

The Effect of Physical Work Environment, Non-Physical Work Environment, and Communication on Work Productivity

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ABSTRACT

This study aims to examine the influence of physical work environment, non-physical work environment, and communication on the work productivity of technicians at PT Telkom Akses, Mataram City. Employing a quantitative approach, data were collected through a survey conducted among all 30 technician employees at the company. Primary and secondary data were gathered using questionnaires, documentation, and supporting tools such as flash drives and cameras. The findings reveal that both the physical and non-physical work environments have a positive and significant effect on employee productivity. In contrast, communication shows a negative and insignificant impact on productivity. These results highlight the importance of optimizing physical and non-physical workplace conditions to enhance performance, while also suggesting a need to re-evaluate communication strategies within the organization. The originality of this study lies in its comprehensive evaluation of environmental and interpersonal factors affecting technician productivity in a telecommunications infrastructure company, providing a valuable reference for future research and practical organizational improvements.

Keywords : *Physical Work Environment; Non-Physical Work Environment; Communication; Work Productivity*

1. INTRODUCTION

Human Resources (HR) are crucial in achieving a company's goals [1]. Companies rely heavily on employees who are capable of performing management functions such as organizing, directing, developing, planning, and problem-solving [2]. This can have an impact on the company itself, and in the future, it is hoped that the resources they have will be able to participate in building, developing, and maintaining these HR for smooth operations within the company. Good HR will be able to increase employee productivity [3].

Work productivity is the ability of personnel or employees to produce something in their work, which can be seen from the comparison between work results and input [4]. Work productivity will increase if influenced by the work environment, both physical and non-physical work environments. This statement is in line with the findings of previous research, which shows a strong and positive relationship between the work environment and work productivity [4], meaning that a good and comfortable work environment can increase employee productivity. Conversely, less supportive work environment conditions, both physically and non-physically, can cause a decrease in work productivity. In addition to the physical and non-physical work environment, communication also plays a role in influencing the level of work productivity. This is in line with the results of previous research, which shows a strong and positive relationship between the work environment and communication with employee productivity [4]. Communication itself is a way for someone to convey desires, facts, or feelings to one or more people in the form of information, with the aim that the message can be understood by the recipient. A physical work environment, a non-physical work environment and communication are needed in every company, including PT Telkom Akses.

PT Telkom Akses is a subsidiary of a state-owned enterprise (BUMN) engaged in network technology, which includes cable TV network services, Telkom internet, IndiHome, and telephone network installation. Currently, there is a growing phenomenon both in the community and on social media regarding the relationship between Telkom Akses technicians and customers. This issue has been highlighted because technicians' work productivity is considered less than satisfactory, caused by frequent disruptions to Telkom's internet network. This condition has even become the subject of jokes on social media, as shown in Figure 1 below.

Figure 1. Public response



Figure 1. above is an example of several customer complaints about technicians who are considered less responsive in handling disruptions that occur to IndiHome customers, which indicates that customer satisfaction with technician productivity is quite low. Based on the results of my interview with Technician Rifo Telkom Access, there is information that technicians' work productivity can be disrupted due to physical work environment factors in the form of incomplete work tools and facilities because they are lost or borrowed by other technicians. Several customer complaints about technicians who are considered less responsive in handling IndiHome service disruptions. These complaints reflect the low level of customer satisfaction with technician productivity. Based on the results of the author's interview with one of the Telkom Access technicians, Rifo, it is known that technician work productivity can be affected by physical work environment factors, such as limited work tools and facilities.

In addition to the phenomena that occurred, this study also identified a research gap. The physical work environment has a significant influence on the smooth operation of a company, thus impacting productivity [5]. The non-physical work environment is oriented towards working relationships between colleagues and superiors. This contrasts with research conducted by Parashakti (2021), which stated that the work environment has no effect on work productivity [6]. Based on the phenomena that occurred and the research gaps found, further research is needed regarding the influence of the Physical Work Environment, Non-Physical Work Environment, and Communication on the Work Productivity of Rifo Technicians.

2. LITERATURE REVIEW

2.1. Physical Work Environment

Several experts have defined the non-physical work environment, including one stating that it encompasses all conditions related to relationships between coworkers and between superiors and subordinates [6]. The work environment is a condition in which employees in a company are influenced by the physical and non-physical conditions of their workplace, both directly and indirectly. Therefore, a good work environment can be considered if employees can work optimally, calmly, and with high productivity [7]. Indicators of the physical work environment encompass several important aspects, namely the workplace building, the availability of adequate work equipment, supporting facilities, and the availability of transportation to support work activities [8]. A conducive and comfortable work environment will encourage employees to enjoy each task assigned, thereby increasing work productivity. These results align with research conducted by Hartawan (2019), which stated that the physical work environment has a positive and significant impact on employee productivity [9].

2.2. Non-Physical Work Environment

The definition of a non-physical work environment has been put forward by several experts, one of which is Sedarmayanti (2001), who stated that a non-physical work environment encompasses all conditions related to relationships between coworkers and between superiors and subordinates [10]. The non-physical work

environment is also known as the psychological work environment, which refers to the non-physical conditions surrounding the workplace. Thus, the non-physical work environment is an aspect of the work environment that cannot be directly seen but can be felt emotionally or psychologically by the individual [11]. Indicators that can be used to measure the non-physical work environment include relationships between coworkers at the same level, relationships between superiors and employees, and the level of cooperation between employees [12]. The non-physical work environment influences employee productivity both partially and simultaneously [13].

2.3. Communication

Effective communication is an effective means of increasing employee job satisfaction. Through communication, employees can seek direction or guidance from superiors regarding task performance and build collaboration with coworkers. Communication itself is the process of conveying meaning or understanding to others through symbols, signs, or specific language, so that the message is clearly understood by the recipient [14]. Several indicators of effective communication include understanding, enjoyment, influence on attitudes, improved interpersonal relationships, and attitude formation sikap [15]. Increased employee productivity is influenced by effective communication implemented and created by the company itself, ensuring that employees who receive new orders or tasks can complete them effectively and correctly [16].

2.4. Work Productivity

Work Productivity is an activity that can be measured with a value or number with the aim that someone can achieve a goal within a specified time. Productivity itself can be measured through the number of products produced, time and the number of human resources [17]. Work productivity is the ability of personnel or employees to produce something in their work, which can be known from the comparison between work results and input [18]. Indicators that can influence work productivity include: quantity of work, quality of work, and timeliness [19].

3. METHODOLOGY

This research uses a quantitative approach and was conducted at PT Telkom Akses Kota Mataram. The data collection method used was a survey method, with data collection techniques including observation, documentation, and questionnaire distribution [20]. The population and respondents in this study were all 30 technical employees of PT Telkom Akses Kota Mataram. The data sources used consisted of primary data, obtained directly from respondents, and secondary data, obtained through other supporting documents. Data processing was carried out using SPSS software, which included stages of validity and reliability testing, followed by classical assumption testing, and ending with hypothesis testing [21].

4. RESULT

4.1. Validity Test

The validity test aims to measure the validity of the questionnaire. In this study, the validity test was conducted using SPSS by comparing the calculated r and table r values ($df = n-2$, at a significance level of 5% or 0.05). With 30 respondents, the table r value was 0.361. A statement is considered valid if the calculated $r >$ table r , and invalid if the value is not. The validity test results are shown in Table 1 below.

Table 1. Validity Test

Variables	Statement Items	r count	r table	Information
Physical Work Environment (X1)	X1.1	0,659	0,361	Valid
	X2.2	0,665	0,361	Valid
	X3.3	0,634	0,361	Valid
	X4.4	0,606	0,361	Valid
	X5.5	0,685	0,361	Valid
	X6.6	0,638	0,361	Valid
	X7.7	0,659	0,361	Valid
	X8.8	0,601	0,361	Valid
Non-Physical Work Environment (X2)	X2.1	0,652	0,361	Valid
	X2.2	0,731	0,361	Valid
	X2.3	0,655	0,361	Valid
	X2.4	0,687	0,361	Valid
	X2.5	0,556	0,361	Valid
	X2.6	0,675	0,361	Valid
Communication (X3)	X3.1	0,669	0,361	Valid
	X3.2	0,802	0,361	Valid
	X3.3	0,852	0,361	Valid
	X3.4	0,839	0,361	Valid
	X3.5	0,835	0,361	Valid

Work Productivity (Y)	X3.6	0,687	0,361	Valid
	Y.1	0,730	0,361	Valid
	Y.2	0,533	0,361	Valid
	Y.3	0,730	0,361	Valid
	Y.4	0,695	0,361	Valid

Based on Table 1, all statement instrument items showed valid results. This is indicated by the calculated r value for each indicator, which was greater than the table r of 0.361. Thus, all instruments for the tested variables were declared valid

4.2. Reliability Test

Reliability testing is used to determine the extent to which an instrument can measure consistently. An instrument is considered reliable if the Cronbach's Alpha value is greater than the r table. In this study, the r table value was 0.60 [20]. Reliability testing was conducted using the SPSS application. The results of the reliability test are shown in Table 2.

Table 2. Reliability Test

No	Variables	Cronbach's Alpha Value	Standar Cronbach's Alpha	Information
1	Physical Work Environment (X1)	0,792	0.60	Reliabel
2	Non-Physical Work Environment (X2)	0,737	0.60	Reliabel
3	Communication (X3)	0,873	0.60	Reliabel
4	Work Productivity (Y1)	0,604	0.60	Reliabel

Based on Table 2, the alpha coefficient (Cronbach's Alpha) values for the physical work environment, non-physical work environment, communication, and work productivity variables were all above 0.60. Thus, all questionnaires for the variables in this study were declared reliable

4.3. Normality Test

The normality test in this study was conducted using the non-parametric Kolmogorov-Smirnov statistical test (K-S test). The basis for decision-making is that if the significance value is >0.05 , the residual data is considered normally distributed.

Table 3. Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		30
Normal Parameters ^{a,b}	Mean	.0E-7
	Std. Deviation	1.61414746
Most Extreme Differences	Absolute	.101
	Positive	.061
	Negative	-.101
Kolmogorov-Smirnov Z		.553
Asymp. Sig. (2-tailed)		.919
a. Test distribution is Normal.		
b. Calculated from data.		

Based on table 3, the normality test shows that the asymp sig (2-tailed) value shows a value of $0.919 > 0.05$. From the data results above, it can be concluded that the data is normally distributed.

4.4. T-test

The t-test (or partial t-test) is a method in regression analysis that is used to test the influence of each independent variable (X) on the dependent variable (Y) partially, that is, one by one.

Table 4. T-test

Model	Coefficients ^a			t	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
1 (Constant)	9.693	1.135		8.539	.000

Total Lingkungan Kerja Fisik	.133	.053	.481	2.495	.019
Total Lingkungan Kerja Non Fisik	.113	.051	.389	2.211	.036
Total Komunikasi	-.009	.050	-.037	-.176	.862

a. Dependent Variable: Total Produktivitas

4.5. The Influence of the Physical Work Environment on Work Productivity

The results of this study indicate a regression coefficient of 0.133 for the physical work environment, a calculated t-value > 2.495, a t-value > 2.055, and a significance value of 0.019, which is less than 0.05. This indicates that the physical work environment has a positive and significant influence on work productivity. This positive and significant influence indicates that a well-maintained physical work environment will also increase the work productivity of technicians at PT Telkom Akses. The physical work environment can impact technicians' work productivity because, to increase work productivity, technicians require adequate equipment, supplies, and office facilities such as safety helmets, fiber optic tool kits, cable splicers, ladders, towing equipment, vehicles, and other equipment. These results align with previous research that found the physical work environment to have a positive and significant influence on employee productivity [9].

4.6. The Influence of the Non-Physical Work Environment on Work Productivity

The results of this study indicate that the regression coefficient for the non-physical work environment (X2) is 0.113, the calculated t-value is greater than the t-value of 2.211, and the significance value is less than 0.05, at 0.036. This indicates that the non-physical work environment has a positive and significant influence on work productivity. This positive and significant influence indicates that a well-established non-physical work environment can increase the work productivity of technicians at PT Telkom Akses. Conversely, a poorly established non-physical work environment can lead to a decline in technician productivity. The non-physical work environment can significantly impact work productivity because factors such as relationships between fellow technicians, relationships between superiors and technicians, and relationships between technicians and customers can have a very positive impact if these relationships are well-established. These results align with previous research, which found that the non-physical work environment significantly influences work productivity [22]

4.7. The Effect of Communication on Work Productivity

The results of this study indicate that the regression coefficient for Communication (X3) is -0.009, the calculated t-value is <t-table value of -0.176> 2.055, and the significance value is greater than 0.05, namely 0.862. This indicates that Communication has a negative and insignificant effect on work productivity. This negative and insignificant effect indicates there is no significant relationship between the two variables. This may occur because differences in variable values cannot be statistically attributed due to the small effect of the influence between the variables. These results contradict previous research that stated that communication influences work productivity [23]. The results of this study indicate the opposite, namely that communication has a negative and insignificant effect on work productivity. This could be due to poor communication impacting work relationships, but effective communication can increase the work productivity of technicians.

5. CONCLUSION

The physical and non-physical work environment has been shown to have a positive and significant influence on work productivity. Conversely, the communication variable shows a negative and insignificant influence on work productivity. This finding contributes to the field of human resource management by providing empirical evidence regarding the influence of the physical, non-physical, and communication work environments on the work productivity of RIFO technicians, a case study at PT Telkom Akses Mataram. Therefore, the results of this study can be a reference for company leaders in establishing policies related to technicians, especially RIFO technicians. For further researchers, these results can also be used as a reference and consideration for relevant research in the future.

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