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Exploring the impact of CAATs adoption on audit quality: A TOE framework approach

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Abstract: The rise of artificial intelligence and big data has compelled public accounting firms to integrate advanced technologies into their audit processes to handle the growing scale, diversity, and complexity of client data effectively. Drawing on the Technology-Organization-Environment (TOE) framework, this study analyzes how technological, organizational, and environmental contexts influence the adoption of Computer-Assisted Audit Techniques (CAATs) and evaluates their contribution to enhancing audit quality. This study analyzed data from 115 external auditors from public accounting firms in Indonesia, obtained through questionnaire distribution. The collected data were then processed using SMART-PLS 4.0, with a series of tests such as outer models, validity and reliability tests, determination coefficients, and hypothesis testing to analyze and interpret the research data. The study concludes that within the TOE framework, the technological and organizational contexts significantly influence the adoption of CAATs and positively impact audit quality, while the environmental context shows no significant effect. Strong technology and organizational support play a critical role in the effective implementation of CAATs to improve audit quality. By increasing management readiness and commitment, accounting firms can produce more efficient and reliable audit processes.

Keywords: *Audit quality, Computer-assisted audit techniques, Technology–organization–environment framework.*

1. Introduction

1.1. Research Background

In this modern era, artificial intelligence is rapidly growing and being adopted by many public accounting firms. However, this is inevitable for a lot of firms due to the nature of recent years, where audit clients' data has grown significantly in scale, diversity, and complexity [1]. Companies now generate and accumulate a vast amount of data that they recognize as their valuable assets and are leveraging analytics to extract valuable insights from it [2].

This immensely large amount of data is called big data. Big data can be identified as datasets that are large in volume, have variety, and velocity, which is a widely known concept called the 3Vs [3]. These datasets can be processed efficiently with the use of specialized scaling methods [4]. Examples of big data can be classified into two categories: financial data and non-financial data, which includes text messages, phone logs, email exchanges, and many others [5].

As many companies opt for automated systems to record and manage their financial transactions, auditors will face increasing pressure to adapt by utilizing advanced technology and tools [6]. This adaptation is necessary to assist them in navigating the complex and large volumes of datasets during audits.

To address the advancing demands, audit firms have decided to turn to utilizing Computer-Assisted Audit Techniques (CAATs), which are tools that help auditors navigate through their audit procedures more effectively, efficiently, and accurately [7].

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CAAT's various features, such as e-working papers for basic needs, statistical software for data processing, and artificial intelligence in predicting financial problems, reflect an overall transformation in the digital audit process [8, 9]. Furthermore, by helping auditors analyze large datasets, CAATs not only make the audit process more efficient, but the results are also more trustworthy, and the opportunity to uncover fraud and increase information disclosure is greater [7].

Audit quality is essential to ensure that the audit procedures are completed, producing accurate and reliable financial reports for stakeholder use.

However, in today's digital world, audit quality also involves an auditor's ability to use technology effectively, adapt to new digital processes, and analyze large datasets efficiently [10]. So far, there have been various studies conducted analyzing the relationship between AI adoption and audit quality, addressing both the advantages and disadvantages.

A study in 2024 concluded that the use of CAATs can fundamentally transform the auditing profession by enhancing overall audit quality, boosting effectiveness, and improving efficiency [11].

A study conducted in 2021 discusses how CAATs enhance audit efficiency by examining 100% of transactions and detecting errors and fraud.

However, auditors need the willingness, skills, and experience to use them effectively [12]. These studies show that CAATs can improve audit quality by increasing efficiency, accuracy, and error detection.

However, they also emphasize that auditors need the right skills and training to fully benefit from these tools.

As seen in the existing research, while many studies, such as ones conducted by Ramen et al. [13] have applied the Technology-Organization-Environment (TOE) framework to explore CAATs adoption, few have measured how this adoption impacts audit quality.

This gap highlights the need for thorough research that investigates how CAATs are integrated into auditing practices, how they affect audit quality, and what strategies are necessary to maximize the benefits of using these tools.

This study aims to fill the gap in this area with the lack of research that looks at how adopting CAATs affects audit quality using the TOE framework.

While many studies focus on CAATs adoption or how technology impacts auditing, few explore how the factors in the TOE framework work together to influence CAATs adoption and its impact on audit quality.

This research gap shows the need to better understand the drivers behind CAATs' adoption and how they ultimately affect the quality of audits.

1.2. Problem Statement

Although CAATs are increasingly recognized for their potential in benefiting audits through improving effectiveness and efficiency, it is still crucial to understand the underlying factors that drive their adoption. In the end, it becomes an important research topic on how the adoption of CAATs ultimately impacts audit quality.

This research will use the TOE framework to study how CAATs are adopted in auditing, focusing on what drives their use and how this affects audit quality. It is important to examine the factors that influence the implementation of CAATs in audits.

By understanding these factors, we can better comprehend how adopting CAATs impacts audit quality. The main research questions addressed in this study are as follows:

1. Does the technological context affect the adoption of CAATs in public accounting firms in Indonesia?
2. Does the organizational context affect the adoption of CAATs in public accounting firms in Indonesia?
3. Does the environmental context affect the adoption of CAATs in public accounting firms in Indonesia?

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4. Does the adoption of CAATs impact audit quality?

2. Literature Review

2.1. TOE Approach

The Technology Organization Environment (TOE) framework, originally put forth by Tornatzky et al. [14], serves as a robust theoretical model for analyzing the complex process of technological innovation and its subsequent adoption.

This model is fundamentally built on the premise that an organization's decision to integrate new technology is shaped by more than just the technology's innate capabilities; it is profoundly influenced by the firm's internal makeup and the external operating environment [15].

This holistic, tri-context perspective has made the TOE framework a widely favored and highly applied model for studying adoption patterns across diverse fields, including information systems, e-business, and especially auditing [16].

The framework systematically breaks down the adoption environment into three crucial, interacting domains: the technological, organizational, and environmental contexts.

The technological context addresses the attributes of innovation that influence adoption choices, such as its perceived usefulness, ease of use, and compatibility with existing systems [17]. These factors are essential in determining whether tools like CAATs are perceived as both beneficial and practical within professional audit firms.

Within the auditing domain, practitioners are naturally inclined to embrace technologies that promise greater efficiency, enhanced accuracy, and a boost in the reliability of their audit outcomes [7, 18]. The organizational context focuses on the firm's internal operational environment, encompassing its available resources, leadership style, and cultural climate. Active commitment from management, adequate financial backing, and high employee competency are vital ingredients for successful technology integration [19, 20]. Consequently, a firm with a clear digital transformation strategy and leadership that actively champions technology use is far more likely to integrate CAATs effectively. Lastly, the environmental context encompasses external pressures, such as market competition, regulatory mandates, and client expectations, all of which can either accelerate or impede the adoption process [6].

The TOE framework's principal strength lies in offering a systemic view, helping researchers and auditors understand how these three dimensions, technological readiness, organizational capacity, and external pressures, interact to shape the ultimate adoption of innovation in audit practices.

2.2. Computer-Assisted Audit Techniques

Computer-Assisted Audit Techniques (CAATs) represent specialized software tools that empower auditors to execute their duties with increased efficiency, accuracy, and depth compared to manual procedures [9].

A key capability of CAATs is their capacity to process and analyze the entire population of client data, moving beyond the inherent constraints of relying on statistical sampling alone, thereby significantly enhancing the detection of anomalies, errors, and fraudulent activities [7, 10].

Given the rapid rise of big data and the widespread automation of client accounting systems, CAATs have shifted from being merely supplementary aids to becoming indispensable necessities for modern auditing. They achieve this by enhancing the auditor's analytical capabilities, improving testing precision, and significantly decreasing overall audit risk [5].

Moreover, CAATs help minimize the occurrence of human-related errors and reduce the time required to complete the audit cycle, consequently freeing auditors to concentrate their expertise on high-value activities, such as performing complex analytical reviews and applying professional judgment [7].

Despite the clear and compelling advantages CAATs offer for improving both audit quality and efficiency, academic research consistently points to low adoption rates in certain markets, particularly in

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developing economies like Indonesia. This adoption deficit is often attributed to several internal obstacles within firms, including limited technical expertise, insufficient training programs, and a lack of supportive organizational infrastructure [6]. Therefore, to fully unlock the potential of these powerful tools, auditors must not only possess the necessary technical skills but also demonstrate the crucial willingness to embrace technological change [12].

Audit firms that fail to establish continuous professional training and effective change management strategies frequently find it difficult to sustain digital auditing practices. Ultimately, the successful deployment of CAATs is shown to be equally reliant on human factors, technological suitability, and robust institutional support.

2.3. The Effect of Technological Context on CAATs Adoption in Public Accounting Firms

With the aid of technology, the operational environment directly affects the adoption of computer-aided audit techniques in a positive way. Among the various adoption drivers, perceived usefulness is the one that has the most significant influence, as it turns out that auditors prefer to rely on tools that allow them to improve the accuracy of their audits, reduce errors, and gain valuable insights into the clients' operations.

Such qualities as fraud detection efficiency, time savings, and the ability to be easily integrated into the audit process are specifically appealing features to practitioners [11]. In contrast, the complicated nature of the tools and the issue of incorporating them into the already existing systems are seen as the major contributors to the failure of the adoption of the technology [7].

Lots of audit firms, particularly small and medium-sized ones, do not have the right skills and technical support to deal with the situation; they will be underperforming if technology is otherwise effective [21]. The implementation of a Computer-Aided Audit Tool in an efficient and effective manner is therefore achievable only if, in addition to the right tools, the user interfaces are user-friendly, and the support systems are robust.

H_1: Technological context significantly affects the adoption of CAATs in public accounting firms in Indonesia.

2.4. The Effect of Organizational Context on CAAT Adoption in Public Accounting Firms

The organizational context is the primary internal determinant of a public accounting firm's ability to adopt and successfully utilize Computer-Assisted Audit Techniques (CAATs). This readiness is driven by essential elements like the firm's available financial and technological resources, which are necessary for the initial investment and subsequent maintenance of sophisticated CAAT software. Crucially, the commitment and active support of top management (the firm's partners) is indispensable, as it not only ensures the strategic allocation of resources but also fosters the necessary organizational culture to embrace digital transformation [20]. Without this supportive organizational foundation, and particularly the appropriate cultural alignment, the firm risks purchasing powerful technology that will ultimately remain underutilized, thereby hindering audit quality and efficiency [22].

H2: Organizational context significantly affects the adoption of CAATs in public accounting firms in Indonesia.

2.5. The Effect of Environmental Context on CAAT Adoption in Public Accounting Firms

The environmental context comprises external pressures and opportunities that influence an organization's decision to adopt new technology. These include regulatory mandates, market competition, and client expectations [6, 8]. In the audit sector, regulators are increasingly demanding transparency, accountability, and the use of technology to strengthen audit reliability. Consequently, many audit firms view CAAT adoption as a strategic response to these external expectations. Competition among firms also acts as a major driver. Firms that employ advanced digital tools tend to achieve faster turnaround times and more comprehensive analyses, giving them a competitive edge [23].

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Clients, in turn, are becoming more sophisticated, expecting their auditors to utilize technology to provide deeper insights and more data-driven assurance [6]. In this way, the environment exerts both direct and indirect pressure on firms to innovate. Environmentalism in developing economies, such as those by Rosli et al. [17] and Lestari et al. [23], shows that environmental influences may not always result in adoption, especially when internal readiness is lacking. Regulatory enforcement is often weak, and competitive pressures are not yet strong enough to compel smaller firms to digitize. As a result, while environmental factors create awareness and external motivation, the actual decision to adopt CAATs depends heavily on the internal technological and organizational conditions of the firm.

H_3: Environmental context significantly affects the adoption of CAATs in public accounting firms in Indonesia.

2.6. The Impact of CAAT Adoption on the Improvement of Audit Quality in Public Accounting Firms

The main goal of adopting CAATs is to improve audit quality by enabling better data analysis, enhancing fraud detection, and supporting more accurate decision-making [24]. Through automation and analytic capabilities, CAATs allow auditors to test entire datasets, identify outliers, and evaluate risk patterns that may not be visible through traditional audit methods [10].

These features significantly enhance the reliability and credibility of audit outcomes. Empirical studies indicate that firms using CAATs experience improvements in both efficiency and effectiveness. For instance, Nugroho et al. [25] found that implementing CAATs in auditing enables auditors to conduct financial statement reviews more efficiently and accurately while improving their ability to detect material misstatements. Similarly, Meiryani et al. [12] observed that auditors perceive CAATs as tools that increase accuracy and reduce audit time, thus improving overall audit quality. However, these benefits can only be realized when auditors possess adequate training, and management provides sufficient support for implementation [7].

In Indonesia, where many audit firms are still only starting out in transforming digitally, CAAT adoption not only supports audit effectiveness but also contributes to rebuilding public trust in the accounting profession [12]. By aligning technological capabilities with ethical and regulatory standards, CAATs strengthen transparency, accountability, and stakeholder confidence. Therefore, under the TOE framework, CAAT adoption emerges as a holistic approach to improving audit performance through the combined influence of technology, organization, and environment.

H_4: The adoption of CAATs significantly impacts audit quality in public accounting firms in Indonesia.

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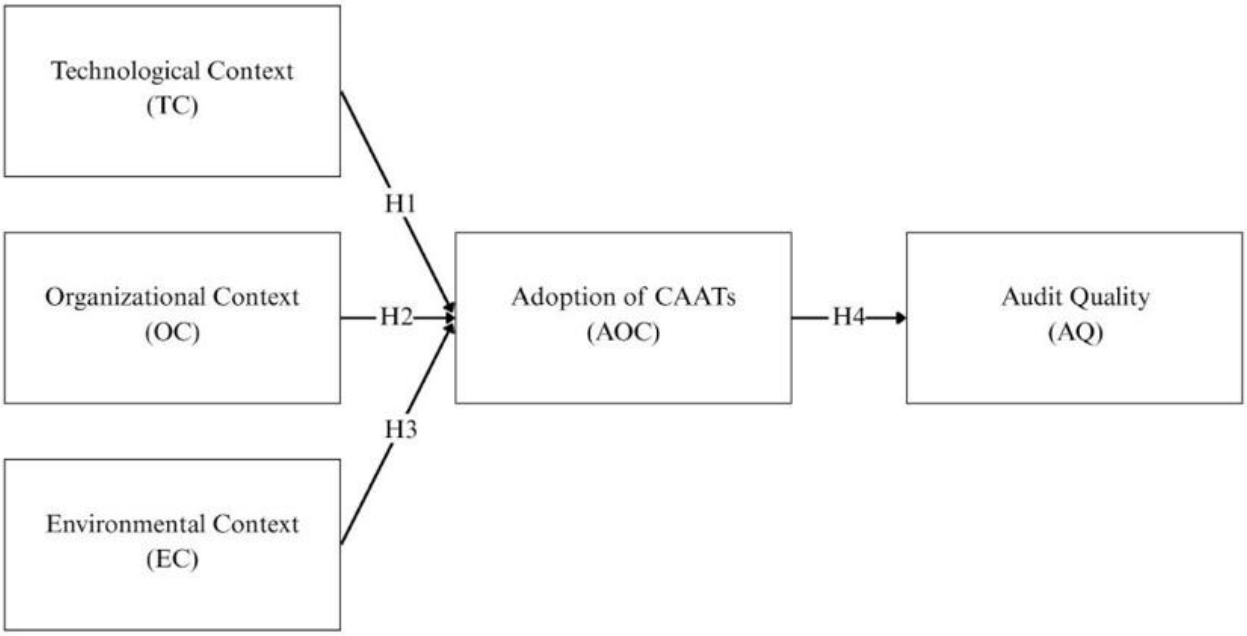

Figure 1.
Research Framework.

3. Research Methodology

3.1. Research Method

This study uses quantitative research methods. Quantitative research employs data and numbers to test hypotheses and examine the relationships between variables. The goal is to produce results that can be generalized and to predict future outcomes, typically through structured experiments, surveys, or observations [26].

In this study, questionnaires will be distributed to measure relevant variables and hypotheses as primary data. Participants will be able to access and complete the questionnaire, which will be shared electronically via Google Forms.

The questionnaire will utilize a six-point Likert scale, where the number 6 corresponds to "strongly agree" and the number 1 to "strongly disagree." The use of an even-numbered Likert scale is classified as a forced-choice scale, which intentionally removes a neutral midpoint from the scale. This method aims to reduce the bias of central tendency, encouraging participants to express their opinions more clearly [27].

This is used to assess variables in the study, such as technological context, organizational context, environmental context, adoption of CAATs, and audit quality.

Furthermore, the decisions on how many participants to use and the type of scale to use for measurement were basically derived from methodological considerations of the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. PLS-SEM was the model resulting from its robustness in dealing with small sample sizes and its appropriateness for studying complicated and exploratory models.

The most up-to-date version of SmartPLS software, SmartPLS 4, will be adopted to maximize the effectiveness of the tool [28]. The research will begin with a descriptive statistical analysis, followed by an evaluation of data quality and measurement models. Finally, hypothesis testing will be conducted, including the calculation of R-squared values and partial t-tests to assess the significance of the relationships between constructs.

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In determining an appropriate sample size, this study draws upon Roscoe's rule of thumb, which has long been referenced in behavioral and social science research.

Roscoe suggests that sample sizes between 30 and 500 participants are generally suitable for most types of studies [29]. In cases involving multivariate analysis, particularly approaches like Partial Least Squares Structural Equation Modeling (PLS-SEM), it is often suggested that researchers use a sample size that is at least ten times the number of indicators for the most complex latent construct in their model [30].

In this study, the constructions with the highest number of indicators are Technological Context, Organizational Context, and Environmental Context, each comprising six measurement items. Therefore, the minimum sample size based on the "10-times rule" would be [31]: Minimum sample size $=10\times6 = 60$ respondents.

However, to enhance statistical reliability and ensure the robustness of the model estimation in PLS-SEM, the researcher decided to collect data from at least 100 respondents [30]. This approach aligns with best practices in SEM research and helps to address potential issues such as incomplete responses or non-normal data distributions. Consequently, the chosen sample size is considered adequate for meeting both practical and statistical considerations in this study.

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Table 1.
Operation of Variable.

Operation Variables		
Variable	**Main Indicator**	**Source**
Technological Context (TC)	1. CAATs help during the audit process by reducing mistakes. 2. CAATs will make the audit firm more efficient. 3. CAATs are useful for auditors in their audit tasks. 4. CAATs work well with the firm's existing audit methods. 5. The benefits of using CAATs are greater than the initial cost. 6. CAATs fit well with the firm's current work processes.	Ramen et al. [13] and Rosli et al. [17]
Organizational Context (OC)	1. Our employees are knowledgeable in using the results generated by CAATs. 2. Employees possess the skills needed to carry out CAATs implementation effectively. 3. Top management allocates funds for CAATs adoption to improve audit quality. 4. Top management actively supports the use of CAATs in audit tasks. 5. The firm has financial resources for CAATs implementation. 6. The firm has systems in place to support CAATs adoption.	Ramen et al. [13]; Rosli et al. [17] and Handoko [32]
Environmental Context (EC)	1. Without CAATs, our firm would have fallen behind competitors. 2. Competitors using CAATs have gained notable advantages. 3. Most clients manage large accounting transactions. 4. Many clients have complex financial reporting systems. 5. The CAATs provider advises on its benefits. 6. The CAATs provider trains audit staff for effective use.	Ramen et al. [13] and Rosli et al. [17]
Adoption of CAATs (AOC)	1. Auditors are prepared to incorporate CAATs into their daily audit tasks. 2. Auditors frequently apply CAATs in their audit tasks. 3. The firm's audit platforms are equipped to integrate CAATs.	O'Dwyer and Bernauer [26] and Bierstaker et al. [18]
Audit Quality (AQ)	1. CAATs will improve understanding of the entity's operations. 2. CAATs will enable thorough risk assessment of large groups. 3. Automating tasks with CAATs frees up time for more complex decisions.	Musa and Lefkir [24]

4. Result and Discussion

4.1. Identity of Respondents

Through the use of digital professional platforms, the questionnaire was distributed, and a total of 115 respondents were gathered. Referring to Table 2, it was found that most respondents were male and relatively young, with the majority being 30 years old or younger. In terms of their positions, the largest group by far was Associate Auditors.

Table 2.
Identity of Respondents.

Gender	Amount	Age	Amount	Position	Amount	Work Experiences	Amount
Male	77	21 - 30 Years	98	Associate Auditor	73	1-5 Years	98
Female	38	31 - 40 Years	12	Senior Associate Auditor	25	6-10 Years	7
		41 - 50 Years	2	Manager/Supervisor Auditor	11	10-15 Years	5
		>50 Years	3	Partner	6	>15 Years	5

4.2. Outer Model Test

To evaluate the measurement model, the outer loadings for each indicator were reviewed. These values indicate the extent to which an indicator aligns with its latent construct, confirming its consistency in representing the construct.

Following the established criterion by Ghozali [33], the loadings above 0.7 indicate a strong representation and should be kept in the model. Furthermore, a loading falling in the 0.50 to 0.7 range is typically deemed adequate, whereas a value below 0.50 suggests the indicator is a poor representation of the construct and therefore should be removed from the model [34].

As shown in Table 3, the outer model test confirmed that all outer loading values surpassed the 0.50 threshold, with the lowest value recorded at 0.572 (EC1). Consequently, all indicators were deemed reliable and were utilized in the further stages of analysis.

Table 3.
Outer Model Test.

Indicator	Outer Loading	Indicator	Outer Loading	Indicator	Outer Loading	Indicator	Outer Loading	Indicator	Outer Loading
AOC1	0.860	AQ1	0.843	EC1	0.572	OC1	0.769	TC1	0.763
AOC2	0.906	AQ2	0.890	EC2	0.718	OC2	0.724	TC2	0.715
AOC3	0.846	AQ3	0.853	EC3	0.746	OC3	0.809	TC3	0.774
				EC4	0.693	OC4	0.869	TC4	0.828
				EC5	0.793	OC5	0.849	TC5	0.720
				EC6	0.748	OC6	0.842	TC6	0.775

4.3. Validity and Reliability Test

To ensure confidence in the measurements, researchers must test for convergent validity. This process ensures that the various survey items assigned to the variables are in agreement, collectively forming a reliable and accurate gauge of the concept. Following the standards established by Hair et al. [35] two main metrics were tested. The Average Variance Extracted (AVE) confirms that a construct explains more than half the variance in its questions, with a threshold of higher than 0.50, while Composite Reliability checks for internal consistency with a threshold of higher than 0.70. All our constructs scored well above these minimums, confirming their reliability for our analysis, as can be seen from Table 4.

Table 4.
Convergent Validity.

Variable	Composite Reliability (Rho-C)	Average Variance Extracted (AVE)
AOC	0.904	0.759
AQ	0.897	0.744
EC	0.861	0.511
OC	0.920	0.660
TC	0.893	0.583

The analysis of discriminant validity relies on the Heterotrait-Monotrait (HTMT) ratio, with the results displayed in Table 5. The established benchmark from Henseler et al. [36] suggests that HTMT values should remain below 0.90 to confirm that each construct measures a truly distinct concept.

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In this study, all HTMT values range from 0.586 to 0.860, falling within the acceptable threshold. This confirms that the constructs are distinct and do not overlap significantly. Although the values between AQ–EC (0.844) and AQ–TC (0.860) approach the threshold, they remain within acceptable limits, demonstrating adequate discriminant validity for the model.

Table 5.
Heterotrait-Monotrait Ratio.

Variable	AOC	AQ	EC	OC	TC
AOC					
AQ	0.784				
EC	0.689	0.844			
OC	0.826	0.727	0.647		
TC	0.701	0.860	0.695	0.586	

4.4. Coefficient Determination Test

Table 6 presents the R-squared (R^2) and adjusted R-squared values, which indicate how well the model explains the variance in the dependent variables. The R^2 value shows the proportion of variance explained, while the adjusted R^2 provides a more conservative estimate that accounts for the number of predictors.

For the adoption of CAATs (AOC), the independent variables explain approximately 60% of the variance (R^2 = 0.605). For audit quality (AQ), the model explains about 43% of the variance (R^2 = 0.432). According to Hair et al. [35], these values suggest the model demonstrates moderate to substantial explanatory power. The close alignment between R^2 and adjusted R^2 values further supports the reliability of these findings.

Table 6.
Coefficient of Determination.

Variable	R-Square	R-Square Adjusted
AOC	0.605	0.594
AQ	0.432	0.427

4.5. Hypothesis Testing

The results of the path analysis in this study are displayed in Figure 2, while a summary of the hypothesis testing can be seen in Table 7. A hypothesis is deemed significant if the t-statistic value exceeds 1.96 or the p-value is below 0.05 in a two-tailed test [31]. This criterion indicates that the relationship between constructs in the model has been statistically supported.

The analysis shows strong support for most of the proposed relationships. The path from AOC to AQ (H1) is highly significant (β = 0.657, t = 9.584, p = 0.000), confirming that a stronger audit organizational culture has a powerful, positive effect on audit quality. Similarly, both Organizational Context (H3: β = 0.505, t = 6.558, p = 0.000) and Technological Context (H4: β = 0.269, t = 2.762, p = 0.006) show significant positive effects on AOC, indicating they are key drivers in building that culture.

In contrast, the data do not support the link from Environmental Context to AOC (H2: β = 0.132, t = 1.215, p = 0.224). This result suggests that external pressures from the environment do not play a significant role in shaping the audit culture within the firms studied.

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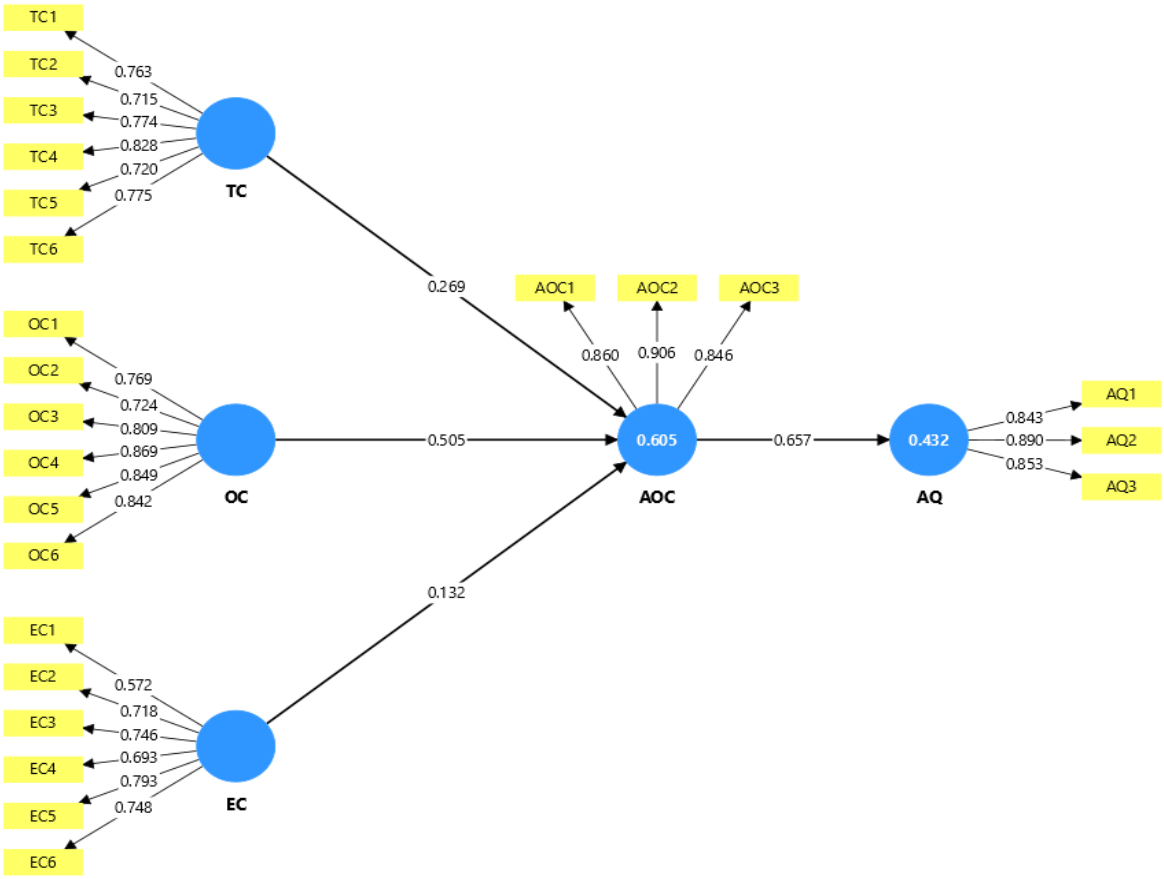

Figure 2.
Path Coefficient.

Table 7.
Hypothesis Testing.

Hypothesis	Original Sample	T Statistics	P Values
H1: TC -> AOC	0.269	2.762	0.006
H2: OC -> AOC	0.505	6.558	0.000
H3: EC -> AOC	0.132	1.215	0.224
H4: AOC -> AQ	0.657	9.584	0.000

5. Conclusion and Suggestion

Based on the analysis conducted in Chapter 4, this study concludes that the technological and organizational contexts significantly influence the implementation of Computer-Assisted Audit Techniques, which in turn positively impact audit quality. Meanwhile, the environmental context did not show a significant influence.

This suggests that the decision to adopt CAATs by auditors in Indonesia is more influenced by internal factors, such as technological readiness, management support, and resource availability, rather than external factors such as competitive pressure or client demand.

All constructs within the TOE framework are interrelated, suggesting that technology readiness and strong internal support can drive more effective technology adoption.

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The technological context encourages auditors to adopt CAATs by providing a usable, compatible, and efficient system, while the organizational context strengthens this relationship through management commitment, adequate resource availability, and ongoing training.

In contrast, the environmental context, which discusses external factors such as competition and client pressure, was not found to have a strong influence, suggesting that Indonesian public accounting firms rely more on internal readiness than external pressure in adopting audit technology.

Furthermore, the use of CAATs makes the audit process more efficient, accurate, and effective in detecting errors and conditions, resulting in more reliable and high-quality audit reports.

This study focuses on the use of CAATs in the auditing sector, but the results are not limited to this industry. The conclusions obtained can also serve as a reference for organizations in other sectors adapting to digital transformation or seeking to improve data-driven decision-making processes. Therefore, this research can be a useful reference for organizations seeking to strengthen performance and quality using technology.

This study confirms that adopting CAATs does enhance audit quality, yet the TOE framework alone cannot fully explain this dynamic. Other elements beyond its scope likely shape this relationship. Future research should, therefore, consider variables like an auditor's digital literacy, the organization's culture of innovation, or their technological self-efficacy.

Investigating these areas could yield a deeper understanding of the behavioral and cultural drivers behind technology adoption in auditing. Other factors, such as a client's own digital maturity or their awareness of cybersecurity issues, also warrant examination. These would help capture the critical external and risk-related dimensions of modern, digital auditing.

Furthermore, expanding the sample scope or employing qualitative methods in future work could illuminate how auditors practically adapt to technological change. Such approaches could uncover fresh perspectives on the challenges and enablers of CAAT adoption, clarifying how digital transformation continues to redefine the very meaning of audit quality.

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Transparency:
The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

Data Availability:
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