Employee’s productivity at the operation of Indonesian railway

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ABSTRACT

This research was done to study the effect of the physical work environment and nonphysical workplace environment on employee’s productivity. It was conducted at the Indonesian Railway Corp. operation district 8. The population consists of 250 employees and the sample was determined using Slovin’s equation with the size 71 employees. The data was taken using a questionnaire and analyzed using linear regression to analyze the partial and simultaneous effect of the physical work environment and nonphysical workplace environment towards employee’s productivity. Based on the statistical analysis conducted using SPSS 18, the p-Value of the physical workplace environment and nonphysical workplace environment are 0.013 and 0.036 respectively, both are less than 0.05. Thus, it indicates that the physical workplace environment and nonphysical workplace environment significantly and partially affect employee’s productivity, while the F-count is 14.831 and its p-Value is 0.000 (<0.05) indicating that physical workplace environment and nonphysical workplace environment simultaneously affected employee’s productivity. The regression coefficient (R²) was 0.504 or 50.4%. Therefore, it also shows that the physical workplace environment and nonphysical workplace environment simultaneously affected employee’s productivity about 50.4%, and about 49.6% might be affected by other variables.

1. INTRODUCTION

The increasing number of human beings affects the importance of various facilities to supply their necessary. One of the important things is the availability of transportation, which can be useful for supporting all of economic activities in Indonesia. Due to the importance of transportation for economic activity, the
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company, which focuses on transportation service, must assure its quality. One of the convenience transportation in Indonesia, which has big number of passengers, is local train. It is organized by a state-owned company, namely Indonesian Railwayscorp or PT Kereta Api. This company has nine operation districts including operation district 1, 2, 4, 5, 6, 7, 8, 9, which was centered at Jakarta, Bandung, Cirebon, Semarang, Purwokerto, Yogyakarta, Madiun, Surabaya, Jember, respectively. For each district coordinates several sub districts.

The implementation of quality management system at service based industry must improve its performance. The company must require the quality for its sustainability. In the other hands, the company’s productivity can be an importance issue for company’s sustainability. Regarding the quality improvement, workplace environment has critical effects on job performance.

Workplace environment is a workplace station affecting the workplace outcome, both quantity and quality (Render & Heizer, 2001). According to Sedarmayanti and Pd (2001), workplace environment is divided to the physical environment and non physical environment, physical environment was divided to the environment, which directly connected to the employee including chair, table, door, air conditioner, paper, computer, etc, and intermediary connected employee, such as air circulation, lighting, noise, terrible smell, color, and mechanical vibration. While, non physical workplace environment described as the communication, connection, and collaboration between one employee and another in a workplace place. According to Alex Nitisemito (2000) and Santoso (2001) non physical environment in a workplace place must be intensified by a human resources manager to establish a sense of family, intensify the good communication and self controlling for supporting the company’s goal. It is important to have a workplace considering the non physical environment factors.

Operation district 8 placed at Surabaya city, the capital city of province East Java coordinates several sub district including Surabaya, Sidoarjo, Malang, Mojokerto and Lamongan. The central office is placed at the Gubeng Train Station, Surabaya, it coordinates one of the great train station in Indonesia, namely the Gubeng Train Station. It is the fourth greatest train station in Indonesia and the greatest train station in the East Java. This achievement might be affected by job performance of their employees. Therefore, this study is intended to study the effect of workplace environment on the employee’s productivity in the operation district 8 of Indonesian RailwayCorp. This research is also expected to provide the benefit information for designing performance strategy at all of the operation districts throughout.

HYPOTHESIS

H1: Employee’s productivity is affected by physical workplace environment
H2: Employee’s productivity is affected by non physical workplace environment

2. RESEARCH METHOD

Research Approach

This is a quantitative approach allowing several steps, including pre-survey to the company to determine the population and sampling, then collect the required data including the general information of the Indonesian Railway corp. at operation district 8, information about the employee characteristics (demography). The data were collected by using questionnaire as the instrument to study the effect of workplace environment on employee’s productivity (questionnaire is not shown). The independent variables in this research are physical workplace environment (X1) and non physical workplace environment (X2). The physical workplace environment concerns the office utensils and the office layout, while non physical workplace environment such as noise, and room temperature. The dependent variable is the employee’s productivity (Y), described as job quantity, job quality, and punctuality.

Population and sampling

Population consists of 250 employees taken from Indonesian Railways corp. at the operation district 8. They were calculated using Slovin’s equation.

\[ n = \frac{N}{N(e^2) + 1} \]

Description

\[ n \] : Sample (people)
\[ N \] : Population (people)
\[ e \] : allowance (1%, 5%, 10%)

According to the equation above, there were 71 employees for choosen for this research.

Statistical analysis

The questionnaire was evaluated based on its consistency of the measured results over time
if the phenomenon, which is being measured
is not changed. The validity is a measure that
indicates that the tested variable in this research
is desirable. Those indicators were tested using
validity and reliability test. Normality test
was conducted to test whether the regression
model, the independent variables or residuals
have a normal distribution and can be used to
consider that the sample taken from a normally
distributed population. Multicollinearity
test was also conducted to test whether the
regression model used was found a correlation
between the independent variables. And, the
next is Heteroscedasticity test, aimed to test
whether the regression model of the residual
variance occurs inequality an observation to
other observations.

Hypothesis test was conducted to prove the
effect of the physical workplace environment
\( (X_1) \), non physical workplace environment \( (X_2) \)
to variable employee’s productivity \( (Y) \), both
simultaneously and partially. Simultaneous
test was done by calculating the value of \( F \), if
the \( F_{\text{count}} \) has p-value less than 0.05, the results
can be claimed that physical and non physical
workplace environment affect employee’s
productivity. Regarding the partial effect of
independent variable on dependent variable,
the study conducted it by calculating the t-value
for each independent variable. All of statistical
analysis in this research was done using SPSS
18.00.

3. DATA ANALYSIS AND DISCUSSION

As presented in Table 1, it can be seen that physical workplace environment significantly
affects employee’s productivity indicated by the p-Value of 0.013 (<0.05). It also has a positive
effect on employee’s productivity indicated with regression coefficient \( (\beta) \) was 0.466, and
therefore, \( H_1 \) was accepted. According to Altman and Lett (1970), the characteristics of
the office environment can have a significant effect on the workers’ behavior, perceptions,
and productivity while Dole and Schroeder (2001) assumed that employees who are more
satisfied with the physical environment are more likely to produce better work outcomes.
Other researchers (Akinyele, 2010) and Massoudi & Hamdi (2017) also found that
employees ‘productivity was affected by their work environment directly both physical and
non physical ones.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized Coefficients</th>
<th>p.value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical workplace environment</td>
<td>0.466</td>
<td>0.013*</td>
</tr>
<tr>
<td>Non-physical workplace environment</td>
<td>0.151</td>
<td>0.036*</td>
</tr>
</tbody>
</table>

\( * \) significant at p<0.05

\( R^2 \) : 0.504

\( F_{\text{hitung}} : 14.831 \ (p : 0.000) \)

Source: Processed data

Vischer (1989) argued that a good physical workplace design is very important to help
workers perform their tasks more effectively. The planned design of workplace will help
the employees to conduct communication, supervising, and work monitoring. Overall,
a good design will make the employee feels convenience during their tight works.

There are several aspects that could be
considered to design a representative workplace
design, including equipment should be placed
and arranged systematically. Reference files
must be made available easily. Lighting must be
sufficiently conducted, and air circulation must
be adequated (Matharuddin, 2003). According
to neurobehavioral test conducted by Lan &
Lian, (2009), workers in the different indoor
environment with different temperature have
different performance and neurobehavioral
function including visual perception, working
memory, reasoning, executive function. It
suggests a study of employee’s productivity
can be cone bu using the neurobehavioral test
coupled with questionnaire.

Based on Table 1, it can be seen that non-
physical workplace environment significantly
affects employee’s productivity indicated by the p-Value that is 0.036 (<0.05). It also has a positive effect on job readiness indicated with regression coefficient \( (\beta) \) that is 0.151. Therefore, \( H_2 \) is accepted. This result is in
line with a study done by Pangumpia (2013)
that organizational communication affect the
employee’s productivity.

Overall, physical workplace environment
and non-physical workplace environment
simultaneously affect employee’s productivity.
It can be supported by the the result of F-value test, in which the \( F_{\text{count}} \) and the p-value
are 14.831 and 0.000 (<0.05) respectively.
The R-square is 0.504 (50.4%). Therefore, it can be concluded that physical workplace environment and non-physical workplace environment simultaneously affect employee’s productivity with the degree of 50.4%, and 49.6% might be affected by other variables.

4. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS
As discussed in the previous section, this study provides the essence and reasoning of doing this research. It is also logically based on the evidence concerning implication, limitations, and suggestions.

First of all, it is an evidence that partially the physical environment and non physical environment both have an effect on the employees’ productivity in a company. Simultaneously these two variables also have effect on the employee’s productivity. They can induce the employees to work better.

The limitation of this study concerns the object of the study and variables. This study was conducted in District 8 of the railway station. Therefore suggestion can be asserted for further study. The researchers can do the same way but in different districts to provide more generalisation. Besides that other factors can also be included.

It can be implied that when the employees are provided with a good physical and non physical environments, they will increase their productivity in the working place. Therefore, the company of the railway station can pay attention to these two factors.

REFERENCES


