

The Effectiveness of Fingerprint Attendance Implementation Against Employee Discipline of PT. Gapura Angkasa International Airport at Yogyakarta Airport

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Abstract

Technological developments in the era of globalization are increasingly sophisticated, making it easier for all people to access information. One of them is the application of the Automatic Fingerprint Identification System Attendance, which is a tool that really helps employees in attendance. In this research, it is useful to make effective use of fingerprint attendance so that it is easy for a company to control employee attendance. This study uses quantitative methods with the population in this study are all employees of PT. Gapura Angkasa at YIA Airport, while the sample in this study was 30 people which was defined as a research method based on the philosophy of positivism, used to examine certain populations or samples, sampling techniques were generally carried out randomly, data collection using research instrument, data analysis is quantitative or statistical in nature with the aim of testing the established hypothesis. The results of this study based on the t-test in this study resulted in a significant value of 0.000 which is smaller than 0.05 and has a t-count value of 9.254 which is greater than t-table 1.701, which means that the variable x effectiveness of fingerprint attendance affects the variable y of the discipline of PT Gapura Angkasa employees. The magnitude of the effect given from the variable x is 0.754 as evidenced by the value of R square which is 0.754 which is equal to 75.4%. other variables that are not included in this research variable.

Keywords: Effectiveness, Fingerprint, Discipline



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INTRODUCTION

The development of increasingly sophisticated technology is felt in various fields, including in the fields of economics and management which is increasingly bringing good. This is evidenced by the emergence of sophisticated electronic devices in people's lives and makes it easier for employees to access information and process data. With the development of sophisticated information systems, it can facilitate office work so that office work productivity is higher. One of the implementations is the use of the Automatic Fingerprint Identification System Attendance which is a tool to assist employees in attendance. In its application, employees only need to stick a finger that has been programmed in the fingerprint machine, the machine can record the timeliness of attendance and the accuracy of the employee's time of return.

Basically, fingerprint attendance (fingerprint) is a machine with the help of software to fill in the attendance data of community members, groups, and agencies that use it. This electronic device implements a scanning sensor to find out a person's fingerprint for identity verification purposes. Fingerprint sensors like this are used in several electronic equipment such as smartphones, entrance doors, employee attendance devices and various electronic equipment that require a high level of security, and can only be accessed by certain people. Before the fingerprint sensor was found, first data was secured using a password or ID, some

used processing to secure data (Riyadi, 2019). Through the use of this tool, attendance that is recapitulated once a month can make it easier for companies or agencies to find out violations of working hours or delays that have been made by employees, because in electronic attendance it is difficult to manipulate data. The activity of recording employee attendance at the office will greatly affect the efficiency of work in the office, this influence is of course directly related to the morale and work discipline of employees of PT. Gapura Angkasa at Yogyakarta International Airport.

This research is based on previous research entitled "The Effect of Fingerprint Attendance Application Effectiveness at the Regional Financial and Asset Management Agency (BPPKAD) Brebes Regency" but there are only differences in the object under study, where the research is carried out and the problems that occur when conducting On the Job Training (OJT), researchers feel the need to conduct in-depth research on the impact of fingerprint attendance effectiveness and conduct a small research, namely On the Job Training (OJT) by making questionnaires to several people regarding fingerprints. Therefore, this research was conducted through an analysis of the application of fingerprint attendance that was carried out in the time span from July to August 2018, and then related to the increase in attendance as part of the discipline of PT. Gapura Angkasa at Yogyakarta International Airport on the date and time prior to the implementation of the fingerprint attendance. In this study, research was conducted on how much influence the effectiveness of fingerprints on the discipline of employees of PT. Gapura Angkasa at Yogyakarta International Airport to find out whether or not there is and how high the influence of fingerprint effectiveness on employee discipline of PT. Space Gate.

In general, discipline is an attitude of willingness and willingness of a person to obey and obey the norms of the regulations that apply around him (Sutrisno, 2016). Where specifically discipline is the awareness and willingness of a person to obey all company regulations and applicable social norms and is a demand and must be carried out by every employee which arises from his own awareness and willingness to obey all the rules that have been set (Hasibuan, 2012). Where employee discipline or good employees will accelerate the company's goals, while declining discipline will become a barrier and slow down the achievement of company goals.

Effectiveness is how well the job is done, the extent to which people produce the output as expected. This means that if a job can be completed in accordance with the plan, both in time, cost, and quality, it can be said to be effective (Raviato, 2014). In addition, effectiveness is a judgment made with respect to individual, group and organizational achievements. The closer their performance is to the expected "standard" performance, the more effective they are judged to be. Based on this, effectiveness in a job is influenced by various aspects, including: tasks, time, productivity, motivation, job evaluation, supervision, work environment, and equipment and facilities used. In general, the indicators of work discipline to achieve effectiveness in a job are:

1. Obedience to the rules of time seen from the hours of work, hours of work and rest hours on time in accordance with the rules that apply in the company.
2. Comply with company or agency regulations on basic rules on how to dress and behave at work.
3. Adhering to the rules of behavior in the work shown by ways of doing jobs in accordance with the position, duties and responsibilities as well as how to relate to other work units.
4. Obeying other regulations, namely the rules about what can and what cannot be done by employees in the company or agency.

RESEARCH METHODS

Literature review is a reference that is used based on previous research and literature that refers to or relates to the title taken in conducting research. The theoretical basis used in this research are:

1. The research conducted by Windy Oktafiana in 2020 was entitled "Pengaruh Efektivitas Penerapan Absensi Fingerprint Di Badan Pengelolaan Pendapatan Keuangan Dan Aset Daerah (BPPKAD) Kabupaten Brebes". The result of this research is that an organization will run in a healthy manner if it is managed properly by the leader and his subordinates. The application of fingerprint attendance at BPPKAD Brebes Regency can also make it easier for superiors to see the level of attendance discipline of each employee. Because so far in manual attendance, superiors or other employees who see attendance cannot know the level of discipline of other employees, the problem is in manual attendance there is no information on when the employee comes and goes home, the employee can work on another day or leave the absence to another employee, making it difficult for superiors to impose sanctions.
2. Research conducted by Wahyudi in 2020 with the title "Efektifitas Penerapan Fingerprint Pada Dinas Pemberdayaan Masyarakat dan Desa Provinsi Sulawesi Selatan". The results obtained in this study are at the community and village empowerment office in South Sulawesi Province. can be seen based on the implementation of the fingerprint implementation system carried out in the field. Broadly speaking, to observe this is done with four indicators, namely target achievement, adaptability, job satisfaction and responsibility. In the implementation process, the four indicators based on the findings in the field were all done well. Even though there are problems in the field, these are only technical problems that can be handled easily and carefully by the agency. There are two obstacles in supporting the effectiveness of fingerprint implementation in the PMD service of South Sulawesi Province, namely the problem of the wrong fingerprint machine in identifying employee data and the presence of an error machine. These two problems are not a significant obstacle because every time there is such a problem it is always acted upon with a solution that does not have to interfere with the main tasks of the employees. especially with the implementation of a new fingerprint system during the current Covid-19 pandemic at the South Sulawesi Provincial PMD service, namely an attendance system using a smart office using an application on a smartphone. The problem with the machine is technically wrong identification and machine errors no longer occur.
3. The research conducted by Apriyanto and Ade in 2019 was entitled "Studi Kasus Pada Absensi Fingerprint Berbasis SMS Gateway di SMK NU Kaplongan Indramayu". The results of this study are student discipline can be realized through the enforcement of student discipline carried out by the principal, PKS student affairs, homeroom teachers, members of IPNU and IPPNU. Meanwhile, the policy of applying fingerprint attendance system based on SMS gateway has not had positive implications for student discipline.

Based on the literature review above, the researchers are interested in conducting research on the effectiveness of using fingerprint attendance on discipline and work effectiveness at PT. Gapura Angkasa at YIA airport. Hypothesis or a temporary answer to a problem that is still presumption or guesswork, which according to the author is important for further research because it still has to be proven first and then through a research or study. The hypothesis proposed in this study, namely:

1. H1: There is a significant effect on the effectiveness of the application of fingerprint attendance on the discipline of PT. Gapura Angkasa employees at Yogyakarta International Airport.
2. H0: There is no significant effect on the effectiveness of the application of fingerprint attendance on the discipline of PT. Gapura Angkasa employees at Yogyakarta International Airport.

Research based on the philosophy of positivism, is used to examine certain populations or samples, sampling techniques are generally carried out randomly, data collection uses research instruments, data analysis is quantitative or statistical with the aim of testing predetermined hypotheses. The approach used in this research is descriptive statistics that describe the figures from the research in the form of discussion. The definition of descriptive according to Sugiyono (2012) is a method that serves to describe or provide an overview of the object under study through data or samples that have been collected as they are, without analyzing and making generally accepted conclusions.

This study uses a quantitative approach to measure the extent of the research results. This study has two variables, the first variable is the effectiveness of the application of fingerprint attendance (X) and the second is the employee discipline variable (Y) PT. Gapura Angkasa at Yogyakarta International Airport. In this study, there are populations and samples which are an important part of the study that must be determined from the start, where in general the population is the entire research subject while the sample is part of the population or values that are calculated and obtained from that population or are called parameters. The population in this study were all employees of PT. Gapura Angkasa at Yogyakarta International Airport, while the sample used in this study were 30 employees of PT. Gapura Angkasa at Yogyakarta International Airport with the sampling method used in this study using probability sampling.

The data collection technique used in this research is to use a questionnaire in the form of a number of written questions to obtain information from respondents in terms of personal reports or things they know. This questionnaire is an efficient data collection technique if the researcher knows the variables to be measured and knows what the respondents expect. The instrument of this research is a questionnaire compiled based on the indicators of the research variables. These indicators are stated in detail in question items in the form of a questionnaire containing questions that are given to respondents to be given answers or responses using a linkert scale to measure attitudes, opinions, and perceptions of a person or group of people about the scale used in this study. questionnaire. The linkert scale 1-5 with an explanation of the score values is shown in the table as follows:

Table 1. Likert Scale

Pilihan Jawaban	Skor
Sangat Setuju (SS)	5
Setuju (S)	4
Ragu-ragu (RR)	3
Tidak Setuju (TS)	2
Sangat Tidak Setuju (STS)	1

The data analysis technique in this study is the process of arranging the sequence, data, and organizing it into a pattern, category, and unit described above. In this study the data analysis techniques used are:

1. Instrument Test. In the test instrument, the researcher used a questionnaire as a scale to measure the research variables. One of the criteria for a good questionnaire is to mention validity and reliability.

a. Validity test, is the level of constraints and errors of the measuring instrument used. The instrument is said to be valid if it can show the measuring tools used to obtain the data validly. Validity test aims to measure the validity or validity of a questionnaire. A questionnaire is declared valid if the questions or statements in the questionnaire are able to reveal something that will be measured by the questionnaire. The validity test uses the Pearson product moment correlation technique which is formulated as follows (Anwar, 2011):

$$r_{xy} = \frac{N (\sum xy) - (\sum x \sum y)}{\sqrt{[N \sum x^2 - (\sum x)^2] - [N \sum y^2 - (\sum y)^2]}}$$

With :

xy = Correlation coefficient between variable x and variable y
 $\sum xy$ = The number of multiplications between the variables x and y
 $\sum x^2$ = Sum of the squares of x values
 $\sum y^2$ = Sum of the squares of y values
 $(\sum x)^2$ = Sum of x values then squared
 $(\sum y)^2$ = Sum of y values then squared

b. Reliability test, a study requires valid and reliable data, absolute validity and reliability measurements are carried out because if the instrument used is not valid and reliable, it is certain that the research results will not be valid. The reliability test aims to determine the extent to which the measurement results remain consistent, if the measurement is carried out twice or more for the same symptoms using the same measuring instrument. A variable is said to be reliable if it gives a value of 0.60. Testing the reliability of the instrument using the Cronbach alpha formula because this research instrument is in the form of a questionnaire and a graded scale. Cronbach's alpha formula is as follows:

$$r_{11} = (-1)(1 - \sum \sigma t^2 \sigma t^2)$$

With :

r_{11} = Reliability data sought
 n = Number of question items tested
 $\sum \sigma t^2$ = Total score variance per each item
 σt^2 = Total variance

2. Hypothesis testing. Is a method of making decisions based on data analysis, both from experiments (controlled) and observation (uncontrolled). In statistics, an outcome can be said to be statistically significant if the event is almost impossible to happen by chance, according to a predetermined probability limit. Hypothesis testing is sometimes called "data analysis validation." Hypothesis testing decisions are almost always made based on testing the null hypothesis. This is a test to answer questions that assume the null hypothesis is true.

a. Simple linear regression, is a method that can be used in predicting future demand based on past data, or to find out the independent variable (independent) on the related (dependent) variable. In simple linear regression, there are 2 types of variables:

- 1) Independent variables: These are variables that influence or cause changes or occurrences of related variables and are denoted by X (application of fingerprint attendance).
- 2) Related Variables: These are variables that are affected or that are the result due to the existence of independent variables and are denoted by Y (employee discipline). The simple linear regression formula is as follows:

$$Y = a + bx$$

With :

Y = Dependent variable (employee discipline)

X = Independent variable (implementation of employee attendance)

a = Constant

b = Regression coefficient

- b. The t-test is a statistical test used to test the truth or falsity of the hypothesis which states that between two mean samples taken at random from the same population, there is no significant difference. The t-test in this study aims to find out how much influence the independent variables have individually in explaining the dependent variable. If the significance of the calculated t value is 0.05, the independent variable has a partial effect on the dependent variable.
- c. The coefficient of determination test is a measure for the suitability or accuracy between the regression line and the sample data. If the value of the correlation coefficient is known, then to get the coefficient of determination can be obtained by squaring it. The magnitude of the coefficient of determination can be calculated using the following equation:

$$Kd = r^2 \times 100\%$$

With:

Kd = Coefficient of determinant

r^2 = Correlation coefficient Criteria for the analysis of the coefficient of determination. If Kd detects zero (0), then the independent variable on the dependent variable is weak. However, if Kd detects one (1), then the influence of the independent variable on the dependent variable is strong.

RESULTS OF RESEARCH AND DISCUSSION

Research Results

In this study will describe the results of research that has been done, namely with respondents and previous studies regarding the effectiveness of fingerprint attendance at PT. Gapura Angkasa by using instrument tests, namely validity and reliability and hypothesis testing, namely simple linear regression, t-test, and coefficient of determination. Researchers used 30 respondents to examine this research. So the results obtained from the questionnaire to the 30 respondents are:

1. Test Instrument. Based on the questionnaire that has been carried out, several data variables are obtained, namely:
 - a. Validity test

Table 2. Validity Test Results

Item	R Count	R Table	Information
X1	659	0.361	VALID

X2	852	0.361	VALID
X3	663	0.361	VALID
X4	820	0.361	VALID
X5	798	0.361	VALID
X6	770	0.361	VALID
X7	791	0.361	VALID
X8	714	0.361	VALID
X9	670	0.361	VALID

Based on Table 2, it shows that in the questionnaire question items, the variable (x) is declared valid because r count is greater than r table, namely 0.361.

Table 3. Variable Validity Test Results (Y)

Item	R Count	R Table	Information
X11	664	0.361	VALID
X12	751	0.361	VALID
X13	825	0.361	VALID
X14	797	0.361	VALID
X15	829	0.361	VALID
X16	751	0.361	VALID
X17	845	0.361	VALID
X18	816	0.361	VALID
X19	845	0.361	VALID
X20	816	0.361	VALID

Based on Table 3, it can be seen that the items in the variable (y) are declared valid because in all items r the count exceeds r table or > 0.361 .

b. Reliability test

Table 4. Reliability Test Results

Variable	R Alpha	R Critical
Effectiveness (x)	0,922	0,60
Discipline (y)	0,947	0,60

Table 5. Statistical Reliability

Cronbach's Alpha	N of Items
0,963	20

The results of the reliability test above show that the above variables are reliable as indicated by the value of the Cronbach alpha coefficient > 0.06 . The author conducted a test using SPSS V15.

2. Data Description

a. Data by gender. In research that uses questionnaires, information about respondent data based on gender is obtained in the following table. Respondents by type of calamine are presented in Table 6 below:

Table 6. Gender

Gender	Number of Respondents	Percentage
Male	10	40%
Female	20	60%

From the data obtained from the questionnaire, it shows that 20 female calamine and 10 male calamine types are obtained, so that female users dominate with a percentage of 60% while male users are 40%. The number of men is more dominant because the operational officers at PT. Gapura Angkasa Yogyakarta International Airport has many personnel and mostly men. While the female gender dominates the passage, which in fact has fewer officers.

b. Respondent data by age. In research that uses questionnaires, information about respondent data based on age is obtained in the following table. Respondents based on age will be presented in Table 7 below:

Table 7. Age Group

Age	Number of Respondents	Percentage
20	5	25%
21 -23	15	50%
24-26	6	18%
> 27	4	12%

Table 7 it can be concluded that there are 5 respondents aged 20, most of whom are aged 21-23 with a total of 15, while those aged 24-26 with a total of 6 and age >27 with a total of 4 people.

c. Respondent data by latest education. In research that uses questionnaires, information is obtained about respondent data based on the latest education in the following table:

Table 8. Last Education

Last education	Number of Respondents	Percentage
SMA/SMK	25	80%
College	5	20%

Based on table 8 characteristics of respondents according to their latest education from the number of 30 respondents, most of whom had the last education of SMS or Vocational School with a total of 25 people, the rest with the last education of college with a total of 5 people.

3. Hypothesis Test Results. This test was taken from 30 respondents of Gapura employees and hypothesis testing was conducted to determine the effect of the independent variable fingerprint attendance effectiveness on the dependent variable of employee discipline at PT. Gapura Angkasa.

a. Simple linear regression analysis. The analysis technique used in this research is simple linear regression. Simple linear regression analysis was used to measure the effect of one causal factor (dependent) variable, namely the application of fingerprint attendance to the independent variable, namely employee discipline. The following are the results of a simple linear regression test performed using the SPSS V15.0 program. Simple linear regression test between variables (x) and (y).

Table 9. Simple Linear Regression Test Output Results

Variable	Regression Coefficient	Std.Error	Sig.
Constant	6.985	4.251	0.112
Ratings (x)	0.853	0.092	0.000

R	: 0.868		
R Square	: 0.754		
N	: 30		
Dependent Variable	: Employee Discipline		

- b. T-test. The purpose of the t-test is to determine whether or not there is an influence between the X (independent) variable on the Y (dependent) variable. The results of the t test are as follows:

Table 10. T-Test Results

Model	T	Sig.
	B	Std. Error
Effectiveness	1.643	.112
	9.254	.000

In this partial t-test, a significant value of 0.000 is obtained which is smaller than 0.05, which means that the effectiveness of fingerprint application has an effect on employee discipline, and also has a t-value of 9.254 which is greater than t-table of 1.701 and this result strengthens that the variable x has an effect on the y variable.

- c. Test of determination. The determination test (R^2) is used to determine the best level of accuracy in regression analysis, this is indicated by the magnitude of the termination coefficient (R^2) between 0 (zero) to 1 (one). The results of the determination test are as follows:

Table 11. Coefficient of Determination Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.868(a)	.754	.745	2.090

In the results of the coefficient of determination test, it produces R Square with a value of 0.754 or equal to 75.4%, which means that the variable of the effectiveness of the application of fingerprint attendance (X) affects employee discipline (Y) with a value of 75.4% while the remaining 24.6% influenced by other factors not included in the variables in this study.

Discussion

The problem in this study is whether there is an effect of the effectiveness of fingerprint attendance on employee discipline and how much influence is given. In the questions given to respondents, questions about obeying regulations have the highest value because they are the key to the success of a company where regulations are the basis for working optimally and effectively. the value of R count is higher than the R table and the reliability test value of R alpha is greater than the critical R.

The results of the hypothesis test carried out obtained the results that the fingerprint absentee effectiveness variable had a positive effect on the employee discipline variable as evidenced by a simple linear regression test which resulted in an increase of 0.853 and had a constant value of 6.985. With these results it can be stated that the higher the use of fingerprints, the higher the discipline of employees and vice versa if the value of using fingerprints is low, the discipline of PT Gapura Angkasa employees will be low.

Based on the t-test in this study, it resulted in a significant value of 0.000 which is smaller than 0.05 and has a t-count value of 9.254 which is greater than t-table 1.701, which means that the variable x effectiveness of fingerprint attendance affects the variable y of employee discipline at PT Gapura Angkasa. The magnitude of the influence given from the variable x is 0.754 as evidenced by the value of R square which is 0.754 which is equal to 75.4%. other variables that are not included in this research variable.

CONCLUSION

This research is a quantitative study that examines the effect of the independent variable on the effectiveness of fingerprint attendance and the dependent variable on employee discipline. Using a questionnaire to help collect primary data, the instrument was tested beforehand to find out that the questions were valid and reliable in the questionnaire. This research was conducted on a sample of 30 employees of PT. Space Gate.

From the discussion above, it can be concluded that the relationship between the independent variables affects the dependent variable. This is evidenced by the high value of the simple linear regression test, which is 0.853. And in the t-test, the significant value of $t < 0.005$, the results of this study can be concluded that H_0 is rejected. H_a is accepted, so there is an influence between the effectiveness of fingerprint attendance on the discipline of employees of PT. Gapura Angkasa. The magnitude of the contribution of the effectiveness of absenteeism fingerprints reaches 0.754 or 75.4% on employee discipline, while the remaining 24.6% is influenced by factors outside the independent variables in this study. So that it is still not completely influenced by the use of fingerprints but also from outside influences.

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