JRSSEM 2023, Vol. 03, No. 06, 1385 – 1408
E-ISSN: 2807 - 6311, P-ISSN: 2807 - 6494

IMPLEMENTATION OF THE SUPERVISION SYSTEM, COMPONENTS OF THE SUPERVISION SYSTEM AND THE FUNCTION OF THE SUPERVISION SYSTEM FOR DIGITAL-BASED SUPERVISION IN THE NORTH TORAJA REGENCY INSPECTORATE

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ABSTRACT: The purpose of the study was to determine and analyze the effect of the Implementation of the Supervisory System, the Components of the Supervision System and the Function of the Supervision System on Digital-Based Supervision in the North Toraja Regency Inspectorate. This type of research is quantitative research because it emphasizes more on the aspect of objectively measuring social phenomena. The object of this research is the North Toraja Inspectorate Office of South Sulawesi Province. The population in this study is all employees of the North Toraja Inspectorate Office of South Sulawesi Province. Based on data obtained from the Personnel Section, the total number of North Toraja Inspectorate Offices is 46 employees. The sampling technique in this study uses the *saturated sampling* technique, where all members of the population are used as research samples, because the population is relatively small only 46 people, so the total sample in this study is 46 people who are used as respondents. The analysis method uses descriptive analysis and multiple linear regression analysis. The results showed that: 1) The implementation of the supervision system has a positive and significant effect on digital-based supervision, the better the implementation of the supervision system, the better the digital-based supervision; 2) The components of the supervision system also have a positive and significant effect on digital-based supervision, the better the components of the supervision system, the better the digital-based supervision; 3) The function of the supervision system has a positive and significant effect on digital-based supervision, the better the function of the supervision system, the better digital-based supervision will be.

Keywords: Implementation of Supervisory System, Components of Supervision System, Function of Digital-Based Supervision and Supervision System.

INTRODUCTION

The use of communication and information technology in government processes (*e-government*) is expected to improve good supervision or *controlling*, so that time efficiency, work effectiveness, transparency and accountability can be realized, in accordance with Presidential Instruction Number 3 of 2003 concerning National Policy and Strategy for *E-Government Development*. This research focuses on digital-based supervision within the scope of work of the North Toraja inspectorate in South Sulawesi province. Supervision in the scope of government is described in the Regulation of the Minister of State Apparatus Empowerment (MENPAN) Number. PER/03.1/M.PAN/3/2007 of 2007 concerning the National Supervision Policy of the Government Internal Supervision Apparatus which explains that to achieve the success of the main supervisory activities need to be supported by supervisory support activities, one of which is the development of an integrated supervisory information system, each Government Internal Supervision Apparatus must compile *a* surveillance database that is continuously updated and developed. Supervision intended in this study is digital-based supervision on *a database*. *Database* or database which is a set of data managed within the scope of the North Toraja inspectorate related to the data management system which includes activity reporting and resource reporting. Based on an initial survey obtained by researchers that since 2018, North Toraja Regency has begun to implement Digital-Based Supervision using Web-Based *Audit Resources Planing* (WARP). The implementation of Digital-Based Supervision is expected to support the performance of the inspectorate in a sustainable manner, in accordance with the mission of the North Toraja Regency Inspectorate, namely "realizing a supervisory information system and the use of reliable information technology". The initial survey conducted by researchers found that the implementation of digital-based supervision within the scope of the North Toraja Regency Inspectorate, which has been running since 2018 until now, continues to be improved, refined, and developed in line with current technological developments. However, on the other hand, the implementation of digital-based supervision that is carried out still seems slow where several obstacles are found, including the lack of full support related to *providers, namely* Internet service providers abbreviated as ISPs are companies or entities that provide Internet connection services and other services that are used as partners, so that supervision is mostly carried out using telephone quota services and quota services Internet only by relying on paid quota. So that this has a significant impact, where there are often delays in the pioneering system and resource

management system within the scope of the North Toraja inspectorate which causes the digital-based supervision function to not run optimally in accordance with the Minister of Home Affairs Regulation Number 1 of 2010 concerning the National Local Government Implementation Supervision Information System (SIWASDANAS) is one form of utilization technology in order to improve the efficiency and effectiveness of the implementation of guidance and supervision of local government administration. Digital-Based Supervision within the North Toraja inspectorate is expected to carry out all inspection activities quickly, effectively, and systematically so that integrated supervision can be carried out starting from planning, conducting examinations to follow-up in digital / electronic form. This study aims to determine and analyze the effect of the Implementation of the Supervisory System, the Components of the Supervisory System, and the Function of the Supervision System on Digital-Based Supervision in the North Toraja Regency Inspectorate.

Supervision

In the scope of government, known as the Government Internal Supervision Apparatus (APIP) which is formally one of the important parts of government that functions as a supervisor besides that it is also related to its duties and functions, APIP can be classified as a professional organization that requires quality assurance of the results of supervisory activities (Sjamsuddin, Kadir and Kasminto, 2007: 7). Regulation of the Minister of State Apparatus Empowerment Number: PER/220/M.PAN/7/2008 concerning Functional Auditors and Credit Figures defines supervision in the context of internal supervision as the entire process of audit activities *(consultancy*), socialization, assistance, on the implementation of the duties and functions of the organization in order to provide adequate assurance (assurance) that activities have been carried out in accordance with established benchmarks effectively and efficiently for the benefit of leaders in realizing *good governance*. Information systems have been widely developed by researchers such as (Bailey & Pearson, 1983), (DeLone & McLean, 1992) and (Seddon, 1997). From some of these studies, it was the DeLone and McLean model that quickly received responses and has been developed by many other researchers, because the model developed a model that is simple but considered quite valid and also because it takes a model that can be a reference to make information technology systems can be applied successfully in organizations (H. M. Jogiyanto, 2008). This model is described as follows:

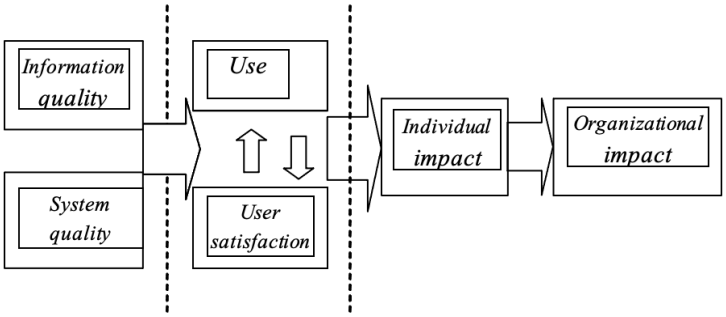

Figure 1. DeLone & McLean Information Systems Success Model

The (DeLone & McLean, 1992) model explained that *system quality and* information quality independently and together affect both *use* and user *satisfaction*. The amount of use can affect user satisfaction positively or negatively. Use *and* user satisfaction *affect* individual impact *and* subsequently affect organizational impact. (DeLone & McLean, 1992) explain that use is the user's use of information systems and according to (Seddon, 1997), use is the effort of human resources in using the system. The concept of use of *the system can be viewed from several angles, including:* actual use *and* percieved *use or* reported use. Real usage is measured by the number of requests for information from the manager or by recording the amount of connection time of the user, or the amount of use of computer functions, the number of client records processed or the actual cost charged for the use of the computer, while the perceived use or use is reported using a list of questions answered by the user manager about the perceived use of the information system (H. Jogiyanto, 2007).

Implementation of Surveillance System

System implementation is an ongoing process, which includes overall system development both feasibility studies, system design and analysis, programming, training, conversion and installation of a system (Lucas, 1997). This is also in line with what was expressed by (Sutabri, 2005) that the implementation / application of the system is an activity of obtaining and integrating physical and conceptual resources that produce a working system. (Scott, 2004) states that system implementation is the process of installing a newly designed system, including all equipment and software purchased. The application of the system relies heavily on technical skills which is usually a structured activity. The implementation of the system, according to (Henry & Lucas, 1993) will have an impact on organizational structure, the work of groups, individuals and the distribution of power. In analyzing the information system, it not only concerns the devices used but also concerns the actions performed, procedures carried out and tasks carried

out as a consequence (Caldelli & Parmigiani, 2004). Similarly, as stated by (Sutabri, 2005) who stated that to see an information system in an organization, it will be shown its physical components, consisting of hardware, software, *databases*, procedures and personnel.

Surveillance System Components

The following are the components of the digital surveillance system according to (Sutabri, 2005), (O'Brien James, 1990), and (Kumorotomo & Margono, 1994):

1. Human Resources, which include 1) *End Users are people who use information systems; 2)* System analysts *are those who design information* systems based on information from end users; 3) *Programmers* are people who prepare computer programs based on the specifications of the *system analyst*: 4) *Operators* are people who operate information systems; 5) Other information system staff.
2. Hardware resources. Hardware includes all physical and material devices used in information processing. Hardware in an information system consists of: 1) Computer systems such as personal computers and *servers*; 2) Computer peripherals in the form of *mice,* keyboards*,* monitors*,* printers *and* flash drives *or* external hard drives*.*
3. Software Resources. Software includes a collection of commands in information processing, including: 1) System software that controls and supports the operation of a computer such as *Windows* or *Linux* operating systems; 2) Application software includes programs that manage the use of computers for specific purposes by end users, such as data processing software, spreadsheets and image processors; 3) Procedures are guidelines or instructions for using computer system operations such as manuals for users, documents, procedures to ensure regular system *back up*.
4. Data. Data are facts that will be made into useful information. *Database* is a collection of data that can be obtained easily and processed by a computer.

Supervisory System Functions

The function of information systems in an organization described by (O'Brien James, 1990), is as follows: 1) An important part of a business to achieve success as accounting, finance, operations management, marketing, and human resource management functions; 2) Important contributors to operational efficiency, employee productivity and service satisfaction to customers; 3) A primary source of information and support necessary for effective decision making by managers; 4) An important element in developing competitive products and services that provide strategic advantages to the organization in the global marketplace; 5) Things that are dynamic, beneficial and provide career opportunities for people; 6) Key components of the

company's current resources, infrastructure and business networking capabilities. Information technology will be able to support the activities of people within the organization. Here are some of the objectives of the Supervision system (Turban and Volonino, 2010, p.52-53) related to activities within the organization, namely assisting in: Operational activities are daily activities in the organization, such as employee activities in carrying out tasks and recording the number of hours worked by employees; and Managerial activities are tactical or decision-making activities. This relates to *middle management* activities such as short-term planning, organizing and controlling. The previous research was conducted by (Panuntun, 2020), examining the Supervision of Government Internal Auditors in the Digital Era. This study aims to examine the problems and challenges faced by internal auditors in supervising the management of Information Technology (IT) in government agencies. The data used were primary data using questionnaires to 56 respondents spread across 36 units of the Indonesian government's internal auditor agency. This study used a combination of quantitative research methods supported by interview results. Research shows that although it is known how important IT capabilities and expertise are in carrying out the duties of government internal auditors, the lack of organizational attention and low motivation of government employees make there are still a small number of auditors who have skills and knowledge in the field of IT Audit.

Research Hypothesis

Hypothesis is a temporary answer to the formulation of a research problem and is based on empirical facts obtained through data collection (P. D. Sugiyono, 2017). Based on the relationship between variables in the framework of the research concept above, the researcher compiles a research hypothesis as follows:

H1: The implementation of the Supervision System has a significant effect on Digital-Based Supervision in the North Toraja District Inspectorate.

H2: The Supervisory System component has a significant effect on Digital-Based Supervision in the North Toraja District Inspectorate.

H3: The Supervisory System Function has a significant effect on Digital-Based Supervision in the North Toraja Regency Inspectorate.

METHOD

This research is quantitative research because it emphasizes more on the aspect of objectively measuring social phenomena. To be able to make measurements, each social phenomenon is described into several problem components, variables, and indicators. Each variable determined is measured by providing different numerical symbols according to the category of information related to the variable which explains the relationship between variables, namely independent

variables (Implementation of the Supervision System, Components of the Supervision System and Functions of the Supervision System) to the dependent variables (Digital-Based Supervision) at the North Toraja Inspectorate Office. The object of this research is the North Toraja Inspectorate Office of South Sulawesi Province.

Populasi

(P. Sugiyono, 2016) "Population is a generalized area consisting of: objects / subjects that have certain qualities and characteristics determined by researchers to be studied and then drawn conclusions". The population in this study is all employees of the North Toraja Inspectorate Office of South Sulawesi Province. Based on data obtained from the Personnel Section, the total number of North Toraja Inspectorate Offices is 46 employees *(data source: North Toraja Inspectorate Office 2023)*.

Sample

(P. Sugiyono, 2016) said that "Sample is part of the number and characteristics possessed by the population". The sampling technique in this study uses the saturated sampling technique, *where all members of the population are used as research samples, because the population is relatively small only 46 people, so the total* sample in this study is 46 people who are used as respondents.

Data Sources

Data sources in this study are sourced from: 1). Primary Data, this data is obtained from field research activities carried out through direct observation and interviews with leaders and staff at the North Toraja Inspectorate Office, as well as other parties who know about the information and data needed in this study; 2). Secondary Data, this data is obtained from literature research in the form of reading references, previous research results, and documents at the North Toraja Inspectorate Office that are relevant to the problems studied in this study.

Analysis Techniques

To analyze the data that has been obtained and test the hypotheses that have been put forward previously, descriptive analysis methods and Multiple Linear Regression Analysis are used which have the following formula:

$$\mathbf{Y = a_o + a_1X_1 + a_2X_2 + a_3X_3 + ei}$$

where:

Y	=	Digital-Based Surveillance (PBD)
X_1	=	Implementation of Surveillance System (ISP)
X_2	=	Components of the Surveillance System (KSP)
X_3	=	Supervisory System Functions (FSP)
a_1-a_3	=	Koefisien regresi X_1 – X_3
ei	=	Error factors

To obtain the regression model estimate, the values β0, β1 – 5 were calculated using the SPSS Version 23

(statistical Package for Social Science) computer program package.In order for each variable to give meaning, measurements are made by weighting through scoring, namely: If very good is given a score of 5, if good is given a score of 4, if it is being scored 3, if low is given a score of 2, and if very low is given a score of 1.

For testing the proposed hypothesis, the following is carried out: 1) To measure the effect of all independent variables simultaneously on the dependent variable, a statistical test is used, namely the Fisher test (test - F) with a degree of meaning *(degree of freedom)* 95% / alpha (α) = 5%; 2) To see the closeness of the relationship between the independent *variable to the dependent* variable explained by the Correlation Coefficient (R) if the value of R > 0.5 means a strong relationship, R = 0.5 means a medium relationship and R < 0.5 means a weak relationship; 3) To estimate the percentage of dependence of the *dependent variable on* the independent variable *and* the intercept constant is described by the Coefficient of Determination (R2) or (R-Square*) and if the intercept effect is issued then R2 becomes R2 corrected (Adj.R-Square*); and 4) To measure the significant effect of each independent variable (X1 – X4) on the dependent variable (Y), a statistical test will be used, namely the student test (t-test).

RESULTS AND DISCUSSION

This research will be explained about the results of the research which is an explanation of the results of data analysis regarding the analysis of the effect of the implementation of the supervisory system, the components of the supervision system, and the function of the supervision system on digital-based supervision in the North Toraja Regency Inspectorate. The presentation of the research results will begin with (1) testing the validity and reliability of the questionnaire, then (2) a description of the characteristics of respondents, (3) a description of each variable, (4) the results of testing the classical assumptions of regression analysis, and finally exposure (5) the results of linear regression analysis to test significance The influence of the implementation of the supervisory system, the components of the supervisory system, and the function of the supervisory system on digital-based supervision, both simultaneously and partially.

Validity Test Results

A validity test is performed to determine the extent to which the statement item can measure each variable under study. Validity measurement uses the concept of *validity criteria*, namely by testing the strength of the relationship between statement items and the measured variable. *Validity criteria* are measured by the intercorrelation method, which uses *corrected* Pearson product moment correlation or *corrected item-total correlation*. If the *corrected item-total correlation* value in the value statement item is greater than 0.30, then the

statement item is declared valid. This number of 0.30 is the lowest limit of a statement item having good validity (Ferketich, 1991); Masrun in Solimun *et al*., 2020:38). A statement item can also be declared valid if *pearson's product moment* value is greater than the table's r or results in a significance value less than *alpha* 5%. In this study, validity and reliability testing was carried out with the help of the *IBM-SPSS program*. The results of the validity test on each statement item on the variables of supervisory system implementation, supervisory system components, supervisory system functions, and digital-based supervision, are presented in the following table:

Table 1. Questionnaire Validity Test Results

Statement Item	*Pearson Correlation* (*r*)		*Corrected Item-Total Correlation* (*rcorrected*)	Information
	r	*Say.*		
X1.1	0,811	0,000	0,591	Valid
X1.2	0,840	0,000	0,604	Valid
X1.3	0,872	0,000	0,709	Valid
X2.1	0,875	0,000	0,717	Valid
X2.2	0,934	0,000	0,845	Valid
X2.3	0,897	0,000	0,770	Valid
X3.1	0,841	0,000	0,644	Valid
X3.2	0,858	0,000	0,658	Valid
X3.3	0,850	0,000	0,664	Valid
Y.1	0,869	0,000	0,597	Valid
Y.2	0,835	0,000	0,676	Valid
Y.3	0,812	0,000	0,616	Valid
Condition	≥ R table	≤ 0,05	≥ 0,30	

Source: Data processed 2023

The table above shows all the statement items in the questionnaire, resulting in a *pearson correlation* value greater than r table 0.291 and a significance value less than α 0.05. The *corrected item-total correlation* value on all statement items has a value range between 0.591 to 0.845, so that all statement items have a corrected value greater than 0.30. Thus, it can be concluded that all statement items have good *validity* and are declared valid in measuring variables of supervisory system implementation, supervisory system components, supervisory system functions, and digital-based supervision.

Reliability Test Results

Reliability testing is used to determine the reliability or consistency of a questionnaire. Reliability testing

using *Cronbach's Alpha*. According to (Hair et al., 2019), reliability measures range from 0 to 1, the generally agreed lower limit for *Cronbach's Alpha* value is above 0.70 (good *reliability), with between 0.60-0.70 considered* acceptable reliability. The results of testing the reliability of the questionnaire using *Cronbach's Alpha values* are presented in Table 2.

Table 2. Reliability Test Results

Variable	∑ item	*Cronbach Alpha*	Information
Implementation of Surveillance System (X1)	3	0,790	Reliable
Surveillance System Components (X2)	3	0,885	Reliable
Surveillance System Function (X3)	3	0,807	Reliable
Digital-Based Surveillance (Y)	3	0,770	Reliable

Source: Data processed 2023

The table above shows that each research variable has a *Cronbach's Alpha* value greater than 0.70, so it can be concluded that the preparation of statement items on the variables of supervisory system implementation, supervisory system components, supervisory system functions, and digital-based supervision is concluded to have *good reliability*) and is declared reliable or trustworthy as a measuring tool that produces reliable answer responses.

Respondent Profile Description

In this subchapter, we will explain the characteristics of respondents. The respondents in this study were employees of the North Toraja Regency Inspectorate Office. The data collection procedure is carried out by distributing questionnaires directly to all employees, assisted by the Personnel Department. Respondent profiles will be described by gender, age, education level, and length of service.

The results of the description of the characteristics of respondents are presented in the Table as follows:

Table 3. Description of Respondent Characteristics

Characteristics of Respondents	Description	Frequency	Percent
Gender	Man	22	47,8
	Woman	24	52,2
Age	25-35 years	5	10,9
	36-45 years	19	41,3
	46-55 years	16	34,8
	>= 56 years	6	13,0
Education	SMA/SMK	1	2,2
	Diploma	2	4,3

	Bachelor	33	71,7
	Pascasarjana	10	21,7
Period of Service	<= 5 years	3	6,5
	6-10 years	4	8,7
	11-15 years	17	37,0
	>= 16 years	22	47,8

Source: North Toraja Regency Inspectorate Office

The table above shows that most of the employees of the North Toraja Regency Inspectorate Office are women as many as 24 people or 52.2 percent, the number is not much different from male employees who are 22 people or 47.8 percent. Most of the employees aged 36-45 years, namely 19 people or 41.3 percent, have a recent level of undergraduate education of 33 people or 71.7 percent, and and have worked in the Inspectorate for more than 16 years, which is 22 people or 47.8 percent.

Description of Research Variables

Descriptive data analysis is to describe the results of the analysis of respondents' answers by describing the assessment of employees of the North Toraja Regency Inspectorate Office on each item of the questionnaire statement. In the analysis of the description of each research variable, it will be explained about the average respondent response to each statement item and overall, on each research variable. The average result of respondents' responses to each statement item and variable can then be categorized using the class interval formula guide as follows (Nazir, 2009: 379):

$$\text{Interval kelas} = \frac{\text{Range}}{\text{Jumlah interval kelas}} = \frac{\text{Skor tertinggi} - \text{Skor terendah}}{\text{Jumlah interval kelas}} = \frac{5-1}{5} = 0{,}80$$

The resulting class interval is 0.80, this value is further used as a guideline to determine categories based on their average intervals, which are as follows.

Table 4. Categories By Class Interval

Interval	Level
1,00 < mean ≤ 1,80	Very Low (SR)
1,80 < mean ≤ 2,60	Low (R)
2,60 < mean ≤ 3,40	Medium (S)
3,40 < mean ≤ 4,20	Good (B)
4,20 < mean ≤ 5,00	Very Good (SB)

Source: Nazir, 2009:379

Description of Supervisory System Implementation Variables

The implementation of the supervision system aims to explain the module manual to all users who will use the system, so that the user can respond to what is displayed in the system and provide input to the system maker to make improvements to make the system even better. Furthermore, the description of the assessment of employees of the North Toraja Regency Inspectorate Office on the variables of supervision system implementation is presented in the table as follows:

Table 5. Descriptive Statistics of Supervisory System Implementation Variables

Item	Information	Frequency					Mean	Category
		SR	R	S	B	SB		
X1.1	The implementation of the supervision system starts from the internal scope of employees carried out by officers instructed by the leadership	-	-	4	20	22	4,39	Excellent
X1.2	The implementation of the supervisory system carried out by external parties outside the organization is an act of neutralization of the leadership	-	-	12	22	12	4,00	Good
X1.3	Implementation of a supervisory system as a process to ensure that organizational goals can be achieved	-	-	4	21	21	4,37	Excellent
	Variable Mean						4,25	Excellent

Source: Data processed 2023

The table above shows the assessment of North Toraja Regency Inspectorate Office employees on the variable implementation of the supervision system, perceived very well, this is shown by the average variable value of 4.25 which is in the range of 4.2-5.0 values (very agree / very good), this shows that the implementation of supervision by North Toraja Regency Inspectorate Office employees has been very good. The perceived supervisory system implementation indicator with the highest approval rate is X1.1 with an average value of 4.39, meaning that the implementation of the employee

internal scope supervision system is very good in accordance with the instructions of the leadership. Furthermore, the perceived supervisory system implementation indicator with the lowest approval rate is X1.2 with an average value of 4.00, which is regarding the neutrality of supervision by external parties.

Description of Supervisory System Component Variables

Supervision as an activity to ensure and guarantee that the task / work has been carried out in accordance with the plan that has been set. Wisdom that has been outlined and commands (rules) given (Siagian, 2003: 112).

The description of the assessment of employees of the North Toraja Regency Inspectorate Office on the variables of the supervisory system components is presented in the Table as follows:

Table 6. Descriptive Statistics of Supervisory System Component Variables

Item	Information	Frequency					Mean	Category
		SR	R	S	B	SB		
X2.1	The supervision system component is a work tool in the method of monitoring activities for employees who are being supervised	-	-	7	21	18	4,24	Excellent
X2.2	The supervisory system component is a powerful tool to improve employee performance	-	-	6	21	19	4,28	Excellent
X2.3	Monitoring system components help employees work effectively and efficiently	-	-	5	18	23	4,39	Excellent
	Variable Mean						4,30	Excellent

Source: Data processed 2023

The table above shows the assessment of employees of the North Toraja Regency Inspectorate Office on the variable components of the supervision system, perceived very well, this is shown by the average value of the variable of 4.30 which is in the range of 4.2-5.0 values (very agree / very good), this shows that the components of the supervision system at the North Toraja Regency Inspectorate Office are in very good condition. The perceived supervisory system component indicator with the highest approval rate is X2.3 with an average value of 4.39, meaning that the supervisory system component

is able to help employees work very effectively and very efficiently. Furthermore, the perceived supervisory system component indicator with the lowest approval rate is X2.1 with an average value of 4.24, namely regarding the condition of work equipment as a component of supervising employee activities.

Description of Supervisory System Function Variables

The description of the assessment of employees of the North Toraja Regency Inspectorate Office on the variables of the supervisory system function is presented in the following table.

Tabel 7. Descriptive Statistical Table of Supervisory System Function Variables

Item	Information	Frequency					Mean	Category
		SR	R	S	B	SB		
X3.1	The function of the supervision system is carried out to avoid irregularities and misappropriations / mistakes made by workers or employees	-	-	3	19	24	4,46	Excellent
X3.2	The function of the supervisory system is carried out to take corrective actions directly to employees in the event of deviations in the determination of organizational work standards	-	-	5	22	19	4,30	Excellent
X3.3	The function of the supervisory system is very effective for performance appraisal, standardization, performance measurement and corrective action	-	-	4	25	17	4,28	Excellent
Variable Mean							4,35	Excellent

Source: Data processed 2023

The table above shows the assessment of employees at the North Toraja Regency Inspectorate Office on the variable function of the supervisory system, perceived very well, this is shown by the average variable value of 4.35 which is in the range of 4.2-5.0 values (very agree / very good), this shows that the supervisory function at the North Toraja Regency Inspectorate Office has

been carried out very well. The perceived supervisory system function indicator with the highest approval rate is X3.1 with an average value of 4.46, meaning that the supervisory system function is able to avoid irregularities and misappropriation by employees. Furthermore, the perceived supervisory system function indicator with the lowest approval rate is X3.3 with an average value of 4.28, namely regarding the effectiveness of the supervisory system function for performance appraisal, standardization, performance measurement, and corrective action.

Description of Digital-Based Supervisory Variables

Description of employee assessment at the North Toraja Regency Inspectorate Office on digital-based supervision variables, on item Y1 Close supervision will make you feel awkward / nervous at work, item Y2 Supervision is a process where leaders want to know the results of the implementation of activities carried out by subordinates or employees and iten Y3 Supervision with the help of technology will be more effective and efficient for employees and leaders , presented in Table as follows:

Table 8. Descriptive Statistical Table of Digital-Based Supervisory Variables

Item	Information	Frequency					Mean	Category
		SR	R	S	B	SB		
Y.1	Close supervision will make you feel awkward / nervous at work	-	3	17	15	11	3,74	Good
Y.2	Supervision is a process where leaders want to know the results of the implementation of activities carried out by subordinates or employees	-	-	5	29	12	4,15	Good
Y.3	Supervision with the help of technology will be more effective and efficient for employees and leaders	-	-	4	22	20	4,35	Excellent
	Variable Mean						4,08	Good

Source: Data processed 2023

The table above shows the assessment of employees at the North Toraja Regency Inspectorate Office on digital-based supervision variables, perceived as good, this is shown by the average variable value of 4.08 which is in the range of 3.4-4.2 (agree / good), this shows that digital-based supervision by

employees of the North Toraja Regency Inspectorate Office is good. The perceived digital-based supervision indicator with the highest approval rate is Y3 with an average value of 4.35, meaning that technology-assisted supervision is very effective and very efficient for employees and leaders.

Furthermore, the perceived digital-based supervision indicator with the lowest approval rate is Y1 with an average value of 3.74, which is about feeling nervous at work due to too strict supervision.

Classical Assumption Testing

Regression analysis is one of the parametric statistical techniques, whose regression parameter estimation results are said to be BLUE (*Best Linear Unbiased Estimator*) if they meet assumptions, known as the classical assumptions of regression analysis. Assumptions in regression analysis include the relationship between independent and dependent variables is linear, *error* or residual is normally distributed, heteroscedasticity does not occur, multicollinearity between independent variables does not occur, and autocorrelation does not occur.

Linearity Test

Linearity is the extent to which changes in the dependent variable are associated with the independent variable (Hair Jr, 2019). The results of the linearity test between the variables of supervisory system implementation, supervisory system components, and supervisory system functions with digital-based supervision are presented in the Table as follows:

Tabel 9. Linearity Test Table

Linearity	*Linearity*	Conclusion
Implementation of surveillance system (X1) with digital-based supervision (Y)	F=20,091 Mr.=0,000	Linier
Surveillance system components (X2) with digital-based supervision (Y)	F=21,684 Mr.=0,000	Linier
Supervisory system function (X3) with digital-based supervision (Y)	F=27,051 Mr.=0,000	Linier

Source: Data processed 2023

The table above shows the linearity of the variable implementation of the surveillance system with digital-based supervision resulting in a significance value smaller than α 5%, so it is concluded that there is a linear relationship between the implementation of the surveillance system and digital-based supervision. Similarly, the linearity between the components of the supervisory system and the function of the supervisory system with digital-based supervision also produces a significance value smaller than α 5%, so it is concluded that there is also a linear relationship between the components of the supervisory system and the function of

the supervisory system with digital-based supervision.

Normality Test

Normality testing is done with the *Normal P-P Plot Graph*, which is by looking at the spread of data (points) on the diagonal axis of the normal graph. The basis for decision making is that if the data spreads around a diagonal line and follows the direction of its diagonal line, then the regression model satisfies the assumption of normality. Conversely, if the data spreads far from the diagonal line and/or does not follow the direction of the diagonal line, then the regression model does not meet the assumption of normality.

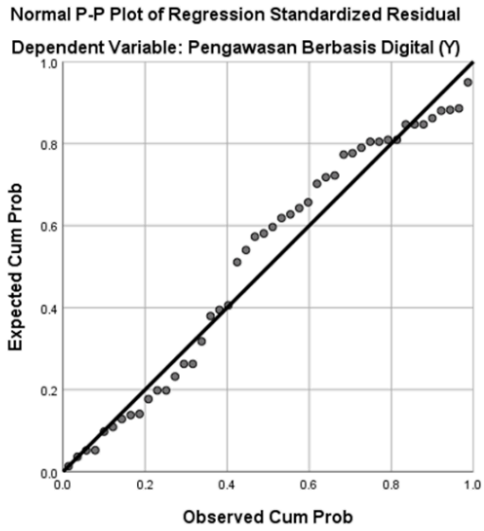

Figure 1. *Normal P-P Plot*

The figure above shows that the data plot is spread around a diagonal straight line and follows the direction of its diagonal line, which shows that the residual regression model is normally distributed, or the normality assumption is met. The normality test results are also corroborated by the *Kolmogorov-Smirnov test results, with decision-making criteria if* the significance value of the Kolmogorov-Smirnov *test is* greater than 0.05 (α=5%), then the residual regression model is normally distributed. The results of normality testing with *the Kolmogorov-Smirnov* test in Appendix 6 produce a significance value of 0.101, this value is greater than α 5%, so it is concluded that the residuals in the regression model are normally distributed or in other words the normality assumption is fulfilled.

Non-Heteroscedasticity Test

Heteroscedasticity indicates the variance of the residual variance from one observation to another. A good regression model is one that does not show any symptoms of

heteroscedasticity. Detection of the presence or absence of heteroscedasticity is carried out by *scatter plot*, if there is a certain pattern such as existing points forming a certain regular pattern (wavy, widening then narrowing), it indicates heteroscedasticity. Conversely, if it is spread randomly (there is no clear pattern) and the points spread above and below the number 0 on the Y axis, heteroscedasticity does not occur.

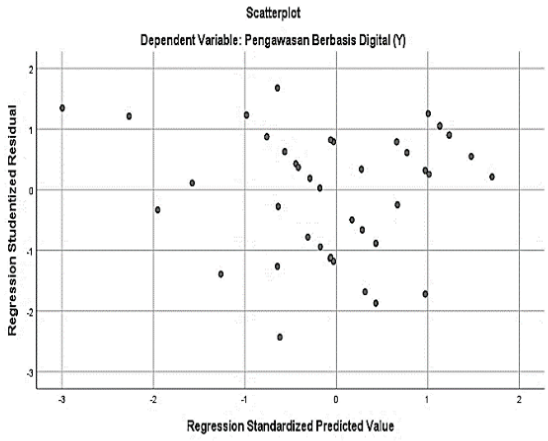

Figure 2. Scatter *Plot*

The scatter plot in the figure above shows that the points are scattered randomly above and below zero and do not form a certain pattern, so that visually the regression model is indicated to be free from the symptoms of heteroscedasticity, and the assumption of non-heteroscedasticity is met. To ensure that there is no *indication* of heteroscedasticity, it can be strengthened by conducting statistical tests with the *Glejser test*. The *Glejser* test is known to provide satisfactory results in detecting heteroscedasticity and is the most sensitive test compared to other tests in detecting heteroscedasticity. In practical terms, *the Glejser* test can be used for large samples and can also be used in small samples strictly as a device in detecting heteroscedasticity (Gujarati, 2012). The *Glejser* test is carried out by *progressing the independent variable* with the absolute value of the residual, if the significance value of the independent variable is more than α 5%, it is concluded that heteroscedasticity does not occur. The results of detection of heteroscedasticity with *the Glejser* test are presented in the Table, as follows:

Table 10. Detection of Heteroscedasticity by *Glacier Test*

Independent Variables	t	Sig.	Heteroscedasticity occurs?
Implementation of Surveillance System (X_1)	-1,093	0,281	No
Surveillance System Components (X_2)	1,433	0,159	No
Supervisory System Functions (X_3)	-1,166	0,250	No

Source: Data processed 2023

The table above shows the results of the *Glejser* test on independent variables consisting of the implementation of the supervisory system, the components of the supervisory system, and the function of the supervisory system, all of which produce significance values greater than α 5%, so that it is concluded that the regression model is free from the symptoms of heteroscedasticity, and the assumption of non-heteroscedasticity is met.

Non-Multicollinearity Test

Multicollinearity indicates the existence of a perfect linear relationship between independent variables in a regression model. Good regression models do not show any symptoms of multicollinearity. Detection of the presence or absence of multicollinearity is carried out by looking at the *variance inflation factor* (VIF) value of each independent variable against the dependent variable, if the VIF value is not more than 10 and the *tolerance value* is not less than 0.10, then the model can be said to be free from multicollinearity.

Table 11. Multicollinearity Testing

Independent Variables	*Tolerance*	VIF
Implementation of Surveillance System (X1)	0,901	1,110
Surveillance System Components (X2)	0,882	1,134
Supervisory System Functions (X3)	0,917	1,091

Source: Data processed 2023

The table above shows the VIF value on all independent variables is smaller than 10 and the *tolerance* value is also greater than 0.10, so it can be concluded that the regression model is also free from multicollinearity, or in other words the assumption of non-multicollinearity is met.

Non-Autocorrelation Test

Autocorrelation tests are used to determine whether there is a correlation that occurs between residuals in one observation with other observations in the regression model. A regression

model is declared free of autocorrelation if *Durbin Watson* values are in the range of dU to 4-dU. With 46 samples and 3 independent variables, the dU value is 1.67, so 4-dU is 2.33. The calculation of *Durbin Watson value in* Appendix 6 is 2.031, this value is in the range of 1.67-2.33, so it is concluded that the regression model does not autocorlate, and the non-autocorrelation assumption is fulfilled.

Regression Analysis Results

The next stage is to conduct a linear regression analysis to determine the significance of the influence of the implementation of the supervisory system, the components of the supervisory system, and the function of the supervisory system on digital-based supervision, the results of which are briefly presented in the following table.

Table 12. Regression Analysis Results

Variable Dependencies	Independent Variables	Koefisien Regresi	Std. Error	Koef.Beta	t	Say.
Digital-Based Surveillance (Y)	Konstanta	1,210	0,557	-	2,174	0,035
	Implementation of Surveillance System (X1)	0,344	0,096	0,325	3,575	0,001
	Surveillance System Components (X2)	0,364	0,089	0,378	4,109	0,000
	Surveillance System Function (X3)	0,520	0,100	0,467	5,178	0,000
	Correlation (R)	= 0.829				
	Adjusted R-squared	= 0.665				
	F-statistics	= 30,715				
	Sig. F	= 0.000				

Source: Data processed 2023

Regression Equation

The results of regression analysis as presented in Table 4.12 can be arranged regression equation as follows:

Y = 1,210 + 0,344 X1 + 0,364 X2 + 0,520 X3

1. Regression coefficient of variables X1, β1 = 0.344. Explaining the magnitude of the influence of the implementation of the supervision system on digital-based supervision is 0.344. The regression coefficient is positive, meaning that the better the implementation of the supervision system, the better the digital-based supervision at the North Toraja Regency Inspectorate Office .
2. Regression coefficient of variables X2, β2 = 0.364. Explaining the magnitude of the influence of the supervisory system component on digital-based supervision is 0.364. The regression coefficient is positive, meaning that the better the supervision system component, the better the digital-based supervision at the North Toraja Regency Inspectorate Office .

3. Regression coefficient of variables X3, β3 = 0.520. Explaining the magnitude of the influence of the supervisory system function on digital-based supervision is 0.520. The regression coefficient is positive, meaning that the better the function of the supervision system, the better the digital-based supervision at the North Toraja Regency Inspectorate Office .

Correlation Coefficient (R)

The correlation coefficient (R) indicates the degree of strength of the relationship between the independent variable and the dependent variable. The strength of the relationship between the two variables according to Ghozali's opinion (2015) is:

0: There is no correlation between two variables
>0 – 0.25: Very weak correlation
>0.25 – 0.5: Enough correlation
>0.5 – 0.75: Strong correlation
>0.75 – 0.99: Very strong correlation
1: Perfect correlation

The calculation of the correlation coefficient (R) produces a value of 0.829, so the strength of the relationship between the implementation of the supervisory system, the components of the surveillance system, and the function of the supervisory system with digital-based supervision is very strong.

Coefficient of Determination (R2)

The coefficient of determination (*adjusted* R^2) shows several 0.665 which means that 66.5% of digital-based supervisory variables can be explained by independent variables analyzed in the model, while the remaining 33.5% is explained by other variables. In another sense, the percentage of influence of supervisory system implementation, supervisory system components, and supervisory system functions on digital-based supervision is 66.5%.

Test F

The F test results show a calculated F value of 30.715 and a significance value of 0.000 (smaller than 5%), so it can be concluded that the implementation of the surveillance system, supervisory system components, and supervisory system functions together (simultaneously) have a significant effect on digital-based supervision. The results of the F test also indicate that the regression model in this study is good fit or has a good model fit.

Test t

The results of partial testing with *t test* on the resulting regression model are explained as follows:

1. The results of the t test of the effect of the implementation of the supervision system on digital-based supervision resulted in a regression coefficient value of 0.344 with a significance value of 0.001, because the significance value was smaller than α 5%, it was decided that the

implementation of the supervision system had a positive and significant effect on digital-based supervision (H1 was accepted**).**

2. The results of the t test of the influence of the supervisory system component on digital-based supervision resulted in a regression coefficient value of 0.364 with a significance value of 0.000, because the significance value was smaller than α 5%, it was decided that the supervisory system component also had a positive and significant effect on digital-based supervision (H2 accepted).
3. The results of the t test of the effect of the supervisory system function on digital-based supervision resulted in a regression coefficient value of 0.520 with a significance value of 0.000, because the significance value was smaller than α 5%, it was decided that the function of the supervisory system also had a positive and significant effect on digital-based supervision (H3 accepted).

The results of the analysis are also known, the supervisory system function variable has the largest beta coefficient value, the statistical value t is also the largest so that the effect is the most significant. Thus, it can be concluded that the variables that have the most dominant influence on digital-based supervision at the North Toraja Regency Inspectorate Office are the function of the supervision system, then the components of the supervision system, and finally the implementation of the supervision system.

Discussion on the Implementation of the Supervision System Affecting Digital-Based Supervision in the North Toraja Regency Inspectorate

The effect of the implementation of the supervision system on digital-based supervision resulted in a regression coefficient value of 0.344 with a significance value of 0.001, because the significance value is smaller than α 5%, it was decided that the implementation of the supervision system has a positive and significant effect on digital-based supervision, the better the implementation of the supervision system, the better the digital-based supervision. Thus, the first hypothesis states that there is an influence of the implementation of the supervision system on digital-based supervision at the North Toraja Regency Inspectorate Office.

Discussion of the Components of the Supervision System affecting Digital-Based Supervision in the North Toraja Regency Inspectorate.

The influence of the supervisory system component on digital-based supervision resulted in a regression coefficient value of 0.364 with a significance value of 0.000, because the significance value is smaller than α 5%, it was decided that the supervisory system component also has a positive and significant effect on digital-based supervision, the better the supervision system component, the better the

digital-based supervision. Thus, the second hypothesis states that there is an influence of the supervision system component on digital-based supervision at the North Toraja Regency Inspectorate Office.

Discussion of the Function of the Supervision System Affects Digital-Based Supervision in the North Toraja Regency Inspectorate.

The effect of the supervisory system function on digital-based supervision results in a regression coefficient value of 0.520 with a significance value of 0.000, because the significance value is smaller than α 5%, it was decided that the function of the supervision system also has a positive and significant effect on digital-based supervision, the better the function of the supervision system, the better the digital-based supervision. Thus, the third hypothesis states that there is an influence of the function of the supervisory system on digital-based supervision at the North Toraja Regency Inspectorate Office.

CONCLUSION

The implementation of the supervision system has a positive and significant effect on digital-based supervision, the better the implementation of the supervision system, the better digital-based supervision. The components of the supervision system also have a positive and significant effect on digital-based supervision, the better the components of the supervision system, the better digital-based supervision. The function of the supervision system also has a positive and significant effect on digital-based supervision, the better the function of the supervision system, the better digital-based supervision will be.

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