

# Analysis of the Application of the Regional Financial Management Information System in the Special Capital Region of Jakarta

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The purpose of the study is to analyze the use of the Financial Management Information System (Sistem Pengelolaan Keuangan Daerah) (SIPKD) by the Jakarta Provincial Government. This research used four variables recommended for analyzing a computer-based information system, which are the security, response-time, accuracy, and relevance variables. The study took samples from five departments in the Jakarta Provincial Government. The results showed that, for the security variable, the system did not back up the data. The response-time variable revealed that the time taken for input data to be reported was, on average, less than five seconds, which is within recommended limits identified by other research. The accuracy variable showed that the system also had a high level of accuracy because it was free from miscalculations and data-input errors. The relevance variable proved the system was very relevant because it could directly find the data sought.

**Keywords:** Response-time Variable; Jakarta Provincial Government; Relevant Variable; Accuracy Variable; Security Variable; SIPKD.

## 1. INTRODUCTION

The increasing flow of information today means information is required by many parties, and the government, both central and local government, is no exception. The output generated from processed input and accounting records are financial statements, which contain a lot of information related to the financial management of the organization<sup>1</sup>.

One of the regions using the Financial Management Information System (Sistem Pengelolaan Keuangan Daerah) (SIPKD) is the Special Capital Region of Jakarta. For Jakarta, this system was built by the Regional Finance Management Board (Badan Pengelola Keuangan Daerah) (BPKD) of Jakarta in collaboration with the Department of Communication, Informatics, and Public Relations of Jakarta. SIPKD is used by the BPKD and regional work units (Satuan Kerja Perangkat Daerah/SKPD). The latest system upgrade for SIPKD was in 2015 and this version of the system has been used since then.

To assess the implementation of this system in Jakarta, the researchers use four variables recommended by Bodnar and Hopwood<sup>2</sup>. The variables are the security variable, response-time variable, accuracy variable, and relevance variable. The study took samples from the five departments in the Jakarta Provincial Government that had the highest budgets in 2016. The number of samples of the study represents the number of departments in the Jakarta Provincial Government. This study is important as it will facilitate understanding of the application of this system in the Special Capital Region of Jakarta. The purpose of this study is to analyze the implementation of SIPKD in Jakarta, based on the four variables recommended by Bodnar and Hopwood<sup>2</sup>. This study is focused on the specific intended purpose because there are limitations to the scope.

## 2. LITERATURE REVIEW

According to the prior study<sup>3</sup>, systems are related components that are interconnected to achieve goals. A system is like a circular cycle that has no end, so it is hoped that this one unit can reach the stated goal. The system is designed to complete a purpose<sup>4</sup>. Information is data that has been processed to give it meaning, and it can improve the decision-making process. Information has a very important role for the user. Therefore, it is necessary to get the real information, so that the decisions taken by the user will be right and no errors will occur. The entire organization needs information to be able to make the right decisions<sup>3</sup>. The quality of information can determine the quality of the policies made by the recipient of the information, so that the quality of information is very important to the organization's decision makers.

According to Laudon and Laudon<sup>5</sup>, information systems are a set of interconnected components that function to collect, process, store, and distribute information to support the manufacture of satisfaction and supervision within

the organization. A study<sup>2</sup> state that a computer-based information system is a collection of hardware and software designed to transform data into useful information for users. Accurate information can be generated from the use of technology-based information systems.

SIPKD is an application built by the Department of Communication, Informatics, and Public Relations of Jakarta in order to help manage local financial-administration records. This system became a tool to facilitate local governments being accountable to the central government by transferring authority over local finances.

Electronic data processing is data processing done via a computer. Bodnar and Hopwood<sup>2</sup> explain that electronic data processing is utilizing computer technology to perform data processing transactions within an organization. Electronic data processing is the fundamental system-accounting format applied in every organization. Bodnar and Hopwood identify variables that may be used to assess how the system works. These variables are the security variable, response-time variable, accuracy variable, relevance variable, and variation variable.

According to Bodnar and Hopwood<sup>2</sup>, the security variable is the level of data security, the system's ability to anticipate the data access of unauthorized persons, and the system's capability to perform a back-up process to provide contingency in case a disaster event occurs. In an electronic data processing system, security must be considered because the electronic data processing using the Internet can be accessed by anyone, without proper security being in place.

The response-time variable represents how long the user has to wait for the system to complete an operation.

According to Suwartha<sup>6</sup>, accuracy is the ability of an electronic-data-processing system to process data carefully, to ensure it is free from errors and present information accurately. The accuracy variable identifies if reporting information is true and free from material misstatements.

Relevance can be interpreted as how well information relates to the problem solving provided<sup>2</sup>. Information can be said to be irrelevant if it does not impact the problem solving provided. Romney and Steinbart<sup>3</sup> argue that relevant information reduces uncertainty and improves decision-making capabilities to enhance earlier expectations. The results from input data are processed into information that can be used by the user.

According to Larasdiputra and Suryanawa<sup>7</sup>, the level of relevance will determine if the information is used in making a decision by the people who have an interest.

According to Wower and Widhiyani<sup>8</sup>, the variation variables represent the system's ability to create reports that vary, so that the report is useful to the users of information. According to Bodnar and Hopwood<sup>2</sup>, variations in reports relate to the completeness of the information content, not only with respect to the volume but also regarding the information.

### **3. RESEARCH METHOD**

This study used a qualitative method with pragmatism. The qualitative method was chosen in order to determine and describe the quality of this system according to the users who use it. The object of this study is the SKPDs in Jakarta, which is one of the provinces as well as the special area that functions as the capital of the Republic of Indonesia. The sample selection technique used was cluster sampling. The SKPDs were categorized into five groups, based on their commission in the Jakarta Provincial Council (Dewan Perwakilan Rakyat Daerah) (DPRD). After being categorized by commission, two departments were chosen in each commission, bringing the total to ten departments. Of these ten departments, the five departments that had the highest budget in 2016 were chosen to provide representation of the financial statements of Jakarta.

This study used descriptive research in order to provide an overview of SIPKD. Although Bodnar and Hopwood<sup>2</sup> recommend analyzing the application of a computer-based information system based on the five aforementioned variables, this study focused on four variables only: the security variable, response-time variable, accuracy variable, and relevance variable. The variation variable was not included because this system is only able to generate an accountability report expenditure treasurer from the expenditure side, for which the numbers are included in budget realization report. The reports are created to the system's own standards in portable document format (PDF) form, so it cannot vary the forms of a report.

The primary data used in the study was collected from interviews, with the finance department as the unit of analysis. The informants who were assigned to the interviews are the official financial officers. This is because only the finance department can login to the system via an ID and password. The data-collection methods used include interviews, observations, and a literature review. Interviews were conducted with informants who operate the system, such as the SKPD treasurer, the chief financial officer, or operators of the system in the SKPD. The observation aimed to view, record, analyze, and interpret the operation of SIPKD based on facts. The literature was studied by collecting data from textbooks, journals, articles, and other literature, which discuss the application of Bodnar and Hopwood's indicators of the success of a computer-based information system<sup>2</sup>.

Narrative analysis techniques, based on interviews with informants from each department, were used for the data analysis. The first stage of the research was the data reduction. The second stage was the display of data. The third stage was the conclusion. The conclusion is the most important part of the data analysis because the

conclusion is a response to the study problem.

#### **4. RESULTS AND DISCUSSIONS**

##### **Security Variable**

The security variable was measured in terms of whether there is a system password for each employee to provide security for the data stored on the computer to keep it safe from danger or replacement, and the data is kept safe from interception by hackers who try to steal the data through the Internet<sup>8</sup>.

Of the five departments, only three departments had changed the password given to them by BPKD, and the two others had not yet changed password given to them by the BPKD for the reason of secrecy and keeping the password secure. Only the treasurer and certain other people know the password; these are the people who have the task of inputting data into the system.

Security must be provided for data stored on the computer, and it must be kept safe from danger or replacement. The system has not yet had the data backed up. The system works on storing the inputted data when the treasurer or operator clicks the "save" button. When the process of inputting data is suddenly stalled in the middle due to a problem on the computer, the data input may be confirmed but not yet saved, and there is no back-up.

A function is required to keep the data safe from interception by hackers who try to steal the data through the Internet. According to the five departments, the passwords owned by each department have never been hacked. Therefore, the financial data stored in the system has guaranteed safety because only certain people know the password for the system.

##### **Response-Time Variable**

The response-time variable is measured in terms of the speed of performing data input, speed of handling various transactions, speed of the analysis and data processing, speed of the data search required, speed of the presentation of data at any time if necessary, and free time in the organization's operational systems closing<sup>8</sup>.

Inputting data into the system does not need a long time. When supported by the Internet, only one to two seconds are needed to open the data input command. According to research conducted by gomez.com, users of a system expect it to take up to eight seconds to get the result in question<sup>9</sup>. Therefore, the two-second response time for the input of data is still within the limit of tolerance.

In the SIPKD system (2015 version) there is already an integrated production link for handling transactions, so only two to three seconds is needed for handling a transaction. This three seconds is still within the aforementioned eight-second limit of tolerance for the response time for handling various transactions<sup>9</sup>.

The speed of the system when analyzing and processing the data is fairly quick, as it takes only one to two seconds. When the input data to be processed is already true, then the data is immediately processed. This two seconds is still within the aforementioned eight-second limit of tolerance for the response time for doing analysis and processing data<sup>9</sup>.

When searching for the necessary data, the system was able to find the data sought in a fast enough time. The treasurer or operator can open a link and choose the month for they wish to seek data, and the data is found within one to two seconds. These two seconds is still within the aforementioned eight-second limit of tolerance for the response time for searching for the necessary data<sup>9</sup>.

To present the necessary data, the system can directly provide data in PDF form, which can be downloaded and saved onto the computer in less than five seconds; this means that the data can be opened any time after downloading it depending on the needs of the treasurer. These five seconds is still within the aforementioned eight-second limit of tolerance for the response time for presenting the necessary data<sup>9</sup>.

The process for closing the system is very fast: less than four seconds. The treasurer or operator only has to click on the "logout" button to close the system, after which it closes. According to research conducted by gomez.com and akamai.com, the limit of tolerance for the time for a page to load is four seconds<sup>9</sup>. Therefore, the time of four seconds is still within the limit of tolerance for the response time for presenting the necessary data.

##### **Accuracy Variable**

The variable for accuracy is measured in terms of three things, which are accuracy in number calculations, both simple and complex; accuracy in searching for the necessary data; and accuracy of data input<sup>8</sup>.

According to the five departments, the system has a high level of accuracy. When the numbers input exceed the budget owned by the department, the system will not process them. Furthermore, the results confirm that the numbers output are always the same as the numbers input. There has never been a case where the input numbers have a different value to the resulting output of the system.

The function to search for the necessary data is easy to use, by simply opening the link and choosing the month whose transactions you require, and the data is sufficiently accurate.

Regarding the accuracy of inputting the data, the system will give a warning when the amount of funds

requested exceeds the funds available. Notifications appear on the system when the treasurer or operator needs to check the input data before it is processed.

### **Relevance Variable**

The relevance variable is measured in terms of three things, namely the relevance of links to data recorded in different sections, the relevance of the data presentation, and the relevance of data processing and data storage<sup>8</sup>.

For the relevance of links to input data from different sections, the data that is sought can be found directly because the linked data items are already connected with each other. Therefore, the links provided to different sections of recorded data are considered to be very relevant because the results of the data obtained correspond with those sought.

For the relevance of data presentation, the search directly finds the data required by the user choosing the month of the report they want to print, then when the report for the chosen month has been obtained it can be downloaded and saved onto the computer, and printed. Therefore, the data presentation is considered to be very relevant because the search results in the report obtained correspond with the month sought.

For the processing and storage of data, after the data is input and processed in each link, then the desired data can be searched for by typing keywords such as the as number of the contract or the name of a third party, through which the data sought is retrieved directly. Data must be downloaded before it can be printed. After downloading, it will be stored directly on the computer, and can be searched for and viewed anytime. The processing and data storage is considered to be very relevant because a search can be performed on the processed results and stored data storage can be correctly found.

## **5. CONCLUSION**

With respect to the security variable, it can be concluded that this system has a system password that can be changed, as the current treasurer desires that the data stored in the system is kept confidential. But, even so, there are agencies that do not want to change the password of their system, also in regards to the confidentiality of the password that is still in use. The agency does not need to change the password immediately, but it should be changed regularly, at least once a year during the treasurer's tenure in order to avoid data theft by people who are not authorized to use the SIPKD system and to ensure data security. With respect to backing up the data, this system does not take a back-up of the data, so if there are problems with the computer while inputting the data, the data will not have been stored. With respect to data security from hackers, the five agencies have never experienced theft of data through the password because the password is kept confidential.

Regarding the response-time variable, it can be concluded that for the actions of the treasurer inputting the data, handling the transactions, performing analysis and data processing, searching for the necessary data, and presenting of data, it does not take long time: it takes less than five seconds for each command. The closing process is very quick and is an easy system to use. The treasurer or operator simply clicks on a button to log out, then the system shuts down and reviews the first initial.

With respect to the accuracy variable, it can be concluded that the system has a fairly high degree of accuracy. When the numbers that are input exceed the available budget, then the system will not process the data. The output generated also must be the same as the input. Searching for the required data is done by opening the link and selecting the month for which the transactions are needed. The accuracy of the data returned from the search is as required. There is a warning system for the accuracy of the data input, so that the treasurer or operator inputting the data can recheck the results prior to processing.

Concerning the relevance variable, it can be concluded that the input data is relevant because the treasurer/operator can immediately find the data they are looking for because the links are already integrated with one another. Regarding the relevance of the presentation of the data, the five departments can immediately find the data they are looking for by selecting the month for which they want to print a report. For relevance in terms of processing and data storage, the treasurer/operator can search for desired data by typing in keywords, such as the contract number or the name of a third party, so that the data sought can be provided directly. The SIPKD system can be categorized as very relevant because the user can be directed straight to the correct data that they require.

It is suggested that further research could include the other variable identified by Bodnar and Hopwood<sup>2</sup>, which is the variation variable. Future research may compare the SIPKD system used in Jakarta with one that is used by other local governments that are directly managed by the Ministry of Home Affairs of Indonesia. By comparing these two systems, we can look at the different menus used in SIPKD by Ministry of Home Affairs of Indonesia and determine what might be applied to the SIPKD in Jakarta to make the system better.

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