Quality of Audit System Information for Internal Control Effectiveness

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Abstract—**Information system audit is a tool used in the supervision and evaluation of inputs, data processes, and results of financial statements. This study aims to determine the effectiveness of information systems audits in helping control business processes that have an impact on improving internal control and be able to find solutions related to the implementation of information system audits. In reality, in its implementation; there is still fraud that occurs in the service and manufacturing industries due to weak internal control. This research method used the descriptive method to reveal the problem or condition of the data that relates to the implementation of an information system audit for Internal Control Quality. The unit of analysis of this study is that 43 commercial banks in Indonesia are registered with the Financial Services Authority. Verification analysis in this study uses statistical test equipment with Partial Least Square (PLS) based on structural equation testing. The results found that the implementation of an effective Information Systems Audit has a positive impact on Internal Control, which means that implementing an effective Information System Audit will have an impact on improving the quality of Internal Control.**

Keywords—**Information system audit, Accounting information systems, Internal control**

I. INTRODUCTION

Basically, a quality audit starts from an inspection process above with what is done by improving the quality of information systems carried out by auditors both internal auditors and external auditors with the aim of management in determining policies that support the organization Meanwhile, according to in the implementation of an information system audit will also evaluate the effectiveness of controls carried out on the organization of all business activities [1]. Information Technology Audit or IT audit focuses on aspects of the information system contained in an organization, which includes evaluating the implementation, operation, and control of information systems [2]. Audit quality is all possibilities or probabilities of an auditor in finding and reporting an error or fraud that occurs in accounting information systems [4] According to Ron Weber (2010) audit IS process provides performance evaluation on computer systems with several aspects examined in information systems audits such as effectiveness, efficiency, availability system, reliability, confidentiality, and integrity, security aspects, process audits, program modification, audits on data sources, and data files. Several aspects were examined in information system audits such as effectiveness, efficiency, availability system, reliability, confidentiality, and integrity, security

aspects, process audits, program modification, the audit of data sources, and data files. Information System Audit is a systematic process in collecting and evaluating evidence to determine that a computer-based information system used by an organization has been able to achieve its objectives. Audit is an activity that conducts checks to evaluate and evaluate an activity or object such as the implementation of internal controls in accounting information systems whose work is determined by management or the accounting function process that requires improvement. The audit is part of the professional field of accounting association which includes internal and external audit professionals who are always said to be able to improve competencies to be able to adapt to the development of information technology and increase the users of accounting information.

Specific techniques that are applied to IT-based transaction processing information systems. These IT audits can be used for testing through audit procedures designed to test errors in a monetary misstatement. Computer-based testing techniques use certain software used by examiners to examine and achieve audit objectives in conducting audit evidence collection using the computer that is by the test of control and substantive test Internal and external auditors can use computer-based audit approach techniques effectively. In addition to this, in carrying out an information system audit that the auditor can ensure information system objectives can be fulfilled, namely security protecting computer equipment, programs, communications, and data from unauthorized access, modification, or destruction; The development and acquisition of the program is carried out in accordance with special and general authorizations from the management; The program modification is carried out with the authorization and approval of the management; Processing of transactions, files, reports, and other computer records is accurate and complete; Inaccurate source data. Or who do not have the right authorization identified and handled in accordance with established managerial policies; Computer data files are accurate, complete and kept confidential.

Audit programs are needed to create effective and efficient audits. According to besides that it still has two other advantages, namely: Assisting audit management in resource planning, for example, can be calculated how many hours are needed to carry out an audit based on the time expected to carry out each audit step in the audit program; Assist consistency in testing internal controls [8].process, which is influenced by human resources and information

technology systems, which are designed to help organizations achieve certain goals or objectives. Internal control as a renewal of management control, management control emphasizes the procedure, while internal control emphasizes the role of human or perpetrator rather than a series of procedures [6].

So far, almost all aspects of life involve the use of information and communication technology (ICT): Work Communicating, Shopping, ICT Entertainment increasingly sophisticated Faster Greater physical capacity, smaller ICT, increasingly affordable Computer Crime & Computer Fraud. The phenomenon of the Ministry of Finance of the Republic of Indonesia [9]. Imposes administrative sanctions on each of the Marlinna Public Accountants & Partners (Deloitte Indonesia). Subject matter analysis and conclude that there are indications of violations of the accounting profession's standards. As for the violation committed by Public Accountant Office Marlina & colleague, it is not fully fulfilled, the understanding of information system control related to customer data and journal finance receivables accuracy, obtaining sufficient and appropriate audit evidence on Consumer Finance Accounts receivable, there is no reasonableness of occurrence and separate assertions. financing income account limits, implementation of adequate procedures related to fraud risk detection processes and responses to fraud risks, and professional skepticism in planning and conducting audits.

Usthavia Frans, Director of Bank Mandiri's Digital Banking and Technology [4] PT Bank Mandiri Tbk was also exposed to a skimming case which caused losses to customers of banks and banking companies as meant by Skimming which was an act of theft of credit and debit card information by copying information contained there is a magnetic stripe card illegally.

The research conducted by s the results of the study revealing that there is a statistical and positive effect of the quality of information system audits on internal controls that have an impact on managerial performance [16]. Then according to the quality of operational audits on effective information systems can improve company performance assessed and can meet company and industry standards has a positive effect on internal audits on information systems on internal controllers[7]. An effective internal control system can influence the effectiveness of the audit information system [13. Information system auditing can improve measuring the effectiveness of internal control through their efforts [14]. Internal control systems are applied to prevent fraud and comply with laws and regulations, and essential opportunities were missed. The same internal control can be also used to systematically improve business, specifically in terms of effectiveness and efficiency of internal audit [15]

In researching the effectiveness of information system audits using Indicators The COBIT method is more focused on the company's human resources **Define the Strategic Plan**: It is the planning of IT strategies needed to manage and direct all resources. **Determine Technological Direction**: The function of information technology services in determining the direction to support business needs. **Communicate Management** Aims and Direction: Management develops an information technology in the

company and defines the control framework and communicates the policy. **Manage Human Resources**: This step is used to obtain, maintain and motivate a competent workforce for the creation and delivery of IT services for businesses. **Manage Quality**: A QMS is developed and maintained, which includes development, proven acquisition processes, and standards. **Educate and train user**: Effective education of all users of information technology systems, including those contained in information technology, requires identifying the training needs of each user group

Factors that encourage the importance of information system audits to improve internal control [5] Detect that computers are not managed in a less directed manner; Detect risk of data loss; Detecting the risk of making wrong decisions due to information on the results of the computerized or incomplete system process; Maintaining company assets because of hardware, software and personnel has a very important value for the organization; Detect the risk of computer errors; Detect the risk of computer abuse (fraud); Keeping secrecy; Improve control of evolution of computer use. Internal control also has the function of ensuring that the program on the information system is planned and the management objectives. The types of internal control carried out by management include preventative control controls (before a deviation occurs), Detective controls, detect irregularities after they occur; Corrective controls, ensure correction of problems found by detective controls, in general, requires human intervention. Audit Around the Computer is an audit of a computer-based information system without using the capabilities of the equipment itself. The auditor does not make an effort to test the control of the client computer-based information system but on the input and output of the application system. From the assessment of the quality of the input and output of this application system, the auditor can conclude the quality of data processing by the client. Therefore the auditor must be able to access sufficient source documents and a detailed output list in a readable form. The key is to track selected transactions from source documents to estimates and financial reports. To apply this method, the auditor first reviews, and tests the input controls, then calculates the expected results of the selected transaction processing and then the auditor compares the actual results as seen in the estimated balance summary report, with the results calculated manually.

Compensation controls can be found in cases where weaknesses in one control are closed by another control. Information Systems Audit Objectives can be grouped into two main aspects of IT management, namely: Information system audit compliance is focused on obtaining conclusions about conformity aspects, namely: Confidentiality, Integrity, Availability and Compliance, and Performance information system audit is focused on obtaining conclusions on aspects performance, namely: Effectiveness, Efficiency, Reliability [5]. In this study, internal control indicators are (1) efficiency and effectiveness of operations (2) presentation of credible financial statements (3) compliance with applicable laws and regulations [11].

II. METHODS

This research method used the Sense-Making approach, which is a set of meta-theory assumptions that lead explicitly to an overall approach to using methodologies that suggest appropriate methods for framing questions, collecting data, and analyzing to arrive at substantive theories. The methodology of this study uses the Sense-Making approach in framing research questions, data collection techniques, and analysis of [12]. Besides this, Sense-Making provides a more valid description of possible problems and how they can be resolved, than if the user is asked to suggest improvements to an existing relationship. In this study, the analysis method used was Structural Equation Modeling (SEM) with the Partial Least Square (PLS) using a random bootstrapping or doubling method. Therefore the assumption of normality will not be a problem for PLS. Besides being related to data normality, by doing bootstrapping, PLS does not require a minimum number of samples.

Stages of Analysis: The process of data analysis starts at the beginning of the study (literature study). Then proceed with examining all data obtained from informants through triangulation techniques. The results of interviews in the form of transcripts are reduced by category or unit of analysis. **Stages of Interpretation**: After all interviews have been reduced in the unit of analysis, interpretations are made to draw conclusions. This interpretation is carried out by integrating (triangulating) all data obtained with different techniques. The results of the interpretation and discussion will be presented in narrative form (descriptive). The discussion was conducted by analyzing the data based on each informant and analysis unit (from the combined informants). From the results of the discussion, a conclusion will be drawn. This conclusion is the result of research to formulate suggestions or input [12].

III. RESULTS AND DISCUSSION

Measurement Model Variable Quality of Information System audit

The quality of the information system audit consists of 6 (six) manifest variables, namely define the strategic plan, determine the technological direction, communicate management goals and revisions, manage human resources, manage quality and educate and train users. Based on the outer model equation (measurement model) variable information system audit quality, for each manifest variable informing the information system audit quality variable obtained the weight factor as presented in the following Table I.

TABLE I.   MEASUREMENT MODEL

Variable Manifest	Loading Factor	*Measurement Model*	t-count
Define the strategic plan	0,656	$X_1 = 0,656\ X_2 + 0,570$	5,306
Determine technological direction	0,804	$X_2 = 0,804\ X_2 + 0,354$	15,463
Communicate management aims and direction	0,711	$X_3 = 0,711\ X_2 + 0,494$	7,970
Manage human resources	0,837	$X_4 = 0,837\ X_3 + 0,299$	12,061
Manage quality	0,629	$X_5 = 0,629\ X_3 + 0,604$	5,055
Educate and train user	0,784	$X_6 = 0,784\ Y + 0,385$	14,728

The calculation results of the loading factor of the quality of the audit system information variable show that the manifest variable is significant in forming the audit system information organization variable. The value of loading factor for 6 (six) manifest variables of the quality of audit information system latent variable, namely define the strategic plan, was obtained by 0,656 with t-count the amount of 5,306, determine technological direction earned the amount of 0,804 with t-count the amount of 15,463 and communicate management aims and direction earned the amount of 0,711 with t-count the amount of 7,970, the amount of 0,767 the amount of 11,389. The manifest variable of the latent variable manage human resources is earned the amount of 0,837 with t-count the amount of 12,061, manage quality earned the amount of 0,629 with t-count the amount of 5,055 *loading factors* educate and train user earned the amount of 0,784 with t-count the amount of 4,728. Value t-count *loading factor* for 6 (six) manifest variables of the latent variable audit system information variable as seen in the table more than 1.96 so that it can be said that the manifest variable used is meaningful in measuring the information system audit quality variable.

Outer Model variable of Internal Control.

The effectiveness of internal control consists of 3 (three) manifest variables, is efficiency and effectiveness of operations, presentation of credible financial statements and compliance with applicable laws and regulations. Based on the results of SEM PLS processing the outer model equation (measurement model) the variable of internal control effectiveness, for each manifest variable informing the effectiveness of internal control, obtained the loading factor weight as presented in the following Table II:

TABLE II.   THE MODEL VARIABLE OF INTERNAL CONTROL

Variable Manifest	Loading Factor	*Measurement Model*	T_{count}
efficiency and effectiveness of operations	0,916	$Y_1 = 0,916\ X_1 + 0,161$	33,771
presentation of credible financial statements	0,890	$Y_2 = 0,890\ X_1 + 0,208$	27,915
Compliance with applicable laws and regulations.	0,856	$Y_3 = 0,856\ Z + 0,267$	23,435

The outer Model variable of Internal Control

The value of the loading factor for 3 (three) manifest variables of the latent variable effectiveness of internal control as shown in the table is more than 1.96, so it can be said that the manifest variable used is meaningful in measuring the variables of internal control effectiveness. From the value of loading factors obtained looks relevant the biggest contribution in forming the variable effectiveness of internal control is efficiency and effectiveness of operations, presentation of credible financial statements, compliance.

Outer Model variable quality of audit system information with applicable laws and regulations

Loading factors for manifest variables on loading factors for the effectiveness of internal controls show that manifest variables are meaningful in forming effectiveness variables of internal control. The value of loading factor for 3 (three) manifest variables of the latent variable effectiveness of internal control, namely efficiency and effectiveness of operations is equal to 0,916 with t-count the amount of 33,771 and manifest presentation of credible financial statements in the amount of 0,890 with t-count the amount of 27,915. And the manifest compliance with applicable laws and regulations with t-count the amount of 23,435. For the three highest manifest values which are also the main priority to be given attention to increasing the effectiveness of internal controls are the manifest efficiency and effectiveness of operations

Structural Model Testing

To test the structural model obtained in Structural Equation Modeling (SEM) with the Partial Least Square (PLS) approach, the approach is done by looking at several measures, namely convergent validity, discriminant validity, composite reliability, and R2.

The assessment of structural models through the value of convergent validity is seen from the correlation between the item score or component score and the construct score obtained. The indicators of each construct variable used must be stronger than the association with other indicators. The calculation results are shown in the following Table III.

TABLE III.   CORRELATION VARIABLE

Construct	Indicator	Quality of Information System audit (X) (X1)	Effectiveness of internal controls (Y)
Quality of Information System audit (X)	p1	0,811	0,211
	p2	1,076	0,298
	p3	0,852	0,138
	p4	0,958	0,220
	p5	0,277	0,864
	p6	0,248	0,956
Effectiveness of internal controls (Y)	p7	0,189	0,772
	p8	0,083	0,784
	p9	0,243	0,769

Source: PLS SEM Output ***Convergent Validity***

Based on the correlation value of each indicator with the constructed variable used it can be seen that each construct variable has a stronger correlation value with the indicator compared to other indicators. This shows that the structural model obtained has been formed from latent constructs of variables that are precisely formed by the indicator

Discriminant Validity

The second measure used in assessing structural models is discriminant validity. Discriminant validity assesses the validity of the construct that is formed compared to the other constructs (Table IV)

TABLE IV.   DISCRIMINANT VALIDITY

Variable	AVE
Quality of Information System audit (X)	0,764
Effectiveness of internal controls (Y)	0,942

Discriminant validity assesses the validity of the construct that is formed compared to the other constructs. The value of Average Variance Extracted (AVE) is obtained for the construct of the Quality of Information System audit of 0.764. Value of Average Variance Extracted (AVE) for constructs of Effectiveness of internal controls of 0.942. Based on the description above, it is obtained that the AVE value of each reflective latent variable exceeds the specified limit of 0.5 [11] so that the AVE criteria can be met (Table V).

TABLE V.   R-SQUARE VALUE

Relation	λ	T-Statistic	R square
Quality of Information System audit (X) Effectiveness of internal controls (Y)	0,598	8,768	0,53,4

** Significant at the real level 0,05, t-$_{count}$ = 1,96

The R-square for the dependent construct of Quality of Information System audit on Effectiveness of internal controls is obtained at 0.59.8 These results indicate that the Quality of Information System Audit of the Effectiveness of internal controls is 53.4%. Based on the results of the R-square calculation above, the Quality of Information System audit has a strong influence on the effectiveness of internal controls (Table VI).

TABLE VI.   RESULT R-SQUARE

Variable	Path coefficient (R)	Direct Influence (R²)	Indirect Effects (via) X2	Indirect Effects (via) X3	Total
X₁	ρ_{yx1}	$(\rho_{yx1})^2$	$\rho_{yx1}.$ $r_{x1x2}.$ ρ_{yx2}	$\rho_{yx1}.$ $r_{x1x3}.$ ρ_{yx3}	
	0,398	0,398 x 0,398	0,398 x 0,236 x 0,356	0,398 x 0,144 x 0,199	
		0,158	0,033	0,011	0,367

(Source: Attachment of Smart PLS Output)

Structure Path Diagram: Path coefficient, Outer Weight, Outer Loadings

The results of the calculation of the influence of the Quality of Information System audit on the effectiveness of internal controls is 0.367. This magnitude is obtained through calculations with the path coefficient of the Quality of Information System audit variable and latent variable correlations. Directly Quality of Information System audit has an effect of 36.7% on the Effectiveness of internal controls.

Internal control activities are closely related to various types of documents and records generated by information systems. Companies that use information systems effectively can be faster, more correct and more efficient in making these decisions will have an impact on the effectiveness of the internal control structure. Audit of quality information systems will be able to protect the company's assets and resources from fraud, errors, system failure. So that it can be interpreted that between the quality of the information system audit with internal control is a unity that can influence each other

IV. CONCLUSION

This study concludes that there is a strong relationship between the quality of information audit systems and the effectiveness of internal controls. Regarding the quality of quality information system audits, internal controls will run effectively. And on the contrary, which determines the effectiveness of internal controls is done well, then the information system will be of high quality.

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