

Impack of Work Environment

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**IMPACT OF WORK ENVIRONMENT ON
EMPLOYEE PERFORMANCE IN LOCAL
GOVERNMENT OF PADANG CITY**

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Abstract—The Personnel Agency and Human Resource Development of Padang City revealed that in 2017, only 3.3% of local government employees were able to achieve the minimum performance target of 100. This study aims to find out the influence of the work environment towards employee performance. The population in this study was local government employees of Padang City, while the sample was generated by using the Slovin method and Proportioned Stratified Sampling method. The sample size was 384 employees which were classified into class II, III, and IV. The questionnaires contain 35 questions about the physical work environment, non-physical work environment, and employee performance. The responses were processed by using the Structural Equation Model-Partial Least Square (SEM-PLS) method. Based on the alpha value of 0.05, the t-table value was 1.96. The t-statistic value of the physical work environment was 2.3426 and the t-statistic value of the non-physical work environment was 5.9694. Both of these t-statistic values were greater than the t-table value. Therefore, it can be concluded that there was a positive and significant influence of both physical work environment and non-physical work environment toward local government employee performance. The important factors on the physical work environment were cleanliness, air circulation, safety, and noise, while on the non-physical work environment it was the relationships between co-workers.

Keywords—local government employee, performance, work environment, SEM-PLS.

I. INTRODUCTION

Based on Local Government Regulation of Padang City Number 15 Year 2014, local government organisation units (LGOUs) consist of local government employees and a regional representative council. There are 601 employees in total who are grouped into 54 LGOUs in Padang City. These employees are required to make monthly work target reports as part of the

employee performance assessment. The target of total minimum performance value for each employee is 100. From 54 LGOUs, only one LGOU passed the minimum performance target in 2017. By referring to the total number of employees, it means that only 3.3% of total employees have reached the minimum performance target. To deal with this problem, it is necessary to figure out the important factors contributing to employee performance. The purpose of the user is to quickly get toast, and the internal cleaning is often neglected by the user due to complexity. Directly replace old machines and purchase new machines, causing unnecessary waste in environmental protection and money. In terms of cleanliness : (a) There are electrical and hot parts inside the toaster, so users will be afraid of machine damage caused by cleaning. (b) The interior of the toaster is complex, and cleaning the interior is too expensive for the consumer. Dirty inside the machine will have a negative impact on the environment and health.

II. LITERATURE REVIEW

Employee satisfaction is one of the important factors to achieve expected employee performance [1]. While ensuring that the employees have adequate skills to complete their tasks, the organisation has to provide a comfortable work environment so that the employee can work to their best performance. Work environment is everything that exists in the environment around the workers and that can affect him in carrying out the tasks assigned to him [2]. The relationship of employee performance and work environment is shown in Fig. 1. The work environment can be grouped into two types, namely the physical work environment and the non-physical work environment. The physical work environment is all the conditions that are around the workplace that will affect employees both directly and indirectly including lighting, temperature, air circulation, noise, color management, music, security, and others. While the nonphysical work environment is all the conditions that occur and are related to work relationships, both relationships with superiors, with colleagues, or with subordinates [3]. Performance is a work result, in terms of quality and quantity, achieved

by an employee in the ability to carry out his duties in accordance with the responsibilities given to him [4]. Performance indicators include quality of work, quantity of work, timeliness of results, attendance, and ability to cooperate [5].

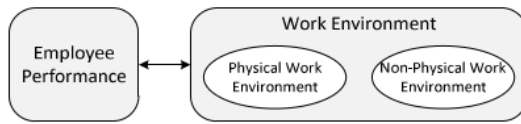


Fig. 1. The relationship of employee performance and work environment

More than 50% of the world's population works in an office environment, while 90% of work time is spent indoors, especially for city residents who are office workers. Therefore, the quality of the work environment also has an important role in determining employee performance, where employee performance will increase by 1% if the quality of the work environment is good [5]. There is a positive and significant influence between the work environment and employee performance, where the work environment has an influence on employee performance by 66%, while the rest is influenced by other factors [6]. The most influential work environment factors on employee performance are harmonious relationships among employees and the relations with their superiors [7]. A work environment that provides comfort to employees will also increase employee work productivity [8].

Based on the explanation above, the hypotheses in this study are defined as; 1) H0: There is no influence of the physical and non-physical work environment towards the employee performance of the LGOU of Padang City, 2) H1: There is influence of physical and non-physical work environments towards the employee performance of the LGOU of Padang City.

III. METHODS

In this study, the data was collected using a questionnaire. The questionnaire consists of two main parts, namely respondent general data and work environment data. The work environment data consists of 35 statements divided into 3 parts, which are physical work environment (X), non-physical work environment (Y), and employee performance (Z). The statement in the questionnaire represents the relationship of physical work environment and non-physical work environment with employee performance. The answers in the questionnaire are represented using a Likert Scale. The indicators used in the questionnaire can be seen in Table 1 and Table 2.

Table 1. Indicators of Work Environment

Variable	Indicator	Sub Indicator	Item
Physical Work Environment	Colour	The color of the workroom wall	X10
		The color of objects in the workspace	X11
	Sanitation	Cleanliness of the workspace	X12
		Availability of cleaning facilities	X13
	Temperature	Temperature in the workspace	X14
	Air Circulation	Air circulation in the workspace	X15
	Lighting	Lighting in the workspace	X16
	Security	Guaranteed safety when working	X17
		Guaranteed safety of goods when working	X18
		Safety guarantee against external threats	X19
Calmness	The quiet atmosphere of the workspace	X20	
Nonphysical Work Environment	Relation Between Fellow Coworkers	Communication with fellow coworkers	Y10
		Proximity / familiarity with fellow coworkers	Y11
		Coordination in each activity with fellow coworkers	Y12
	Relationship with Superior	Communication with superiors	Y13
Attention given by superiors	Y14		

Table 2. Indicators of Employee Performance

Variable	Indicator	Sub Indicator	Item
Performance	Quality of Result	Daily work planning	Z10
		Implementation of work that is in line with work objectives	Z11
		Evaluation of work results	Z12
		Work result	Z13
	Quantity of Result	The level of error from work	Z14
		Anticipate over obstacles or work mistakes	Z15
		Compliance with established work procedures	Z16
		Time of execution and completion of work	Z17
	Timeliness of Result	Use of work time to work	Z18
		Work on assignments according to the service achievement target	Z19
	Attendance	Office attendance during business hours	Z20
		Time and return	Z21
		Engagement and activity in workplace activities	Z22
		Attendance at meetings	Z23
	Ability to Cooperate	Cooperation between parts / fields	Z24
		Completion of work assignments in teams	Z25
		Understanding deals with duties and responsibilities in the work team	Z26
		The ability to work in teams	Z27
	Commitment and ability for each task given	Z28	

The number of population in this study are 9454 employees of the LGOUs of Padang City, which consists of class II (1417 employees), class III (4684 employees), and class IV (3353 employees). The probability sampling method used in this study is simple random sampling. It means that all employees are treated equally and have the same opportunity to be chosen even though they have different characteristics [9]. By using the Slovin formula, the total number of samples are 384 employees. Next, the samples are classified based on their class. By following the proportionate stratified random sampling, the samples of class II, III, and IV, are distributed as 58, 190, and 136 employees respectively.

To analyse a number of variables in this study, the Structural Equation Model– Partial Least Square (SEM-PLS) method was conducted. The Structural Equation Model is a multivariate analysis technique developed to complement the limitations that have been used previously in statistical research [10]. Meanwhile, Partial Least Square (PLS) is an alternative method of processing SEM data. PLS is designed to overcome the limitations of the SEM method because the SEM method requires large data, no missing values, data must have a normal distribution, and is not multicolored [10]. In using the SEM-PLS method there are several steps taken, which are; 1) Designing a structural model (inner model), 2) Designing a measurement model (outer model), 3) Constructing a Path Diagram, and 4) Evaluate the model [11].

IV. RESULTS AND DISCUSSION

Data processing was conducted by using the Partial Least Square (PLS) method on SmartPLS 2 software. This method was used to test the validity, reliability, and research hypothesis. In this study, there were two types of variables, latent variables, and manifest variable. The latent variables were physical work environment, non-physical work environment, and performance. While the manifest variable was an indicator used to measure the latent variables. Besides, there were also two types of models, namely the outer (measurement) model, the inner (structural) model. The relationship model of the work environment and LGOUs’ employee performance can be seen in Fig. 2.

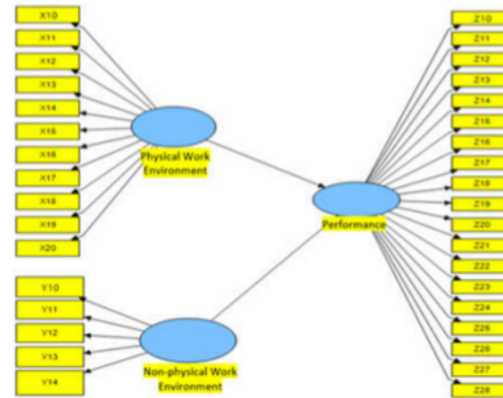


Fig. 2. Work Environment and Performance Relationship Model

A. Outer Model Test

The outer model is the relationship between exogenous latent variables and their indicators, while the inner model is the relationship between endogenous latent variables and their indicators [4]. Convergent validity indicates the relationship (outer loading) between the score of the item or indicator and the construct score. Convergent validity can be seen from the value of outer loading and the value of AVE (Average Variance Extracted). On the outer value, the indicator is considered valid if the outer loading value is > 0.7. If less than 0.7, it will be discarded and re-estimated [11]. The final model between constructs and indicators after convergent validity testing can be seen in Fig. 3.

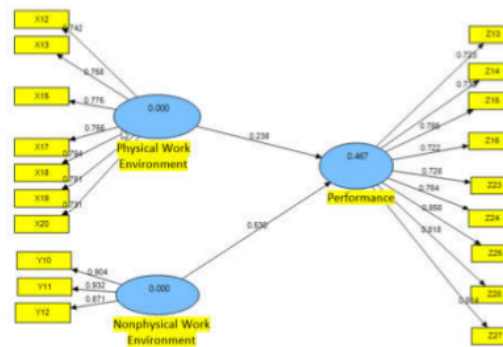


Fig. 3. Loading Factor

Fig. 3 shows all indicators which were valid by having met convergent validity. The indicators that did not meet convergent validity were the color of the wall in the work space (X10), the color of objects in the workspace (X11), temperature (X14), lighting (X16), communication with superiors (Y13), attention by superiors (Y14), presence during working hours (Z20), hours of arrival and return (Z21), involvement and activity (Z22), and commitment and ability for each task given (Z28). The value of convergent validity can also

be seen through the value of Average Variance Extracted (AVE). The convergent validity is met if the AVE value is > 0.5 [11]. As presented in Table 4, all constructs were greater than 0.5. By this, the performance, physical environment, and non-physical environment were considered to meet the convergent validity value. Furthermore, cross loading for all constructs are presented in Table 5.

Table 4. Average Variance Extracted Result

Construct	AVE
Performance	0.5980
Physical Environment	0.5839
Nonphysical Environment	0.8152

Table 5. Cross Loading

Item	Performance	Physical Environment	Nonphysical Environment
X12	0.3499	0.7421	0.3381
X13	0.3551	0.7582	0.6870
X15	0.3980	0.7753	0.4337
X17	0.4331	0.7659	0.4127
X18	0.3317	0.7937	0.3707
X19	0.3995	0.7806	0.3637
X20	0.4380	0.7314	0.4540
Y10	0.5653	0.4240	0.9043
Y11	0.6189	0.4834	0.9324
Y12	0.5809	0.4916	0.8710
Z13	0.7232	0.4076	0.4940
Z14	0.7325	0.3895	0.4358
Z15	0.7865	0.3991	0.5205
Z16	0.7222	0.4383	0.5838
Z23	0.7280	0.4028	0.4124
Z24	0.7638	0.3865	0.4697
Z25	0.8578	0.4629	0.5354
Z26	0.8182	0.3326	0.5258
Z27	0.8144	0.3249	0.5260

Cross loading value shows the ability of a latent variable in predicting the size of the manifest variable [11]. Based on the loading value, it can be seen that each latent variable with its manifest variable had a higher loading value compared to the loading value with the manifest variable belonging to another block latent variable. This shows that the latent variable had been able to predict the size of the manifest variable itself.

A reliability test is used to measure the stability and consistency of an instrument in measuring a construct. If the responses to the questionnaire are stable over time, the questionnaire can be confirmed as reliable [11]. The reliability test can be seen from the results of composite reliability values. The indicators were reliability if the composite reliability value is greater than 0.7. The greater the composite reliability value (close to value of 1), the more reliable the research instrument is. The composite reliability value of all constructs can be seen in Table 6.

Table 6. Composite Reliability

Construct	Composite Reliability
Performance	0.9302
Physical Environment	0.9076
Nonphysical Environment	0.9297

Since all constructs have a value greater than 0.7 and close to the value of 1, it can be concluded that the questionnaire was reliable, meaning that the responses to the questionnaire were stable. The reliability test can also be seen from the results of Cronbach Alpha. If the Cronbach Alpha value is greater than 0.6, the latent variable is considered to have good reliability. As presented in Table 7, it can be seen that all Cronbach alpha values of each construct are greater than 0.6, which means the latent variable has good reliability.

Table 7. Cronbach's Alpha

Construct	Cronbach's Alpha
Performance	0.9153
Physical Environment	0.8813
Nonphysical Environment	0.8863

B. Inner Model (Structural Model) Test

The inner model test is conducted to figure out the relationship between the latent variables of the physical work environment and performance, and the non-physical work environment and performance.

Table 8. Path Coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (O/STERR)
Environment -> Performance	0,2376	0,2545	0,1014	0,1014	2,3426
Environment -> Performance	0,5295	0,5276	0,0887	0,0887	5,9694

The original sample (O) values between the physical work environment and performance and between the nonphysical environment and performance had positive values of 0.2376 and 0.5295, respectively. It means there is a positive relationship between the work environment and employee performance. The better the work environment, the higher the employee performance. By still referring to the path coefficient value, the test for the inner model can also be done by looking at the results of r - squared. The r-square value was 0.4596 which means that construct variables of employee performance can be explained by variables constructing physical work environment and non-physical work environment. While the rest was explained by other variables outside the variables studied.

C. Hypothesis Testing

In this study, the alpha value used was 0.05 so the t-table value used was 1.96. Based on the comparison of the results of t-statistics with t-table, it is known that both physical work environment variables and non-

physical work environments have t-statistics > 1.96 , which are 2.3426 and 5.9694, respectively. The t-statistic value of physical work environment was 2.3426 > 1.96 , which means that there was a positive and significant relationship between the physical work environment and the performance of the LGOU employees in Padang City. Meanwhile, the t-statistic value of non-physical work environment was 5.9694 > 1.96 , which means that there was a positive and significant relationship between the non-physical work environment and the performance of the LGOU employees in Padang City. Therefore, it can be concluded that (H1) for the statement of the influence of the physical work environment on the performance of Padang City LGOU employees was accepted, and H0 was rejected. Likewise, the statement of the relationship between the non-physical work environment and the performance of the employees (H1) was accepted and H0 was rejected.

V. CONCLUSION

Both of the t-statistic values of physical and non-physical work environment were greater than the t-table value. It can be concluded that there was a positive and significant relationship between the work environment and the performance of the local government employees in Padang City. The most influential physical work environment factor on the performance of the LGOU employees in Padang City was cleanliness in the work environment, air circulation, security, and noise in the work environment. The most non-physical environmental factors that influence the performance the LGOU employees in Padang City were communication, closeness, and coordination between workers.

Considering the importance of work environment towards employee performance, some recommendations are proposed to LGOU of Padang City in order to improve the employee performance, which are: a) to improve physical environment, the local government of Padang City is advised to refer to the Minister of Health Regulation of the Republic of Indonesia Number 48 of 2016 concerning on Office Work Safety and Health Standards and Decree of the Minister of Health of the Republic of Indonesia Number 1405 / Menkes / SK / XI / 2002 concerning the Health Requirements Office and Industrial Work Environment about cleaning facilities, and b) to improve the non-physical work environment, the local government of Padang City is advised to conduct several programs such as education and training, achievement work motivation, awards, special events and internal communication media.

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