

The Effect of Computer Assisted Audit Tools on Operational Review of Information Technology Audits

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Abstract—The development of information technology in the present time has a major impact on accounting practices, including in every stage of the audit process. Auditors are expected to be able to implement a computerized system of Computer Assisted Audit Tools (CAATs) as a tool for operational review of information technology audits. This research aims to determine the effect of Computer Assisted Audit Tools (CAATs) on operational review of information technology audits in Public Accounting Firm (KAP) in the city of Medan. The population in this research is all auditors in KAP in the city of Medan, narrowed only to KAP registered in Financial Services Authority (OJK) who have permission to conduct examination in banking sector. The sample in this research is determined by using purposive sampling method. Data collection techniques used in this research is questionnaire method. Data analysis technique used is simple regression analysis. Based on the results of research conducted shows that Computer Assisted Audit Tools (CAATs) have a positive effect on operational review of information technology audits. This indicates that the better use of CAATs in audit activities, the operational review of information technology audits is increasing or getting better.

Keywords—*Computer Assisted Audit Tools (CAATs), operational review of IT audits.*

I. INTRODUCTION

The role of information technology in human activities is currently so substantial. Information technology has been a key facilitator for business activities that contribute substantially to the fundamental changes to structure, operations and management organization. The increasingly widespread professional service needs of public accountants as an independent party, demanding the public accountant profession to improve its performance especially in terms of operational audit review in order to produce reliable audit products for the parties in need. As we know the further effect of the application of information systems that are very pervasive in both business and government circles today is the increasing scarcity of documents/information (as audit evidence) that are physical and the more dominant electronic information. In line with this development, several professional associations related to audits, for example the Institute of Indonesia Chartered Accountants have adjusted the audit standards they have compiled to suit the demands of changes relating to the audit evidence in form of electronic information.

Institute of Indonesian Chartered Accountants for example in the Public Accountants Professional Standards of PSA section 327 paragraph 12. This paragraph states that if a computerized accounting system does not produce audit evidence that can be seen then it is impractical for the auditor to do manual testing so the auditor must consider use of Computer Assisted Audit Tools (CAATs) [1].

Currently the auditor is expected to have the ability and knowledge that is good for implementing Computer Assisted Audit Tools (CAATs) as an auditor's tool to carry out audit procedures. Computerized audit techniques of Computer Assisted Audit Tools (CAATs) is meant here from computer-generated audit programs to the ability of audit software to test the entire population of client data, so that the existence of information technology is fundamental for accountants to be able to understand business processes client and facing a paperless audit environment.

The level of knowledge that must be possessed by auditor depends on the complexity and character of CAATs and the entity's accounting system. Auditor should be aware that use of CAATs in certain circumstances may require that it possess far more computer knowledge than it has in other circumstances. Isworo gave the conclusion of the research that The Role of Information Technology on Audit Computerized Accounting Information System can be seen from 3 points of view, namely: (i) viewed from the audit procedure, (ii) viewed from internal control, and (iii) viewed from audit techniques with using information technology[2]. I Gusti and Sari gave the conclusion of the research that There are a positive Correlation between CAATs, professional training and professional ethics on performance of auditors in Bali, Indonesia [3]. Rizky and Nita gave the conclusion of the research that There are a positive correlation between CAATs, auditor competence, independence, and work experience on audit quality on auditor BPK RI Representative in Aceh, Indonesia [4]. This research aims to determine the effect of computer assisted audit tools on operational review of information technology audits.

II. MATERIALS AND METHOD

A. Operational review of IT audits

The operational frameworks and operational procedures of IT audits include: (1) preaudit, IT auditors should ensure clearly the scope and responsibilities of jobs, including a clear definition of the functional areas and issues to be discussed, as well as ease of data access and information required, (ii) planning, IT Auditors should have information about the structure and responsibilities of each part of IT governance, identify and have a general understanding of the IT governance process running and strategy plan information of information system.

The objectives of IT Governance audit should be focused on assessing the degree of alignment and integration of IT strategies with business strategy, an assessment of the output of IT components and the value-added provided by the organization. The scope of audits should include relevant audit processes for planning, organizing and monitoring processes of IT activities. Team of IT Auditors should have sufficient expertise and competence.

Furthermore (2) is implementation. To collect the most relevant and specific evidence, IT auditors analyzes and assesses the critical areas identified in planning step, including: Business Strategic Planning Process; IT Strategic Planning Process; Management IT services; IT Investment Management; IT Project Management; IT Risk Management; IT Performance Measurement Process, in accordance with applicable standard and regulations, (3) reporting, IT governance audit guidelines recommend that audit reports should include: (a) description the key procedures of top level management and related supporting documents have been established to provide an effective IT management system, (b) key information about uncontrolled risks, (c) information on each control structure which is ineffective and inefficient, (d) information about any non-compliance according to organizational policies or statutory regulations, and (e) overall auditor conclusions about IT governance as defined in the reference. Finally (4) is follow up, IT Auditors must ensure that recommendations made in the audit report have been applied [5].

B. Information technology in Audit

Information technology not only functions operationally, but information technology has become a weapon for competitive advantage of every entity, this is inseparable from the role of computers as a form of technology that is very helpful in business processes[6]. Advances in computer technology have a tremendous impact on all aspects of business activity. Accounting, of course can not be separated from the impact. In a manual accounting system, data as input is processed into information as output by using hand. This is different from computer systems that are all done by / with computers.

Currently, the use of accounting information systems Computer-based by business organizations and many

other organizations is increasing rapidly. The use of computer-based accounting applications also has significant impact for the accounting profession. The complexity of the problems in the electronic data processing environment encourages auditor to develop procedures and techniques for controlling and inspecting more complex computer-based accounting systems. Computerization or using a computer-based accounting system to replace manual system, will automatically reduce or even leave conventional documents (hardcopy) which is verifiable evidence and send to paperless office. Documents or hardcopy is no longer a major part for reporting purposes. The documents are replaced with a binary digit code signal in the computer language that is intangible [7]. Fundamental change due to technological advances also cause to errors, both act of fraud and negligence in an entirely new form. Therefore there is need to prevent all forms of computer errors and safeguard the computer-based information systems, as a consequence to impact on increasing need for accountants in the electronic data processing environment.

C. Computer assisted audit tools (CAATs)

Computer Assisted Audit Tools (CAATs) are computerized programs to carry out the audit functions so that it will automate or simplify the audit process.[8] Computer Assisted Audit Tools (CAAT) not only facilitate analysis but also increases the effectiveness and efficiency of time, cost and also human resources. Besides, Computer Assisted Audit Tools (CAATs) make it easy to access various types of files that are electronic and perform operations comprehensively so that fraud can be prevented earlier.

Surely this affects the quality of audits generated by the auditor in giving his opinion on the financial statements. The existence of Computer Assisted Audit Tools (CAATs) is very helpful for auditors in conducting examinations to be easier and faster to work on.

Auditor can use a variety of software packages or audit software to perform the audit. One type of software in a commonly used audit is Generalized Audit Software (GAS). Besides, there are some software that can support audit implementation, either directly or indirectly namely:

1) Electronic data management (EDM)

Data processing system or electronic data management (EDM) is a data processing system that uses telecommunication and computer technology. There are four components of the EDM system namely hardware, software, data organizing methods and data processing methods. The EDM system though has advantages over manual systems as it can provide better consistency in data processing, but also has weaknesses such as generating limited traces.

2) Generalized audit software (GAS)

Generalized Audit Software (GAS) is the use of computers to perform the task or audit testing procedures independently of the client records. Generalized Audit Software contains a number of computer programs that

together implement various kinds of data processing functions. Generalized Audit Software developed a public accounting office to be used for various audits of clients and different audit years. The development and maintenance of Generalized Audit Software requires high costs. There are two advantages to using Generalized Audit Software. The first Generalized Audit Software is developed in a way that allows all staff of auditors to be trained quickly to use the general program. Second, a single general program can be applied to a wide scope of testing tasks, without the need to increase the cost of creating individual programs. The workings of Generalized Audit Software include the following steps:

- a) Determine the audit and testing objectives that will be implemented. These objectives can be: summing up a data file, selecting samples at random, verifying client calculations, comparing data on two separate files, and so forth.
- b) Determine the feasibility of the use of Generalized Audit Software on the client's PDE system. Determination of the proper use of the Generalized Audit Software is executed by the auditor on the basis of his professional experience.
- c) Designing the application, which includes application logic, calculation, and output format.
- d) Code (coding), application design results are then coded on the paper by auditors in simple Generalized Audit Software (GAS) language. This paper is an instruction that tells GAS what to do with the client. Thus the specified audit objectives can be achieved.
- e) Key entry. Working paper is coded steady and includes programming along with GAS and client data files.
- f) Processing. At this stage GAS processes the actual client file data application, and reviews the results. Generalized Audit Software can be applied to testing controls and substantive testing. For example, the use of Generalized Audit Software in controlling testing is like a comparison of the merchandise selling price between a computerized sales invoice file, with a master file containing an authorized price data. This comparison is structured to determine an unauthorized price frequency. Generalized Audit Software can also be applied to substantive tests. Examples of the use of Generalized Audit Software on substantive tests are like selecting and printing audit samples, testing calculations and making calculations.

3) Commercial general-use software

Commercial General-Use Software is a relatively simple and easy to use software. This software is easy to get with light price. Examples of widely used commercial software are electronic spreadsheets or word processing, and word processors. The example of number processing are Lotus 123, Quattro Pro, Microsoft Excel, VisiCalc, SuperCalc, and Multiplan. Examples of popular word processing include WordStar, WordPerfect, Microsoft Word, Perfect Writer, etc.[9] besides that there are still many software that helps auditors in performing their duties.

- Ho: CAATs have no positive and significant impact on operational review of information technology audits.
- Ha: CAATs have a positive and significant impact on operational review of information technology audits.

The approach used in this research is an associative approach. Associative research is a study that aims to determine the relationship between two or more variables.[10] This research discusses the effect of computer assisted audit tools (CAATs) on the operational review of information technology audits at public accounting firm in city of Medan. The research model can be seen in figure 1. See below:

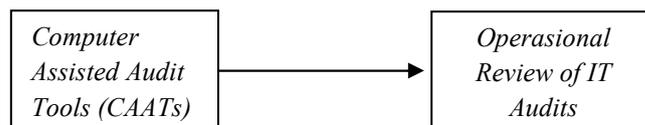


Fig. 1 Research Model

This research was conducted at public accounting firm in city of Medan registered in directory issued by Indonesian Institute of Certified Public Accountants (IICPA) in 2017 and due to limited time is only limited to public accounting firm registered in Financial Services Authority or *Otoritas Jasa Keuangan (OJK)* in examination of banking sector.

The location is chosen to facilitate the collection of data because public accounting firm listed in the directory will be easy to know. In addition, the public accounting firm registered in IICPA directory has obtained permission from the Minister of Finance of the Republic of Indonesia as a forum for public accountant to carry out its work.

According to Sugiyono the object of research is a nature of the object set by researchers to be studied and then will get the conclusion. Object in this research is auditor working in public accounting firm who has authority to audit banking institution in city of Medan. The list names of the public accounting firms in question can be seen in table I.

TABLE I. LIST OF PAF REGISTERED IN OJK OF BANKING SECTOR

| No | Names of PAF/KAP | Adress & Phone |
|----|---------------------------------------|---|
| 1 | KAP Albert Silalahi dan Rekan | Setia Budi Street, Komp. Setia Budi Raya C 28 Medan 20132, phone. (061) 80039955 |
| 2 | KAP Drs. Biasa Sitepu | Teuku Umar Street No.73 Medan 20152, Phone (061) 4512715 |
| 3 | KAP Erwin dan Zikri | Niaga Citra Garden Area Blok A 5 No.31Djamin Ginting Street, Medan 20156, Phone : (061) 8220566 |
| 4 | KAP Fachrudin dan Mahyuddin | Brigjen Katamso Street No.20 G Medan 20158 Phone : (061) 4518891, 4150385 |
| 5 | KAP Kanaka Puradiredja, Suhartono | Masjid Perumahan Taman Kyoto Street Blok B Heinan No.23, Medan 20122, Phone : (061) 8225186 |
| 6 | KAP Drs. Katio dan Rekan (Pusat) | Sei Musi Street No.31, Medan 20121 Phone : (061) 4157460, 75069121, 77777317 |
| 7 | KAP Drs. Selamat Sunuraya dan Rekan | Stasiun Kereta Api Street No.3 A, Medan 20111, Phone : (061) 4528720 |
| 8 | KAP Dr. Wagimin Sendjaja, Ak, CA, CPA | Kalimantan Street No.4 Medan Kota Medan 20211 Phone : (061) 4574918, 68737187 |

Source : Directory IICPA in 2017 [11]

Primary data is data obtained directly from the source, observed recorded for the first time. Primary data in this research is in the form of result of questioner/answer from respondent. Secondary data is a secondary source of the required data[12]. Secondary data in this research is overview from public accounting firm of banking audit service in city of Medan.

According Sugiyono, the population is a generalization region consisting of objects or subjects that have certain qualities and characteristics set by researchers to be studied and then drawn conclusions. The population in this study were all auditors who were still active during this research was conducted at 8 public accounting firm of banking sector in Medan City registered at Indonesian Institute of Certified Public Accountants (IICPA) and registered in OJK with total population of 77 auditors.

TABLE II LIST OF AUDITOR POPULATION

| Names of PAF/KAP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total |
|-------------------------|---|---|----|---|----|---|---|---|-------|
| Senior Auditor (Sampel) | 6 | 5 | 10 | 5 | 6 | 5 | 6 | 4 | 47 |
| Junior Auditor | 2 | 0 | 12 | 1 | 10 | 0 | 2 | 3 | 30 |
| Quantity of Auditor | 8 | 5 | 22 | 6 | 16 | 5 | 8 | 7 | 77 |

Source: Data Processed

Sampling technique conducted in this research is purposive sampling. Purposive sampling is sampling with criteria in the form of a certain consideration. Criteria of sampling in this research as follows:

1. Senior auditor, there are supervisor, manager and partner working in public accounting firm in city of Medan.
2. Still actively working in the relevant public accounting firm.

Based on that criteria, then obtained 47 samples consisting of senior auditors, supervisors, managers and partners who work on public accounting firm in city of Medan. Data collection methods used in this research is to use a questionnaire, the method of data collection conducted by giving a set of questions or written statement to respondents to be answered. In this research, the questionnaire was directly delivered to the study site and given to the respondents. The questionnaire distributed in form of a list of questions written to respondents regarding CAATs and operational review of IT audits on public accounting firm in city of Medan. Respondents answers will be measured using a Likert scale that measures the attitudes, opinions, and perceptions of a person or group of people by agreeing or disapproving of the question posed with score 5 (SA = Strongly Agree), 4 (A = Agree), 3 (N = Neutral), 2 (D = Disagree), 1 (SD = Strongly Disagree).

Hypothesis testing using simple linear regression analysis. Simple linear regression analysis is done by making simple regression equation, and test the significance and linear regression. a simple regression equation is obtained by the form:

$$Y = a + bX$$

Description:

Y = Dependent variable

X = Independent variable

a = Intersept

b = Koefisien regresi (slop)

III. FINDINGS AND DISCUSSION

This research examines the effect of Computer Assisted Audit Tools (CAATs) on operational review of information technology audits at public accounting firm in Medan. The number of population in this research is 8 public accounting firm obtained from the IICPA directory. Accessed by researchers through the website address: www.iapi.or.id in April 2018. The number of samples obtained based on the questionnaire returned is 8 public accounting firm, with respondents who meet the criteria as much as 47 respondents.

Simple regression analysis is used to examine the effect of independent variables that is CAATs (X) on the dependent variable that is a operational review of information technology audits (Y). Here's a simple formula to determine the values of a and b:

$$a = \frac{(\sum y)(\sum x^2) - (\sum x)(\sum xy)}{n(\sum x^2) - (\sum x)^2}$$

$$b = \frac{n(\sum xy) - (\sum x)(\sum y)}{n(\sum x^2) - (\sum x)^2}$$

Based on the above formula obtained results, we get a simple regression equation:

$$Y = 24,59 + 0,29X$$

From the simple regression equation is known constant value of 24.59 means that if CAATs are zero, then the level operational review of IT audits is 24.59. The regression coefficient of CAATs variable (X) of 0.29 has a positive value means there is a positive relationship between CAATs with operational review of IT audits, the higher the use of CAATs then the operational review of IT audits will increase or better. Based on data processing using WarpPLS version 6.0 application, obtained the following results:



Fig. 2 Lane of coefisien

Based on figure 2 above can be seen that the R square value of 0.23, shows that the independent variables (CAATs) are able to explain variation of the dependent variable (Operational Review of IT Audits) only by 23% of the rest by 77% explained by other variables outside the model. Partial significance test (T-test) is used to test meaning or significance of partial regression coefficient. Testing through t test is by comparing t_{count} with t_{table} at the real level $\alpha = 0,05$. t test has a positive and significant effect if the calculation result is greater than t_{table} (t_{count} greater than t_{table}) or the error probability is less than 5% ($P < 0.05$). [13] From the above results is known positive path coefficient is 0.48 means there is a direct influence between the CAATs with the operational review of information technology audits so the better use of CAATs in audit activities then the operational review of information technology audits increasing or better.

The probability value of error based on path coefficient of 0.01 is smaller than 0.05. [14] it's means that the direct influence between CAATs and operational review of information technology audits is significant. From the results of analysis concluded that H_a received and H_o rejected. This means that there is a positive and significant influence between CAATs and operational review of information technology audits.

This is directly proportional to the role of CAATs in improving efficiency and effectiveness of auditors in conducting audits by combining audit understanding and expertise with knowledge of computer-based information systems either at the time of inputs, processes up to output which will ultimately result in a significant improvements in audit process of information technology system.

IV. CONCLUSION

Based on the results of research and discussion obtained, it can be concluded that computer assisted audit tools (CAATs) have a positive and significant impact on operational review of information technology audits. Based on conclusions that have been described, it can be submitted some suggestions that the public accounting firm should develop a software-based audit system for better produced output and facilitate the performance of auditors so that audit decision making in terms of audit process implementation more accurate. Then for the auditors, auditors must have sufficient knowledge to plan, implement, and using the results of CAATs use. The level of knowledge that auditors must possess depends on the complexity and nature of CAATs and entity accounting systems. Therefore, auditors must have far more computer knowledge than they have in other situations.

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