The Effect of Implementation of an Application-Based Archive System (SIS FORUM) on Employee Work Efficiency and Productivity at PT Bumi Lingga Pertiwi Gresik

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ABSTRACT

This study aims to determine the effect of application-based filing system implementation (SIS FORUM) on employee efficiency and productivity and the variables that affect PT Bumi Lingga Pertiwi Gresik. The method used in this study is a quantitative method using a saturated sample of 45 people. The research instrument is a validity and reliability test using simple linear regression. The design of this study is an explanation of the variables SIS FORUM (X), Efficiency (Y1), and Productivity (Y2). This research’s limitations are limited to PT Bumi Lingga Pertiwi Gresik employees, so not generalizable to other populations. Future researchers are expected to be able to analyze the effect of more detailed variables related to the implementation or operation of the SIS FORUM system at PT Bumi Lingga Pertiwi Gresik to become a reference or recommendation for the efficiency level of employee productivity. The results of this study indicate that (1) SIS FORUM implementation has a positive and significant effect on the work efficiency of employees at PT Bumi Lingga Pertiwi Gresik; (2) SIS FORUM implementation positively and significantly impacts employees’ work productivity at PT Bumi Lingga Pertiwi Gresik. (3) SIS FORUM has an R² (Adjusted R Square) value of 0.200, equivalent to 20%. It means that the influence of SIS FORUM on efficiency is 20%. The remaining 80% is influenced by other factors not examined. (4) SIS FORUM has an R² (Adjusted R Square) value of 0.895, equivalent to 89.5%. It means that the influence of SIS FORUM on productivity is 89.5%. The remaining 10.5% is influenced by other factors not examined.

Keywords: Efficiency, Productivity, SIS FORUM.
INTRODUCTION

In the current era of increasingly advanced technology and information development, it impacts increasing needs for easy finding information effectively, quickly, and precisely. Information technology that is put to good use can provide convenience within the organization's business scope. This advancement in the information technology field can positively impact organizations supported by increasingly sophisticated information systems that can ease and facilitate organizational activities in their respective jobs, such as assisting all activities within the company and helping the decision-making process. Management, increasing effectiveness and efficiency in business processes, and cooperation in work groups will strengthen competitive positions in a rapidly changing market [1]. One of the developments in information technology that is currently developing, especially in the organizational realm, is the development of filing systems. Types of activities based on information technology are increasingly growing, namely products in archives; this is because libraries cannot be separated from an organization [2]. Along with information technology innovations that continue to develop and align with the times, it can increase the desire for progress in using various types of systems and demands for the effectiveness and efficiency of records, and records management is increasingly developing [3].

Since archives have a very important role, libraries should be managed properly so that archives' concepts, foundations, theories, and principles must become a reference for how an archive will be handled properly and efficiently. So because of that, developments in archival activities are very much needed, especially in information technology. The interest in managing archives in information technology is very helpful for retrieving archival information, determining the shelf life, numbering, and searching for the desired data more easily [4]. Archives have a very important contribution to a business and an institution, especially as a supporter of smooth administrative activities and to support the organization's sustainability; therefore, in managing records, it would be nice to use a system and good work procedures. In addition, developing increasingly diverse technology that will continue to experience revolution and continue to innovate towards updating technological systems will positively impact various work sectors [5] [6].

Given that archives have a very important role, archives should be managed properly so that the concepts, foundations, theories, and principles in archives must become a reference for how an archive will be managed properly and efficiently. So because of that, developments in archival activities are very much needed, especially in the realm of information technology. The interest in managing archives in information technology is very helpful for retrieving archival information, determining the shelf life, numbering, and also searching for the desired data more easily [4]. Archives have a very important contribution to a business, as well as to an institution, especially as a supporter of smooth administrative
activities and to support the sustainability of the organization, therefore in managing records, it would be nice to use a system and also good work procedures. In addition, with the development of technology that is increasingly diverse and will continue to experience revolution and continue to innovate towards updating technological systems, this will have a good impact on various work sectors. [5] [6]

The phenomenon that occurs based on the results of observations made by researchers is known at PT Bumi Lingga Pertiwi Gresik previously used a simple system in the form of Ms. Excel where the activities in working on consumer data still have to be inputted individually. This causes unexpected things to happen, such as double input or data being skipped when inputting data, which causes time-saving not to work optimally. That is inversely proportional to the statement expressed, which conveys that an activity can be considered efficient if the balance between the production and labor produced is balanced. Work efficiency in a good agency is needed to carry out every action with the applicable method by applying minimum effort and maximizing results by adjusting company goals. Work efficiency is the best and most balanced comparison between the work done and the results achieved [7]. Therefore work efficiency can be seen as an increase in time savings that shows good results by following effective and efficient work procedures or methods following established procedures.

In addition, at PT Bumi Lingga Pertiwi Gresik in the data input process is still done manually one by one, and each employee has a different storage format that still has to be matched, so the volume of work completion will increase. Also, the results of interviews with company leaders stated that when using Ms.Excel, companies often have to add employee working hours because the work still needs to be finished, accompanied by other work such as meeting consumers, etc. So the higher the volume of work time used by PT. BLP, the more results you get, the quality you get will decrease, or you won't get it.

Apart from efficiency, there is also productivity. It was previously known that before implementing the development of archive digitization, PT Bumi Lingga Pertiwi Gresik still uses Ms.Excel for data input, which is still manual. The storage system is different, so the work is not completed on time, and the employee's level of discipline in completing the work is considered lacking. That was confirmed by an interview with one of the employees who stated that there was often double input which required the employee to make revisions in the process, resulting in the work not being done by predetermined targets. That is inversely proportional to experts stating that productivity is a balanced proportion between the results achieved and the unit of time used as a benchmark for ongoing activities [8]. So the higher the work discipline, the higher the productivity employees produce, the performance of employees at PT Bumi Lingga Pertiwi Gresik can say to have a low level of the field due to the completion volume, which increases the time it takes to complete the work. Besides the lack of discipline, sophistication in technology is also very necessary because it is considered that this company requires
technological renewal in the hope that new technology or a digitalization system will increase PT's work productivity. Lingga Mother Earth. Skills in managing digital and manual-based archives, it is necessary to have an orderly pattern of behavior, which later this skill pattern will form expertise so that the filing system carried out in a company will run smoothly. If an employee has a new system that will have a good impact on the employee himself, it can increase the employee's motivation. And if employees are motivated, it will also benefit the company. Because work productivity can increase if it is balanced with motivation or enthusiasm for a job being done [9].

Based on the description above, the formulation of the problem posed is whether implementing an application-based filing system (SIS FORUM) influences the efficiency and productivity of employees PT Bumi Lingga Pertiwi Gresik? This study aimed to determine the effect of implementing an application-based filing system (SIS FORUM) on PT employees' efficiency and productivity. Bumi Lingga Pertiwi Gresik.

LITERATURE REVIEW

Information System

The information system is a collection of several parts of information technology that are interrelated, which will produce information to obtain the same and balanced line of thought or communication within an organization. [10]. An information system can be a part of an interconnected system within a company that processes an input and produces an output. Information can also be a source of knowledge and a basic need for development in the current era of modernization [11]. So, an information system is an activity of collecting, processing, analyzing, and disseminating information to achieve the desired goals [12].

Archive

The archive is a systematic classification process in storing a document so that it is known more quickly when needed. Archives are a tool for recording various activities that can be adapted to the times and based on information technology created and accepted by multiple institutions, both in society and as a nation and state [13]. The purpose of the archive is to ensure the security of the materials of state responsibility regarding the planning, implementation, and management of national life and to make this material available for delivery to government responsibility. The conclusion is that the importance of archives is very broad, both as a tool to support human memory and in organizing state activities and national life. Given the importance of archive management for properly implementing management and development tasks, it is necessary to expand and improve archive management as well as possible to function properly, effectively, and efficiently [14].
Efficiency

Efficiency is the best use of resources to produce maximum output. Efficiency is also a comparison between actual costs and the budget. Efficiency is a benchmark in using a process's resources; an example of efficiency is usually adaptive by using a more flexible budget, not a fixed budget. Efficiency can be used to equalize energy use and results to be more balanced [15][16]. Several indicators measure efficiency: 1) Increased time savings that show good results; 2) Work by following procedures; 3) Compliance, obedience, tidiness, and accuracy of work; 4) Satisfactory volume and quality of work [17].

Productivity

Productivity is an employee action that can be described from the results achieved using balanced resources. Productivity can also be interpreted as the ability of individuals or groups to produce goods and services at a certain time or according to a plan. Productivity can be an effort made to benefit from the resources used by increasing goods and services [18] [19]. Several factors determine the existence of productivity, namely: 1) Employee education; 2) Intellectual abilities; 3) Good relationship between superiors and subordinates [20]. The indicators used to measure employee productivity are 1) Employee motivation; 2) Work discipline; 3) Skills; 4) Work ethic attitude; 4) The sophistication of the technology used [21].

SIS FORUM

Application-based Archival Information System or SIS FORUM is an application system launched by PT Bumi Lingga Pertiwi Gresik is an application in the field of archives that has a function to support the running of archival management and consumer data managerial in electronic form. This application is a development that was carried out previously only using the archive system Ms. Excel which is considered less efficient in its use. The story of an application-based archive system makes it possible to increase performance and productivity and facilitate work and is useful for manifesting competent records management. The SIS FORUM application has several features, such as being able to find out quickly the sales/marketing that has been carried out for the desired period, knowing customer data information, being able to find out quickly the payment system that has been made either in the form of installments or cash payments, besides that it can also find out sales target within the specified timeframe.
Figure 1. Conceptual Framework

Hypothesis

H1: Implementing SIS FORUM positively and significantly impacts employee work efficiency.

Setting the filing system applied to the company influences employees' work efficiency. A well-managed and organized archive will make it easier for employees to find the documents they need quickly and accurately. It is even easier if the filing system is supported by a digitalization system in the form of an application. Implementing an orderly archive system arrangement means compiling, organizing, and collecting archives or documents that have been compiled and can also be eliminated or destroyed in a good way. Management and preparation of libraries is one of the most important parts that must be carried out to achieve an agency's goals to support work efficiency and productivity. With this, employee communication will run well and make coordination and supervision easier. By minimizing the effort to reduce the burden on each use. Therefore actions to realize efficiency must be carried out appropriately but require wise consideration. Thus, managing good records is the first step in improving work efficiency.
H2: Implementing SIS FORUM positively and significantly affects employee productivity.

Digital-based archives will substantially impact employee productivity, meaning that using electronic records will increase employee productivity, but otherwise, it will reduce employee productivity. Libraries must be managed effectively and appropriately to obtain as much information as possible from archives so that they can be found fast when needed. Also, found libraries have been used because they are in good condition. So the information can help managers in planning and decision-making and employees in their work. In addition, time, effort, nerves, and costs are saved. Therefore, the efficiency of office filing must be increased to help increase employee work productivity.

With the implementation of the SIS FORUM application-based filing system, it is hoped that it can increase employee work efficiency and productivity.

RESEARCH METHODS

The type of research used is quantitative research with explanatory research. This type of research has a goal so that causation can be known clearly and to test the hypotheses that have been proposed, as well as to examine and analyze problems broadly and understand symptoms or facts efficiently and truthfully.

Research Design

The research design used in this study is to use a dual paradigm with two dependent variables as follows:

![Figure 2. Research Design](image)

Research Limits

Given the extent of the discussion regarding the filing system, the authors limit the problem to PT Bumi Lingga Pertiwi Gresik and researchers cannot access the SIS FORUM application.

Variable Identification

This study uses 1 independent variable and 2 dependent variables, including: 1) Independent variable: SIS FORUM (X); 2) Dependent variable: Efficiency ($Y_1$) and Productivity ($Y_2$)
Participants and Setting

The sampling technique used is Non-Probability Sampling using a saturated sampling type, namely using all members of the population as a sample of 45 people. The research location was conducted in PT. Bumi Lingga Pertiwi Gresik Jl. Jawa No. 99 GKB.

Measurement

Data collection techniques were carried out by observation, interviews, and distribution questionnaires.

RESULTS

From this table, the value for the constant column is 15.218, while for the SIS FORUM (X) value, it is 0.575. To obtain a simple linear regression equation as follows:

Table 1. Simple Linear Regression Test Results SIS FORUM (X) on Efficiency (Y$_1$)

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>15.218</td>
<td>6.248</td>
<td></td>
</tr>
<tr>
<td>SIS FORUM</td>
<td>.575</td>
<td>.175</td>
<td>.448</td>
</tr>
<tr>
<td>a. Dependent Variable: Efficiency</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Processed Primary Data, 2023

Y$_1$ = $\alpha + \beta x$

Y$_1$= 15.218 + 0.575 X.

It means that the value of $\alpha$ is 15.218, indicating that when SIS FORUM is zero or does not increase, Efficiency (Y$_1$) is still worth 15.218. While the value of $\beta$ is 0.575 (positive), there is a unidirectional effect, which means that if SIS FORUM is increased by one unit, it will improve employee performance by 0.575 units. Furthermore, the value of 0.575 contained in the regression coefficient of the Efficiency variable illustrates that the direction of the relationship between the independent variable X (SIS FORUM) and the dependent variable Y$_1$ (Efficiency) is positive, where an increase in one unit of the
SIS FORUM variable will cause an increase of 0.575. Based on the table, it can be seen that as many as 45 respondents produced a correlation value of 0.448.

From the table, the \( \beta \) (constant) column has a value of 41.526 while the SIS FORUM (X) value is 0.035. To obtain a simple linear regression equation as follows:

**Table 2. Simple Linear Regression Test Results SIS FORUM (X) on Productivity (Y\_2)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>41.526</td>
<td>.065</td>
</tr>
<tr>
<td>SIS FORUM</td>
<td>.035</td>
<td>.002</td>
</tr>
</tbody>
</table>

Source: Processed Primary Data, 2023

\[ Y_2 = \alpha + \beta x \]

\[ Y_2 = 41.526 + 0.035 X. \]

It means that the \( \alpha \) value is 41.526, this value indicates that when SIS FORUM is zero or does not increase, then Productivity (\( Y_2 \)) is still worth 52.761. Meanwhile, the \( \beta \) value is 0.035 (positive), which indicates a unidirectional effect, which means that if SIS FORUM is increased by one unit, it will increase employee performance by 0.035 units. Furthermore, the value of 0.035 contained in the regression coefficient of the Productivity variable illustrates that the direction of the relationship between the independent variable X (SIS FORUM) and the dependent variable \( Y_2 \) (Productivity) is positive, where an increase in one unit of the SIS FORUM variable will cause an increase of 0.035. Based on the table it can be seen that as many as 45 respondents produced a correlation value of 0.946.
Hypothesis test

t-test

Table 3. t-test Results SIS FORUM (X) on Efficiency (Y₁)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>15.218</td>
<td>6.248</td>
<td>2.436</td>
</tr>
<tr>
<td>SIS FORUM</td>
<td>.575</td>
<td>.175</td>
<td>.448</td>
<td>3.282</td>
</tr>
</tbody>
</table>

Source: Processed Primary Data, 2023

Based on the above data analysis, it is known that the $t_{count} = 3.282$ while a significant value of 0.002 means that the value is significant because it is less than 0.05.

Formulation of Hypotheses for Variables X and Y₁

$H_a$: There is a significant positive effect between SIS FORUM on Efficiency

$H_0$: There is no significant positive effect between SIS FORUM on efficiency

Determination of $t_{table}$ for a significant level of 5% (0.05) with the formula

$t = \frac{a:(df = n-k)}{t = \frac{5\% : (df = 45-2)}}$

$t = [0.05 : 43],$

So, the $t_{table}$ value at $n = 45$ and $k = 2$ with a significant level of 5% is $1.68107 / 1.681$. Decision making if the $t_{count}$ is greater than the $t_{table}$ then $H_a$ is accepted and $H_0$ is rejected.

From the results of the calculation, the $t_{count}$ is $3.282 > t_{table}$, which is $1.681$. Then $H_a$ is accepted and $H_0$ is rejected. This shows that there is a significant influence between the SIS FORUM variable (X) on efficiency (Y₁).
Table 4. t- test Results SIS FORUM (X) on Productivity (Y₂)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>41.526</td>
<td>.065</td>
<td>635.099</td>
<td>.000</td>
</tr>
<tr>
<td>SIS FORUM</td>
<td>.035</td>
<td>.002</td>
<td>.946</td>
<td>19.152</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Productivity

Source: Processed Primary Data, 2023

Based on the data analysis above, it is known that t\textsubscript{count} = 19.152 while a significant value of 0.000 means that the value is significant because it is less than 0.05.

Formulation of Hypotheses for Variables X and Y₂

H\textsubscript{a}: There is a significant positive effect between SIS FORUM on productivity

H\textsubscript{0}: There is no significant positive effect between SIS FORUM on productivity

Determination of t\textsubscript{table} for a significant level of 5% (0.05) with the formula

t = a:(df = n-k)

\[ t = [5\% : (df= 45-2)] \]

\[ t = [0.05: 43], \]

So, the t\textsubscript{table} value at n = 45 and k = 2 with a significant level of 5% is 1.68107 / 1.681. Decision making if the t\textsubscript{count} is greater than the t\textsubscript{table} then H\textsubscript{a} is accepted and H\textsubscript{0} is rejected.

From the results of the t\textsubscript{count} calculation of 19.152 < t\textsubscript{table} which is 1.681. Then H\textsubscript{0} is accepted and H\textsubscript{a} is rejected. This shows that there is no significant effect between the SIS FORUM variable (X) on productivity (Y₂).

Coefficient of Determination Test (R\textsuperscript{2})

The basis for making decisions in the coefficient of determination test (R\textsuperscript{2}) is, if the value of the coefficient of determination is 0 (R\textsuperscript{2} = 0), it means that the variation of Y cannot be explained by X at all.
If $R^2 = 1$, it means that the variation of $Y$ as a whole can be explained by $X$. In other words, if $R^2 = 1$ then all observation points are right on the regression line.

**Table 5. Determination Coefficient Test Results**

<table>
<thead>
<tr>
<th>Variable</th>
<th>$R$</th>
<th>$R$ Square</th>
<th>Adjusted $R$ Square</th>
<th>Std. The error in the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIS FORUM $(X) \times$ Efficiency $(Y_1)$</td>
<td>.448*</td>
<td>.200</td>
<td>.182</td>
<td>1.52617</td>
</tr>
<tr>
<td>SIS FORUM $(X) \times$ Productivity $(Y_2)$</td>
<td>.946*</td>
<td>.895</td>
<td>.893</td>
<td>.01597</td>
</tr>
</tbody>
</table>

Source: Processed Primary Data, 2023

Based on the results of the analysis above, it can be seen that the value of $R^2$ (Adjusted $R$ Square) is 0.200, equivalent to 20%. This means that the influence of SIS FORUM on efficiency is 20%. The remaining 80% is influenced by other factors not examined. While the results of the analysis of the value of $R^2$ (Adjusted $R$ Square) is 0.895, equivalent to 89.5%. This means that the influence of SIS FORUM on productivity is 89.5%. The remaining 10.5% is influenced by other factors not examined.

**DISCUSSION**

**The Influence of Application-Based Filing System Implementation (SIS FORUM) on Employee Work Efficiency**

Further, on the efficiency variable, it can be seen that the score for the count calculation is 3.282 $> \text{table}$, namely 1.681, and the sig value is 0.002 $< 0.05$. From the coefficient of determination test, it is known that SIS FORUM has an effect of 20% on the Work Efficiency of PT BLP. That shows that SIS FORUM has a positive impact on efficiency. With the implementation of SIS FORUM, efficiency in employee work is going well. Based on the calculation of the results of hypothesis testing, it shows that the SIS FORUM variable positively influences employee work efficiency. That proves that the proposed hypothesis can be accepted. The results of this study are also in line with several previous studies that
support research, namely research conducted by Sintha & Sri (2016), Valine Mei Maengkom (2015), Istiqomah (2015) [22] [23] [24]. Researchers can conclude that the implementation of digital and electronic-based filing systems has a positive influence on employee work efficiency.

The Influence of Application-Based Filing System Implementation (SIS FORUM) on Employee Productivity

From the results of the calculations that the researcher has carried out, the calculated value of count is 19.152 < table, which is 1.681, and a sig value of 0.000 < 0.05. From the coefficient of determination test, it is known that SIS FORUM has an effect of 89.5% on the Work Productivity of PT BLP. Based on this, it shows that SIS FORUM has a significant positive impact on productivity. With the implementation of SIS FORUM, productivity in employee work is going well. That proves that the proposed hypothesis can be accepted. The results of this study are also in line with several previous studies that support this research, namely research conducted by Sukmaraga & Mulyadin (2021) and Dhefi & Nani (2017) [25][26], which results that the existence of application-based electronic records has a significant influence on employee work productivity.

CONCLUSION

After going through the analysis phase and discussing the influence of implementing the SIS FORUM application-based filing system on the efficiency and productivity of employees at PT BLP Gresik, it can be concluded that: 1) Implementation of the SIS FORUM application-based filing system has a significant effect of 20% on the work efficiency of employees at PT BLP Gresik. The first hypothesis is acceptable, especially on the time-saving indicator, which is going well because of the work done at PT BLP can be resolved quickly according to a predetermined time; 2) Implementing the SIS FORUM application-based filing system affects 89.5% of employees' work productivity at PT BLP Gresik. The second hypothesis is acceptable, especially on the indicator of technological sophistication used, because implementing SIS FORUM can increase work productivity generated by employees.

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