

Unveiling the Potential of Computer-Based Audit Strategies: A Comparative Study between Conventional and Automated Approaches

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ABSTRACT: This research compares the conventional audit approach with the automated audit approach in the context of computer-based audit strategies. A comparative quantitative method was employed, using surveys and interviews as data collection techniques. The majority of respondents (68%) preferred the automated audit approach, indicating a significant preference. The analysis revealed that the automated audit approach can reduce dependency on human resources. The independent samples t-test confirmed significant differences between the two audit methods in terms of efficiency and effectiveness. The automated audit method demonstrated higher scores in efficiency and effectiveness. This study suggests adopting the automated audit method as a more modern and efficient approach in auditing practices. Further research, encompassing a broader sample scope and diverse industry variations, is suggested to gain a comprehensive understanding of preferences and factors influencing the acceptance of the automated audit method.

KEYWORDS: Computer-based audit, conventional approach, automated approach, efficiency, effectiveness.

1. INTRODUCTION

Audit is an independently conducted process that involves critical and systematic examination of financial statements prepared by management, along with financial records and supporting tools, with the intention of providing an evaluation of the authenticity of those financial statements [1]. The purpose of auditing financial statements is to obtain and assess the truthfulness related to a company's or organization's financial reports, aiming to present an opinion that the submitted reports are sound and compliant with commonly used accounting standards, such as GAAP[2].

In the modern era, adaptability to existing dynamics has become essential, particularly in the field of accounting. One dynamic process is the integration of information technology in the auditing process. Companies and auditing entities are shifting from conventional audit methods to technology-based or IT-utilizing approaches to support data processing. This transition is evident in the incorporation of technology into auditing practices, which positively impacts accounting routines. However, this shift also presents challenges as auditing entities need a deeper understanding of the computerized systems employed by companies, which are closely intertwined with their business operations. Furthermore, this influence challenges auditors to continuously align themselves with advancing digitalization, especially when designing auditing processes that adhere to standards[3].

In the era of globalization, information technology, and communication revolution, the majority of establishments and economic units are compelled to utilize IT in their business management and operations. They also leverage financial and

non-financial data to establish special relationships with customers, enhance market share, and increase productivity within a dynamic environment. This underscores the significant challenges that the auditing profession must overcome to consistently provide high-quality services[4].

The role of auditing holds immense importance in the realm of accounting within a company. To ensure the reliability and relevance of information in a company's financial reports, independent verification is crucial and must be recognized by all relevant parties. Auditors act as third parties entrusted with examining financial statements, and audited financial reports carry a higher level of trust compared to unaudited ones[5].

Until about three decades ago, auditors attempted to mitigate audit risk through extensive substantive testing. However, the evolution of organizations and the increase in their activities have posed challenges for auditors. Nevertheless, auditors assess inherent and control risks, and subsequently break down audit risk by establishing detection risk. By determining detection risk, auditors can identify the nature, timing, and extent of substantive testing appropriate to address audit risk. This procedure identifies accounts with higher audit risk, necessitating further investigation [6].

Automated audit methods revolutionize the way audit work is carried out. With the advent of the Internet of Things (IoT) and other technological advancements, this approach employs computer software or technological tools to aid auditors in detecting irregularities within data files. The automated audit method allows for more effective fraud analysis and detection by enabling auditors to analyze and visualize larger volumes of data. Previously, auditors relied on office tools such as paper

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printouts and word processing that only scratched the surface of complex processes and tasks. As the significance of auditing as a critical aspect reflecting a company's efficiency increases, the adoption of automated auditing brings forth numerous advantages [7].

Automated audit is a method that relies on digital systems and utilizes various computer-based software and technological aids. In this context, applications like Atlas, Microsoft Office, Google Workspace, and digital files become integral parts of the audit process. Automated audit leverages technology to automate several manual audit tasks. The primary difference between automated and conventional auditing lies in the use of technology. In automated audit, necessary data can be accessed and processed electronically. Auditors can employ specialized software to collect, analyze, and audit data more efficiently. Additionally, automated audit can provide greater speed and accuracy in data collection and processing, thus minimizing the risk of human errors.

The utilization of technology in auditing provides several significant benefits. First, technology enables auditors to quickly access and analyze larger amounts of data. In conventional audits, processing large-scale data often requires significant time and effort. However, with the adoption of automated audit, auditors can easily identify patterns or anomalies in data that may indicate fraud or irregularities. Second, automated audit enhances the structure and documentation of the audit process. Auditors can use software to organize audit tasks, track progress, and maintain electronic audit records. This enhances efficiency and transparency in the audit process, facilitating access to relevant information for further examination or future audits.

In the term "automated audit," technology is used to automate some audit tasks. For instance, with automation tools, auditors can rapidly analyze data and generate automatically formatted reports. This reduces the manual effort required in routine tasks, allowing auditors to focus on deeper analysis and more strategic decision-making. Overall, the expectation is that automated audit will bring significant advancements in efficiency, accuracy, and analytical capabilities to the audit process. By harnessing available technology, auditors can optimize data usage and provide more detailed and timely audit outcomes.

One of the advantages of the automated audit approach is its ability to conduct data analysis more effectively and efficiently. In this approach, specialized audit software is used to collect, analyze, and evaluate audit data with high accuracy. Thus, the automated audit approach assists auditors in identifying errors or inconsistencies more accurately and in a timely manner. The quality of audit results is paramount for auditors. Audit quality refers to how likely auditors are to detect errors in a company's financial statements that will be reported. Good audit quality instills strong confidence in clients and adds value to auditors [8].

A study in Nigeria reviewed relevant literature that provides strong evidence of the effectiveness and efficiency of computer-assisted audit tools and techniques (CAATs) in audit practices

for accounting services. The study empirically explains the relationship between CAATs and performance expectations, effort expectations, facilitation conditions, and social influence. Empirical analysis indicates a connection between the use of CAATs and all explanatory variables in the model. Based on these empirical findings, the study concludes that the adoption of computer-assisted audit tools and techniques has proven beneficial for auditors in the complex business environment of the 21st century [9].

Technology-assisted audit techniques will impact the development of the audit process. According to International Standards on CAATs, CAATs can be used to enhance audit efficiency by recalculating information provided by audit clients and enabling auditors to directly examine electronically stored evidence. Auditors who leverage cutting-edge technology stand to gain significant advantages in conducting more efficient and effective audits, whether through computer audit programs or audit software capable of thoroughly testing all client data [10].

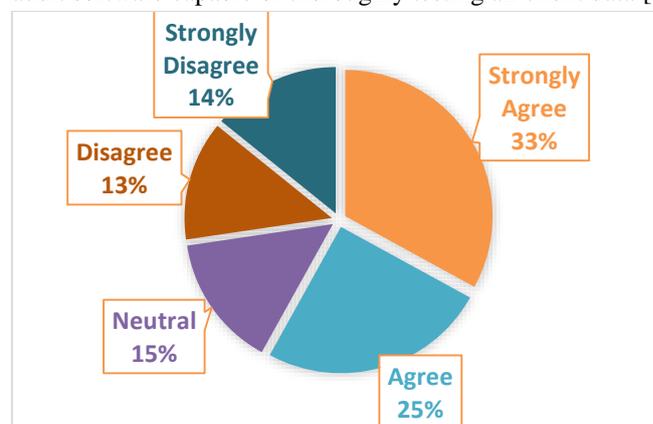


Figure 1. Computerized Method Influencing Auditor Performance Expectations

The research above indicates that the majority of respondents strongly agree that the computerized audit system will affect auditor performance expectations. In another aspect, 30 percent of respondents feel very strongly that computerization affects their effort expectations in conducting audits. Additionally, 30 percent of respondents strongly agree that computer-based audit assistance has an impact on their work condition expectations [11].

It has been found that the implementation of complete Computer-Assisted Audit Techniques (CAATs) can save auditor manpower resources, reduce audit costs, decrease the time spent on audit tasks, enhance audit quality, and enable companies to improve operational efficiency [12]. Another study reveals that the use of information technology in various audit fields helps enhance the efficiency and effectiveness of the examination process. However, there are obstacles hindering serious decision-making to utilize information technology for efficiency and effectiveness improvement [13].

Furthermore, it is recommended that public accounting firms enhance and maintain the professionalism of each auditor to prevent financial statement manipulation and achieve optimal

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performance. Auditors who enhance professionalism and possess sufficient expertise in their professional field contribute to an increase in quality performance [14]. It has also been found that the most popular classification of audits is based on their execution, namely internal and external audits [15].

Numerous factors can influence the performance of auditing, as indicated by research suggesting that audit experience has a linear impact on auditing performance. In another variable, it is found that audit professionalism does not affect auditing performance significantly in Public Accountant Offices in the DKI Jakarta and Surabaya regions. However, the performance of an auditing process can be influenced by auditor experience and auditor professionalism by 96% [16].

In addition to the focus on audit methods, operational audits can be conducted to examine a company. Operational audits are evaluations of all activities and operational functions of an entity aimed at increasing organizational efficiency and effectiveness. The goal of this audit is to provide recommendations for improving existing management. This research employs the following dimensions of operational audit: examination, analysis of operational costs, use of efficient operational methods, effectiveness evaluation, and reporting of audit findings [17].

A study also implies challenges in utilizing technology implementation in auditing activities and suggests that audit firms can develop and actively promote training programs to enhance auditor knowledge and skills for learning and operating CAATs, thus increasing auditor performance expectations and ultimately enhancing CAAT usage. In the context of this research, promotional programs may be highly useful as research participants on average provided low ratings for CAATs ease of use, and the hypothesis regarding effort expectations was not supported. Furthermore, the results of this research can inspire audit firms to invest more in adequate infrastructure to support CAAT usage. Ultimately, audit firms may encourage CAAT usage through incentives and promotion criteria, especially for auditors who are less motivated to adopt CAATs [18].

This writing aims to compare the effectiveness and efficiency of the conventional audit approach with the automated audit approach within the computer-based audit environment. In conclusion, this research aspires to provide knowledge and recommendations for auditors when selecting the most suitable audit approach based on needs and available resources.

2. RESEARCH METHOD

The research method that can be used for the journal article "Computer-Based Audit Technique Strategies: A Comparative Study of Conventional vs. Automated Audit Approaches" is a comparative quantitative approach with survey and interview methods as data collection techniques. This approach is chosen to compare the effectiveness and efficiency of conventional audit approaches with automated audit approaches in a

computer-based audit environment. The research process includes research design, data collection, and data analysis.

This study employs a comparative research design, where conventional audit approaches and automated audit approaches are compared in terms of their effectiveness and efficiency. Data is gathered through surveys and interviews with experienced auditors in both types of audit approaches. This design allows for a direct comparison between the two approaches in terms of efficiency, effectiveness, and accuracy.

The population is the group of individuals or objects that will be studied, while the sample is a subset of the population chosen as research subjects. In this study, the population can be companies implementing either conventional or automated audit approaches. Researchers can select a sample of companies representing both approaches. The population of this study is auditors involved in the audit process in both computer-based and conventional audit environments. Sample selection is done using purposive sampling, where auditors experienced in both audit approaches are chosen as research respondents. The sample used includes several auditors located in Jakarta, Surabaya, and Riau.

The independent variable in this study is the audit approach, which consists of two categories: conventional audit approach and automated audit approach. The conventional audit approach involves manual auditing by auditors, including examining physical documents and data. On the other hand, the automated audit approach utilizes specialized software for electronic data collection, analysis, and evaluation.

The dependent variables in this study are audit effectiveness and efficiency, reflecting the ability of the chosen audit approach (conventional or automated) to achieve set audit objectives. Audit effectiveness and efficiency involve the audit approach's ability to detect errors or discrepancies, generate accurate audit reports, process speed, and evaluate and recommend corrective actions.

Data is collected using questionnaires developed based on relevant literature and interviews with auditors and company management. The questionnaire consists of structured questions covering aspects of effectiveness and efficiency in both audit approaches. Interviews are conducted to gain a deeper understanding of auditors' experiences in using both conventional and automated audit approaches.

Questionnaires are distributed to the selected respondents. Respondents are requested to fill out the questionnaires independently and provide honest answers. Interviews with auditors are conducted face-to-face or via telephone using prepared interview guides. During the interviews, auditors are asked to share their experiences and perspectives on using both audit approaches, the challenges they face, the benefits they perceive, and their perceptions of the effectiveness and efficiency of the audit approaches.

Data obtained from questionnaires and interviews are analyzed using statistical methods. Qualitative data from interviews are thematically analyzed to gain a deeper understanding of auditors'

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experiences. Interview transcripts are analyzed to identify themes and patterns related to the effectiveness and efficiency of conventional and automated audit approaches. The results of this analysis are then used to compare the two audit approaches in terms of effectiveness and efficiency.

In this study, data analysis can be performed using statistical tests such as t-tests, ANOVA, or regression analysis. With the comparative research method, researchers can determine the differences between conventional and automated audit approaches and identify the strengths and weaknesses of each approach in enhancing audit effectiveness.

In this study, research ethics are adhered to by maintaining respondent identity confidentiality and ensuring their participation is voluntary. Researchers also obtain permission and consent from the involved institutions and participants. The study follows applicable research ethics guidelines and respects the confidentiality of data obtained from respondents. The research results are expected to provide a better understanding of the differences and advantages of each audit approach and offer recommendations for auditors and organizations in choosing the most suitable audit approach for their needs and audit environment.

3. RESULT AND DISCUSSION

Based on the frequency test data, it was found that the majority of respondents (68%) chose the automated audit approach as their audit method, while 32% of respondents opted for the conventional audit approach. This indicates a significant preference for the automated audit approach in auditing practices. Additionally, regarding the experience of being an auditor, the distribution of respondents is divided with the highest being 1-6 months, accounting for 34% of the total research sample, followed by 28% for auditors with 1-2 years of experience and 18% who have worked in the audit profession for more than 5 years.

From the analysis results, it was found that 28% of respondents stated that the audit approach they used tended to maintain a level of dependence on human labor. As many as 62% of respondents stated that their chosen audit approach could reduce dependence on human labor. Only 10% of respondents indicated that their method led to dependence on human labor. This indicates that the majority of respondents tend to have a view that their chosen audit approach can reduce dependence on human labor.

Regarding respondents' interest in trying different audit approaches to compare their effectiveness, it was found that 92% of respondents expressed interest in doing so, while only 8% were not interested. This result demonstrates a significant interest among respondents for further exploration of different audit approaches in order to enhance their understanding of effectiveness.

Based on the analysis results on the audit methods, there are two categories being compared: the conventional audit method and the automated audit method. In terms of efficiency, it was found

that respondents using the conventional audit method had an average efficiency score of 28.75 with a standard deviation of 4.243. On the other hand, respondents using the automated audit method had an average efficiency score of 35.53 with a standard deviation of 2.446. Looking at this difference in means, there is an indication that the automated audit method tends to have a higher level of efficiency compared to the conventional audit method.

Furthermore, in the context of effectiveness, respondents using the conventional audit method had an average effectiveness score of 26.25 with a standard deviation of 4.181. Conversely, respondents using the automated audit method had an average effectiveness score of 31.00 with a standard deviation of 1.779. Based on this difference in means, there is an indication that the automated audit method has a slightly higher level of effectiveness compared to the conventional audit method. These analysis results provide an initial overview of the comparison between the efficiency and effectiveness of the conventional audit method and the automated audit method.

Based on the results of the independent samples t-test conducted, it is evident that there is a significant difference in efficiency scores between the conventional audit method and the automated audit method. Under the assumption of equal variances, the t-test value is -10.110 with a p-value of 0.000. This indicates a significant difference between the two audit methods in terms of efficiency. Additionally, the mean difference between the two audit methods is -6.779, with a 95% confidence interval ranging from -8.110 to -5.449.

Similarly, in the context of effectiveness scores, the results of the independent samples t-test also show a significant difference between the conventional audit method and the automated audit method. Under the assumption of equal variances, the t-test value is -7.988 with a p-value of 0.000. This suggests a significant difference between the two audit methods in terms of effectiveness. Furthermore, the mean difference between the two audit methods is -4.750, with a 95% confidence interval ranging from -5.930 to -3.570. From these interpretations, it can be concluded that the automated audit method tends to be more efficient and effective compared to the conventional audit method.

Based on the conducted analysis, a significant comparison is evident between the conventional audit method and the automated audit method in terms of efficiency and effectiveness. Overall, the majority of respondents tend to prefer the automated audit approach (68%) over the conventional audit approach (32%).

In the context of efficiency, it was found that respondents using the automated audit method had a higher average efficiency score (35.53) compared to respondents using the conventional audit method (28.75). This indicates that the automated audit method can enhance the efficiency of the auditing process by reducing the time and effort required.

Furthermore, in terms of effectiveness, respondents using the automated audit method also had a slightly higher average

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effectiveness score (31.00) compared to respondents using the conventional audit method (26.25). This result suggests that the automated audit method can provide more effective outcomes in terms of detecting errors and discrepancies in financial reports.

Additionally, the results of the independent samples t-test show a significant difference between the two audit methods in both efficiency and effectiveness. In terms of efficiency, the mean difference between the two audit methods is -6.779, while in terms of effectiveness, the mean difference is -4.750. The 95% confidence interval indicates that these differences are statistically significant. These findings will be presented in the following graph:

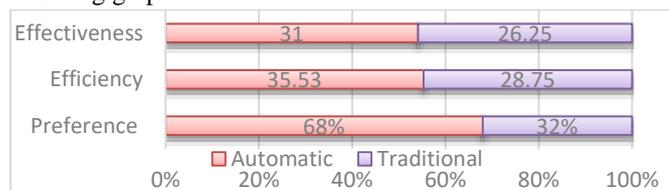


Figure 2. Research Results Graph

4. CONCLUSION AND RECOMMENDATION

Based on these findings, it can be concluded that the automated audit method demonstrates superiority in terms of both efficiency and effectiveness compared to the conventional audit method. The automated audit method reduces reliance on human labor, enhances the efficiency of the auditing process, and provides more effective outcomes in detecting errors and discrepancies. Therefore, to enhance the quality and effectiveness of auditing practices, it is recommended to adopt and implement the automated audit method as a more modern and efficient approach.

The automated audit method has proven to be more efficient and effective than the conventional audit method based on this research. The majority of respondents (68%) chose the automated audit method, indicating a significant preference for this method. The automated audit method yields higher efficiency and effectiveness scores compared to the conventional audit method. This demonstrates that the automated audit method can reduce the time and effort required and provide better results in detecting errors and discrepancies. It is recommended to adopt the automated audit method as a more modern and efficient approach in auditing practices.

There is potential for further research with a broader sample scope and more diverse industry variations. Identifying factors that influence preferences for the automated audit method and its acceptance is crucial. Expanding the observed variables and adopting a mixed-method approach between automated and conventional audit methods, as well as involving other audit methods in comparison, is also valuable. Exploring the impact of auditor experience on the efficiency and effectiveness of the audit method should also be pursued. The results of this research can provide significant contributions to auditing practitioners in making informed decisions.

For further research, it is recommended to broaden the range of involved respondents, including senior management, internal

auditors, and external auditors, to gain a more comprehensive insight. Additionally, the research could explore contextual factors that influence the adoption of the automated audit method, such as regulatory changes or cultural factors. Utilizing a longitudinal approach and integrating qualitative methods will provide a deeper understanding of the adoption trends, practitioner experiences, and challenges faced.

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