how quickly a task can be completed without reducing quality standards. High work productivity is usually indicated by the achievement of planned targets or goals, through efficient use of resources. Productivity also plays an important role in long-term competitiveness in a company (Fadli and Mukhibatul, 2021).

Some factors that influence work productivity include motivation, skills, training, and work environment. A good work environment, both physically and psychologically, can provide comfort and encouragement for employees to work more productively. Conversely, stress due to poor environmental conditions, such as poor interpersonal relationships, excessive work pressure, or inadequate facilities, can reduce work motivation and have an impact on decreasing productivity levels. In addition, job satisfaction factors and welfare levels also play an important role in increasing employee work productivity (Kartini, 2020).

PT. Thiess Contractors Indonesia is a contracting company engaged in providing construction and maintenance services for various industrial projects, such as infrastructure development projects, oil and gas, and energy. The company has various work units involved in project management, with field workers, such as mechanics, playing an important role in ensuring the smooth operation of equipment at the project site. PT. Thiess Contractors Indonesia has been operating in various regions in Indonesia by placing primary attention on service quality, work safety, and customer satisfaction.

Research Questionnaire

The questionnaire used consists of three main parts. The first part contains statements about the work environment, such as facilities, work atmosphere, employee relations, and management support. The second part includes statements about work productivity, such as work efficiency, quality of work results, and task completion time. The third part is under the influence of the work environment on employee work productivity. Each part of the questionnaire is measured using a Likert scale, from 1 to 5; 1 indicates "strongly disagree" and 5 indicates "strongly agree." In addition, the following descriptive categories are also used.

Table 1 Descriptive Variable Categories

Value	Categories
1.00 – 1.80	Strongly Disagree (E)
1.81 – 2.60	Disagree (D)
2.61 – 3.40	Sufficient (C)
3.41 – 4.20	Agree (B)
4.21 – 5.00	Strongly Agree (A)

Source: Data Processing Result, 2024

1. Work Environment at PT. Thiess Contractors Indonesia, Balikpapan

The following is an assessment questionnaire to measure the work environment atmosphere with a research instrument in the form of 5 statements.

Table 2 Work Environment Assessment Questionnaire at PT. Thiess Contractors Indonesia

Question	Score					Total	Value	Criteria
	1	2	3	4	5			
The existing work facilities support me in completing my tasks well	0	1	20	11	18	196	3.92	B
I feel that the relationship with my co-workers is harmonious and mutually supportive	3	2	15	12	18	190	3.8	B
The company provides adequate PPE to support work safety	3	2	22	10	13	178	3.56	B
The available workspace is comfortable and suits my work needs	0	2	25	11	12	183	3.66	B
Company work policies are implemented consistently and effectively	2	3	15	10	20	193	3.86	B
Total Average							3.76	B

Source: Data Processing Result, 2024

2. Work Productivity at PT. Thiess Contractors Indonesia, Balikpapan

The following is an assessment questionnaire to measure employee work productivity with a research instrument in the form of 5 statements.

Table 3 Work Productivity Assessment Questionnaire at PT. Thiess Contractors Indonesia

Question	Score					Total	Value	Criteria
	1	2	3	4	5			
I actively contribute to achieving team or department goals	1	3	21	7	18	188	3.76	B
I am able to utilize work resources (tools, materials, and time) effectively	4	1	16	5	24	194	3.88	B
I feel highly motivated to continue improving my work results	1	2	18	10	19	194	3.88	B
I have a good level of consistency in completing work every day	3	1	24	7	15	180	3.6	B
The results of my work can meet the quality standards set by the company	1	4	19	10	16	186	3.72	B
Total Average							3.77	B

Source: Data Processing Result, 2024

3. The Influence of the Work Environment on Employee Work Productivity at PT. Thiess Contractors Indonesia

a. Prerequisite Test

1) Normality Test

**Table 1 Normality Test Results
One-Sample Kolmogorov-Smirnov Test**

			Unstandardized Residual
N			50
Normal Parameters ^{a,b}	Mean		.0000000
	Std. Deviation		2.53813365
Most Extreme Differences	Absolute		.095
	Positive		.075
	Negative		-.095
Test Statistic			.095
Asymp. Sig. (2-tailed) ^c			.200 ^d
Monte Carlo Sig. (2-tailed) ^e	Sig.		.304
	99% Confidence Interval	Lower Bound	.292
		Upper Bound	.315
a. Test distribution is Normal.			
b. Calculated from data.			
c. Lilliefors Significance Correction.			
d. This is a lower bound of the true significance.			
e. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 2000000.			

Based on the table above, the Asymp. Sig. (2-tailed) value is 0.200 > 0.05, which means that the research data is normally distributed.

2) Multicollinearity Test

Table 2. Multicollinearity Test Results

Collinearity Statistics	
Tolerance	VIF
1.000	1.000

Based on the table above, it is known that the Tol value is 1 > 0.1 and the VIF value is 1 < 10, which means that there are no symptoms of multicollinearity in this research model.

3) Heteroscedasticity Test

Table 3. Heteroscedasticity Test Results

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	4.121	1.455		2.833	.007
	Work Environment	-.118	.076	-.218	-1.547	.128

Based on the table above, the sig value is 0.128 > 0.05, which means that there is no heteroscedasticity symptom in this research model.

Because all classical assumption tests meet the prerequisites in this study, it will be continued with a hypothesis test using simple linear regression.

b. Simple Linear Regression Test

Table 4. Simple Linear Regression Test

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	10.568	2.277		4.641	.000		
	Work Environment	.440	.120	.469	3.680	.001	1.000	1.000
a. Dependent Variable: Work Productivity								

Based on the table above, here is the regression model in this study:

$$Y = 10.568 + 0.440X$$

a. Constant (10.568)

- The value of 10.568 is the level of work produced when the work environment is at zero (or is considered to have no influence).
- In this context, this value represents minimum work productivity without any influence from the work environment.

b. Coefficient (0.4400)

- The value of 0.4400 indicates that every 1 unit increase in the quality of the work environment will increase worker productivity by 0.440 units, assuming other factors remain constant.

Because the regression coefficient value is positive (+), it can be said that the Work Environment has a positive effect on Work Productivity. So, the regression equation is $Y = 10.568 + 0.440X$

c. t-test

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	10.568	2.277		4.641	.000		
	Work Environment	.440	.120	.469	3.680	.001	1.000	1.000
a. Dependent Variable: Work Productivity								

d. Determination Coefficient Test

Table 6. Determination Coefficient Test

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.469 ^a	.220	.204	2.564
a. Predictors: (Constant), Work Environment				
b. Dependent Variable: Work Productivity				

Based on the table above, the R Square value is 0.220, which means that 22% of employee work productivity variables at PT. Thiess Contractors Indonesia, Balikpapan are influenced by the work environment. Meanwhile, the other 78% are influenced by other variables not examined in this study.

Discussions

The questionnaire results showed that respondents generally felt that the available work facilities supported the completion of tasks well (3.92 - B). The relationship between co-workers was considered harmonious with a score of 3.8 (B). Respondents also gave high appreciation to the provision of adequate Personal Protective Equipment (PPE) for worker safety (3.56 - B). The workspace was considered

comfortable enough and according to needs (4.17 - B), while company policies received an assessment (3.86 - B) for the consistency and effectiveness of their implementation.

Overall, the average value of 3.76 with category B indicates that the company has good quality facilities and work policies. Improvements in the aspects of employee relations and workspace comfort can be made to achieve more optimal results.

Respondents felt quite active in contributing to achieving team goals with a score of 3.76 (B). They considered themselves capable of utilizing resources effectively (3.88 - B) and had high motivation to improve work results (3.88 - B). Consistency in completing work received high appreciation with a score of 3.6 (B). The quality standards of work results were also felt to be met by a score of 3.72 (B). With an average score of 3.77 (B), these results indicate that individual performance is quite good, but increasing motivation and effective use of resources can be a focus of development for more optimal results.

Based on the results of the simple linear test regression, the regression coefficient value is positive (+) so that the regression equation is $Y = 10.568 + 0.440X$, which can be interpreted that the Work Environment (X) has a positive effect on Work Productivity (Y). Proven by the work environment at 0.440, which means that if employee productivity increases by 1%, Knowledge Management increases by $0.440 \times 100 = 44\%$. And based on the results of the t-test, a significant value of 0.001 was obtained, which is smaller than 0.05. This indicates that the work environment has a significant effect on the work environment but is weak, with an R square value of 0.220. This indicates that the overall work environment variable has an effect of 22% on work productivity. While the remaining 78% is influenced by other factors not examined in this study.

Overall, the questionnaire results show that the company has provided facilities, supported individual performance, and created a fairly good working environment for its employees. Thus, this has an impact on employee work productivity which is also high. However, there are several areas that can be improved to achieve more optimal performance, specially:

- 1) Improve the comfort of the workspace to support further productivity.
- 2) Optimize the use of work resources through better training or management.
- 3) Strengthen moral support and motivation from management to improve employee morale.

By focusing on these areas, companies can improve overall employee performance to create an ideal work environment.

Conclusion

The following is the conclusion of the research results that have been conducted in PT. Thiess Contractors Indonesia, Balikpapan.

1. Work Environment

Work facilities support task completion with a score of 3.92 (B), harmonious relationships between coworkers with a score of 3.8 (B), adequate provision of Personal Protective Equipment (PPE) with a score of 3.56 (B), comfortable workspace with a score of 3.66 (B), and company policies are implemented consistently and effectively with the highest score of 3.86 (B). The average value obtained for the work environment assessment is 3.76 which is included in the good category. The focus of improvement in this section is the relationship between employees and the comfort of the workspace.

2. Employee Work Productivity

Employees feel quite active in contributing with a score of 3.76 (B), the effectiveness of work resource utilization is assessed at 3.88 (B), motivation to improve work results is scored at 3.88 (B), consistency in completing work is scored at 3.6 (B), and work results meet quality standards with a score of 3.72 (B). The average value obtained for the work environment assessment is 3.77 which is included in the good category. The focus of development for work productivity is increasing motivation and the effectiveness of resource utilization.

3. The Influence of Work Environment on Work Productivity

Based on the results of Simple Linear Regression Analysis, it can be concluded that the Work Environment (X) has a positive effect on Work Productivity (Y) with the regression equation being $Y = 10.568 + 0.440X$, as evidenced by the Work Environment (X) being at 0.440 which means employee productivity has increased by 1% so that Knowledge Management has increased by $0.440 \times 100 = 44\%$. The work environment affects work productivity by 22%, while the remaining 78% is influenced by other factors not examined in this study. Based on the results of the t-test, a significant value of 0.001 was obtained, which is smaller than 0.05, indicating that the work environment has a significant effect on the work environment but is weak.

With this research, it can be concluded that the majority of respondents have a good working environment. They also showed a positive attitude towards the provision of Personal Protective Equipment for work safety. Therefore, it can be said that the working environment at PT. Thiess Contractors Indonesia is considered healthy and conducive to work, with a fairly high level of employee satisfaction. However, in the results of the research test above, it is also said that the work environment significantly affects work productivity. Thus, efforts to improve the environment, optimize work resources, and improve the moral and motivational environment of employees by management can produce better work productivity.

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