

ANTECEDENT AND CONSEQUENCES OF CAAT ON AUDIT QUALITY

Nahdho Ibnu Daham*
Marita Kusuma Wardani

Universitas Islam Negeri Raden Mas Said Surakarta, Jl. Pandawa, Kabupaten Sukoharjo, Jawa Tengah, Indonesia
*nahdho.d.ibnu@gmail.com

ARTICLE INFO

Article history:

Received February 25, 2026

Revised April 13, 2026

Accepted May 03, 2026

Keywords:

Computer Assisted Audit
Techniques; Technology
Acceptance Model; Audit Quality

DOI:

<https://doi.org/10.33508/jako.v18i2.8340>

ABSTRACT

Research Purposes. This study examine how perceived usefulness and perceived ease of use, as the core dimensions of the Technology Acceptance Model (TAM), influence auditors' actual use of Computer-Assisted Audit Techniques (CAAT) and how such usage affects audit quality.

Research Methods. This study employs a quantitative approach using Partial Least Squares Structural Equation Modeling (PLS-SEM) based on data collected through a questionnaire survey of 72 external auditors from Non-Big Four public accounting firms in Indonesia.

Research Results and Findings. The results indicate that perceived usefulness and perceived ease of use have a positive effect on the actual use of CAAT, perceived ease of use positively influences perceived usefulness, and the actual use of CAAT positively affects audit quality. These findings imply that increasing auditors' acceptance of CAAT through improving usability and perceived benefits can enhance audit quality, contributing to the development of auditing practices and literature, particularly in the context of Non-Big Four firms.

ABSTRAK

Tujuan Penelitian. Penelitian ini bertujuan untuk menganalisis pengaruh perceived usefulness dan perceived ease of use sebagai dimensi utama Technology Acceptance Model (TAM) terhadap penggunaan aktual Computer-Assisted Audit Techniques (CAAT) oleh auditor serta dampaknya terhadap kualitas audit.

Metode Penelitian. Penelitian ini menggunakan pendekatan kuantitatif dengan metode Partial Least Squares Structural Equation Modeling (PLS-SEM) berdasarkan data kuesioner dari 72 auditor eksternal pada Kantor Akuntan Publik Non-Big Four di Indonesia.

Hasil dan Temuan Penelitian. Hasil penelitian menunjukkan bahwa perceived usefulness dan perceived ease of use berpengaruh positif terhadap penggunaan aktual CAAT, perceived ease of use berpengaruh positif terhadap perceived usefulness, serta penggunaan aktual CAAT berpengaruh positif terhadap kualitas audit. Temuan ini mengindikasikan bahwa peningkatan penerimaan auditor terhadap CAAT melalui kemudahan penggunaan dan manfaat yang dirasakan dapat meningkatkan kualitas audit serta memberikan kontribusi pada pengembangan praktik dan literatur audit, khususnya pada Kantor Akuntan Publik Non-Big Four.

INTRODUCTION

Despite the increasing availability of Computer-Assisted Audit Techniques (CAAT), their adoption among Non-Big Four auditors in Indonesia remains limited, creating a critical gap between technological potential and actual audit practice. This gap is particularly important because CAAT offers measurable advantages over manual methods, enabling auditors to test data, analyze large datasets, and detect financial statement anomalies more accurately and comprehensively (Rachmad et al., 2023; Wassie & Lakatos, 2025). However, these advantages alone have not been sufficient to drive widespread adoption in practice (Serpeninova et al., 2020; Vitali & Giuliani, 2024). The persistence of low adoption suggests that the barrier is not primarily technical, but perceptual. Auditors' beliefs about whether CAAT is useful and easy to use are more decisive in determining adoption than the mere availability of the technology itself (Jackson & Allen, 2024).

To explain this phenomenon, this study adopts the Technology Acceptance Model (TAM) proposed by Davis (1989), which explains technology adoption through two key perceptions: perceived usefulness (PU) and perceived ease of use (PEOU). Both perceptions directly shape auditors' decisions to integrate CAAT into their audit processes. These perceptions operate sequentially: PEOU influences PU, as systems that are easier to use are more readily perceived as useful. Together, they determine whether auditors actually use CAATs in practice. TAM is selected over alternative frameworks such as UTAUT, STS, or TOE because the research question focuses on individual-level cognitive perceptions rather than organizational or environmental factors. UTAUT and TOE are more appropriate for explaining organizational-level adoption decisions, while STS emphasizes broader sociotechnical interactions. In contrast, TAM offers a parsimonious structure in which two key perceptual constructs directly predict behavioral use, making it theoretically suitable when the unit of analysis is the individual auditor operating with limited institutional guidance, as is the case in Non-Big Four settings.

Empirical evidence supports this relationship. Auditors who perceive CAAT as useful are more motivated to use it for comprehensive data testing and anomaly detection (Al-Ateeq et al., 2022; Pedrosa et al., 2020), while user-friendly systems enhance perceived ease and encourage adoption (Susanto et al., 2023). The central question, therefore, is not whether CAAT is technically available, but whether auditors' perceptions of its usefulness and ease of use are sufficient to translate into actual usage and whether that usage subsequently improves audit quality.

A substantial body of prior research has applied TAM and related frameworks to examine technology adoption in auditing. However, despite this extensive literature, three critical gaps remain unresolved. First, existing studies predominantly treat behavioral intention as the endpoint, without explicitly modeling how PU and PEOU translate into actual CAAT usage and how that usage subsequently affects audit quality. This leaves the full perceptual, behavioral, and outcome chain implicit rather than empirically tested (Deniswara et al., 2023; Purnamasari et al., 2022; Septari et al., 2025). Second, studies examining the relationship between CAAT usage and audit quality report inconsistent findings. Some find positive effects (Rachmad et al., 2023; Sari & Kurniawati, 2021), while others find no significant impact (Meiryani et al., 2021), links to audit delays (Iryani et al., 2025), or the limited influence of PEOU among skeptical auditors (Mahardika et al., 2025). These inconsistencies suggest that the relationship between CAAT usage and audit quality is more conditional and context-dependent than previously assumed.

Third, and most critically, the mechanism through which TAM constructs drive CAAT adoption and audit quality has not been explicitly tested within Non-Big Four public accounting firms in Indonesia. In such settings, where organizational support, infrastructure, and training resources are more constrained, individual perceptions may play a more decisive role in shaping technology adoption (Jackson & Allen, 2024; Sinaga, 2024). What remains unanswered, therefore, is whether PU and PEOU are sufficient to drive actual CAAT usage in this environment and whether such usage translates into meaningful improvements in audit quality.

This study addresses these gaps by explicitly modeling the full mechanism. PU and PEOU act as antecedents of actual CAAT usage, while actual CAAT usage acts as the mediating mechanism linking auditors' perceptions to audit quality outcomes. Once CAAT is actively utilized, its capabilities contribute to improvements across multiple dimensions of audit quality, including timeliness through automated procedures, accuracy through reduced manual error, objectivity through independent data analysis, and effectiveness through population-level data coverage (Rachmad et al., 2023; Susilawati & Munawarah, 2023; Vitali & Giuliani, 2024; Wassie & Lakatos, 2025). By making this mechanism explicit, this study provides a structured empirical explanation of how individual-level technology acceptance translates into professional audit performance.

The relevance of this mechanism is particularly pronounced in the Indonesian Non-Big Four context. In this environment, auditors' perceptions of usefulness and ease of use are not strongly shaped by advanced infrastructure or institutional support, but instead emerge from individual experience and direct interaction with technology. As a result, the TAM mechanism becomes both more fragile and more consequential. When auditors perceive CAAT as complex or insufficiently beneficial, adoption remains limited regardless of its availability. This is reflected in the continued reliance on Microsoft Excel among Indonesian auditors, not due to a lack of awareness of more advanced tools, but due to perceptions of complexity and unfamiliarity (Deniswara et al., 2023; Sinaga, 2024). Understanding how these perceptions operate and whether they are sufficient to drive meaningful CAAT usage and audit quality improvements is therefore both theoretically and practically important.

This study contributes to the literature in two specific ways. First, it provides empirical evidence of the full TAM mechanism in the audit context, from PU and PEOU through actual CAAT usage to audit quality outcomes, thereby clarifying a theoretically grounded mechanism that prior studies have examined only partially or implicitly (Meiryani et al., 2021; Sinaga, 2024). Second, it offers contextual evidence on how TAM operates within Non-Big Four public accounting firms in Indonesia, where individual perceptions play a more decisive role due to limited organizational and technological support. The novelty of this study is therefore not theoretical, but contextual and empirical. It demonstrates how a well-established model operates within a resource.

LITERATURE REVIEW

Technology Acceptance Model (TAM)

TAM, first introduced by Davis (1989) and grounded in the Theory of Reasoned Action (TRA), provides a parsimonious yet robust framework for explaining how individuals decide to adopt and use new information systems. The model posits that two cognitive perceptions, PU and PEOU, are the primary determinants of behavioral intention and actual system use. Within TAM, PEOU influences PU directly, as a system that requires minimal effort is more likely to be perceived as beneficial, and both perceptions jointly shape the individual's attitude toward the system and their decision to use it in practice (Davis, 1989).

TAM has been validated extensively across diverse technological and professional contexts, including accounting information systems, enterprise resource planning, and mobile applications (Venkatesh & Davis, 2000; King & He, 2006; Legris et al., 2003), demonstrating its generalizability as an explanatory framework for technology adoption behavior. More recent studies in auditing and data analytics contexts further confirm the applicability of TAM in explaining auditors' adoption of advanced technologies such as CAAT and big data analytics (Abu Al Rob et al., 2024a, 2024b; Jayanti et al., 2025). These developments underscore that TAM remains a robust and widely applicable framework for understanding technology adoption across both general and professional audit settings.

In the auditing context, TAM is particularly relevant because audit work demands high standards of evidence, procedural accuracy, and time efficiency, which are qualities that CAAT is designed to support. When auditors perceive CAAT as capable of enhancing these dimensions of their work through perceived usefulness, and as sufficiently straightforward to operate under time-pressured conditions through PEOU, TAM predicts that they will incorporate CAAT into their audit procedures. Critically, this study extends the standard TAM application by tracing the full mechanism from auditors' perceptions, including PU and PEOU, through their actual use of CAAT, to the downstream effect on audit quality outcomes.

Prior TAM-based studies in auditing have primarily examined either the antecedents of adoption or usage behavior without tracing downstream audit outcomes (Al-Ateeq et al., 2022; Pedrosa et al., 2020). In contrast, studies that examine the effect of CAAT on audit quality often do so without grounding the mechanism in TAM or a comparable behavioral framework (Meiryani et al., 2021; Septari et al., 2025). This separation between antecedents and outcomes has led to a fragmented understanding of how auditors' perceptions translate into performance outcomes, a limitation this study directly addresses by explicitly modeling the complete sequence linking perception, behavior, and outcomes within a single integrated framework.

Perceived Usefulness (PU)

Davis (1989) defines PU as the degree to which an individual believes that adopting a specific system will enhance their work effectiveness and job performance. Building on this, Peng & Robinson-Tay (2025) further describe PU as the degree to which individuals believe that utilizing a particular technology yields substantial benefits, especially in terms of enhancing work efficiency, productivity, and the achievement of organizational goals. In the audit context, PU captures auditors' beliefs about whether CAAT can improve the efficiency, accuracy, and comprehensiveness of their audit procedures, including accelerated population data testing, enhanced anomaly detection, and more systematic documentation (Vitali & Giuliani, 2024).

PU within TAM occupies a central explanatory role as the primary cognitive mechanism through which auditors translate awareness of CAAT capabilities into an intention to use them. However, empirical evidence on this relationship is not uniformly positive, as some studies report mixed findings, suggesting that the strength of PU's influence on adoption behavior may vary depending on contextual factors such as firm size, technological readiness, and individual auditor characteristics (Fiona et al., 2024). This mixed evidence

further reinforces the need to examine the PU-adoption relationship within a specific and underexplored context such as Non-Big Four public accounting firms in Indonesia.

Across broader professional settings, the positive influence of PU on technology adoption is nonetheless well-documented (Abu Al Rob et al., 2024b, 2025a; Venkatesh & Bala, 2008). In audit-specific contexts, auditors who perceive CAAT as genuinely useful for improving audit performance are more likely to integrate it into their regular audit procedures (Al-Ateeq et al., 2022; Pedrosa et al., 2020). This pattern confirms that PU remains a robust and theoretically central predictor of actual technology use, even as its magnitude may vary across different audit environments.

Perceived Ease of Use (PEOU)

PEOU refers to the degree to which an individual believes that using a system requires minimal cognitive and physical effort (Davis, 1989). More recently, Chen et al. (2025) define PEOU as a person's evaluation of how simple it is to understand, operate, and use a technology efficiently with few barriers or challenges. This assessment is reflected in three operational indicators: the ability to learn the technology with minimal effort, the capacity to operate it competently, and the perception that it is simple and convenient to use.

In professional audit settings, PEOU is particularly consequential because auditors operate under deadline pressures and accountability demands, conditions under which any technology perceived as complex or burdensome tends to be avoided in favor of familiar tools (Meiryani et al., 2021). PEOU influences actual CAAT usage through two theoretically distinct pathways: directly, by reducing adoption barriers and making auditors more willing to use CAAT in daily work; and indirectly, by strengthening PU, since a system that is easy to use allows auditors to experience its benefits more quickly and with lower learning costs (Davis, 1989; Venkatesh & Davis, 2000). Both pathways have been empirically supported across technology adoption studies in auditing and related fields (Abu Al Rob et al., 2024b, 2025a; Venkatesh & Bala, 2008).

Computer-Assisted Audit Techniques (CAAT)

CAAT encompasses a range of technology-based audit methods, including generalized audit software, database query tools, test data, and embedded audit modules, designed to enable auditors to test data, analyze information, and detect anomalies in financial records more systematically than manual methods allow (Rachmad et al., 2023; Wassie & Lakatos, 2025). Within the broader information systems literature, TAM is consistently identified as one of the most robust frameworks for explaining actual system use in professional contexts. Empirical studies applying TAM in auditing and data analytics contexts confirm that PU and PEOU remain key determinants of auditors' adoption behavior (Abu Al Rob et al., 2024a, 2024b, 2025b, 2025a; Jayanti et al., 2025).

Empirical evidence in audit-specific settings further demonstrates that CAAT outperforms manual techniques and general-purpose tools such as Microsoft Excel in terms of testing coverage, error detection, and audit efficiency (Serpeninova et al., 2020; Vitali & Giuliani, 2024). However, despite these demonstrated advantages, adoption remains uneven, suggesting that it is not determined solely by technical capability but is strongly influenced by auditors' perceptions of usefulness and ease of use, consistent with the core propositions of TAM (Jayanti et al., 2025; Pedrosa et al., 2020). This pattern confirms that the behavioral dimension of technology adoption, rather than technical availability alone, is the critical determinant of whether CAAT is integrated into audit practice.

This uneven adoption is particularly evident in Non-Big Four firms, where resource constraints, limited IT infrastructure, and varying levels of auditor competence create conditions in which individual-level perceptions become more decisive in shaping technology use decisions. In such environments, the absence of strong organizational support mechanisms amplifies the role of PU and PEOU in determining whether CAAT is adopted and sustained in audit practice (Sinaga, 2024). This contextual condition makes Non-Big Four firms in Indonesia a particularly relevant and informative setting for examining the TAM mechanism in relation to CAAT adoption and audit quality.

Audit Quality

Audit quality reflects the degree to which audit activities comply with applicable auditing standards and quality control procedures, ensuring that financial statements are free of material misstatements and that audit findings are reliable and transparent (DeAngelo, 1981). From a standards-based perspective, audit quality is achieved when the audit process adheres fully to established professional standards (Ikatan

Akuntan Indonesia, 2020), while from an outcomes-based perspective, it encompasses the auditor's ability to detect and report material misstatements, anomalies, and irregularities in the audited entity's financial records (Ginting et al., 2025). In this study, audit quality is operationalized across four dimensions directly relevant to CAAT capabilities: timeliness, reflecting faster completion of audit procedures through automation (Elnahass et al., 2024); accuracy, reflecting reduced calculation and processing errors; objectivity, reflecting independent data analysis without subjective bias (Wang & Liang, 2025); and effectiveness, reflecting comprehensive population testing rather than limited sampling (Rachmad et al., 2023; Sari & Kurniawati, 2021; Susilawati & Munawarah, 2023).

Hypothesis Development

This study applies TAM (Davis, 1989) as its sole theoretical foundation to examine how auditors' perceptions drive CAAT adoption and how that adoption subsequently affects audit quality. TAM posits that two cognitive perceptions, namely perceived usefulness (PU) and perceived ease of use (PEOU), are the primary determinants of behavioral intention and actual system use (Davis, 1989). As illustrated in Figure 1, the original TAM model proposes that PU and PEOU shape attitudes toward using a system which, in turn, influence behavioral intention and actual system use. TAM's broad application across accounting, business, and information systems disciplines confirms its robustness in explaining technology adoption behavior (Gupta et al., 2022; Wicaksono et al., 2023).

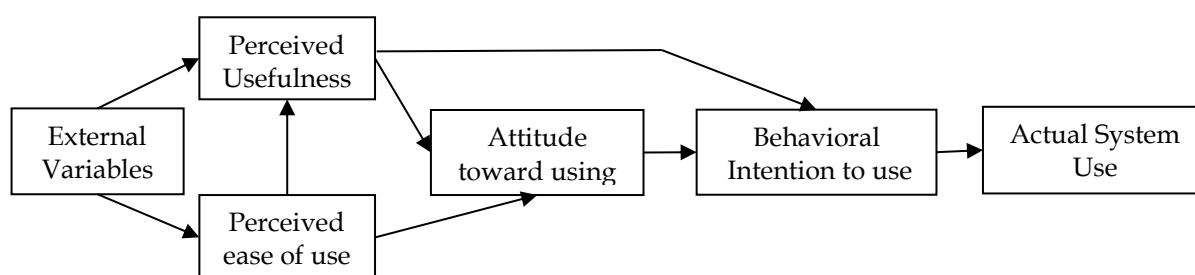


Figure 1. Technology Acceptance Model (TAM)

Source: Davis (1989)

Within the auditing context, the introduction of CAAT requires auditors to assess the system and form perceptions that shape their intention to adopt or reject it. According to Davis (1989), PU refers to an individual's belief that using a specific system improves job performance, while PEOU describes the extent to which an individual believes the system requires minimal physical and mental effort. Critically, Davis (1989) theorizes that PEOU shapes PU, because a system that is easy to use is more likely to be perceived as useful, and that both perceptions can be influenced by external factors such as system design features.

A synthesis of prior evidence reveals that while PU and PEOU are consistently associated with CAAT adoption, and CAAT usage is generally linked to improved audit quality, the complete mechanism connecting these two stages within a single integrated model remains largely untested (Al-Ateeq et al., 2022; Jayanti et al., 2025; Pedrosa et al., 2020). Most prior studies examine either the antecedents of adoption or the consequences of CAAT usage in isolation, without modeling the full chain from perception through behavior to audit quality outcomes. This fragmentation is particularly pronounced in Non-Big Four settings in Indonesia, where the TAM mechanism has not been empirically validated in relation to audit quality. Building on this gap, the present study models the complete mechanism from PU and PEOU through actual CAAT usage to audit quality outcomes, as illustrated in Figure 2.

Perceived Usefulness and Actual Use Of CAAT

Within TAM, PU is the primary cognitive driver of technology adoption, as the belief that a system delivers measurable improvements in work performance is what ultimately motivates individuals to use it in practice beyond mere awareness (Davis, 1989). Auditors who believe CAAT improves the accuracy, efficiency, and comprehensiveness of their work are more likely to incorporate it into routine procedures, including substantive testing, data analytics, and risk assessment (Al-Ateeq et al., 2022; Pedrosa et al., 2020; Vitali & Giuliani, 2024). While Jayanti et al. (2025) found PU non-significant in a mixed Indonesian sample,

this study argues that in Non-Big Four firms, where auditors have fewer institutional defaults to advanced tools, PU may play a more decisive role in motivating adoption (Abu Al Rob et al., 2025a)

H₁: *Perceived Usefulness has a positive influence on Actual Use of CAAT*

Perceived Ease of Use of CAAT and Actual Use Of CAAT

PEOU influences actual CAAT usage directly by lowering adoption barriers, as auditors working under deadline and accountability pressures are more willing to use tools they find straightforward to operate and more likely to avoid tools perceived as complex or technically demanding (Davis, 1989; Meiryani et al., 2021). Ease of use is consistently associated with greater frequency of CAAT utilization, particularly for repetitive, data-intensive procedures (Kartikasary et al., 2021; Susanto et al., 2023). In Non-Big Four settings where training resources are limited, PEOU may be especially decisive in determining whether auditors integrate CAAT into practice or default to familiar manual tools (Sinaga, 2024).

H₂: *Perceived Ease of Use of CAAT has a positive influence on Actual Use Of CAAT*

Perceived Ease of Use and Perceived Usefulness

TAM theorizes that PEOU is a cognitive antecedent of PU because a system that requires minimal effort allows auditors to experience its benefits more directly and with lower learning costs, thereby strengthening their belief in its usefulness (Davis, 1989; Venkatesh & Bala, 2008). When auditors find CAAT intuitive to operate, they more readily observe its advantages in terms of accelerated testing, improved accuracy, and broader data coverage, which in turn reinforces their PU perceptions. This relationship has been empirically confirmed across audit and IS contexts (Abu Al Rob et al., 2024b; Aulia & Rochmatullah, 2024; Jayanti et al., 2025).

H₃: *Perceived Ease of Use of CAAT has a positive influence on Perceived Usefulness of CAAT*

Actual Use Of CAAT and Audit Quality

When auditors actively use CAAT, its technical capabilities directly enhance audit quality across four dimensions: automated testing improves timeliness; population-level analysis improves accuracy; algorithmic processing strengthens objectivity; and comprehensive data coverage enhances effectiveness (Sari & Kurniawati, 2021; Susilawati & Munawarah, 2023). Empirical evidence across diverse audit settings confirms that CAAT usage significantly improves audit quality (Rachmad et al., 2023; Serpeninova et al., 2020; Vitali & Giuliani, 2024), establishing actual use as the mechanism through which the TAM chain produces measurable professional outcomes. This endpoint is precisely what prior TAM-based studies have consistently left untested, particularly within Non-Big Four public accounting firms in resource-constrained settings (Abu Al Rob et al., 2024a; Al-Ateeq et al., 2022).

H₄: *Actual Use Of CAAT has a positive influence on Audit Quality*

Research Model

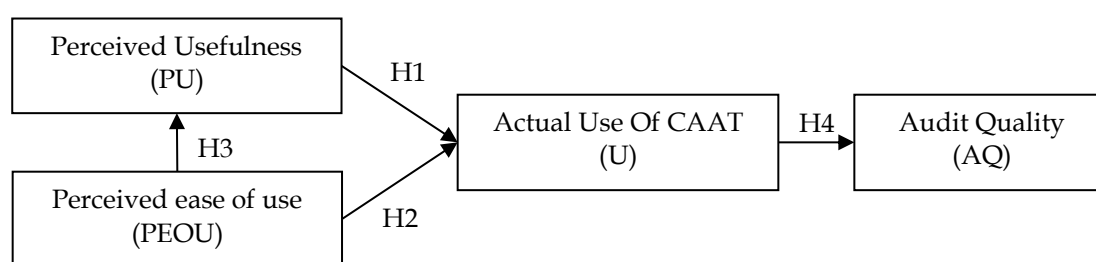


Figure 2. The Conceptual Framework

RESEARCH METHODS

This study employs a quantitative approach to examine the associative relationships between perceived usefulness of CAAT (PU), perceived ease of use of CAAT (PEOU), actual use of CAAT (U), and audit quality (AQ). Given that the research design is cross-sectional and perception-based, this study does not claim causal inference but instead examines the directional associations between constructs as theorized by TAM (Davis, 1989). Specifically, the study analyzes the associations between PU and PEOU and actual use of CAAT, as well as between actual use of CAAT and audit quality. Data were collected using a structured questionnaire

distributed to external auditors working in Non-Big Four public accounting firms located in Yogyakarta and Central Java. The questionnaire consists of two main sections: the first gathers respondents' demographic and professional information, while the second measures the core research constructs using a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree").

Population and Sample

The study's population comprises auditors employed at Non-Big Four public accounting firms operating in the Central Java and Yogyakarta regions of Indonesia. Purposive sampling was employed, with respondents selected based on predetermined criteria aligned with the study's objectives (Sugiyono, 2021). The criteria for sample selection include auditors with at least one year of experience at a Non-Big Four public accounting firm, sufficient knowledge of CAAT and audit quality, and willingness to participate in this research.

Because the total population size cannot be precisely identified, this study applies Roscoe's guideline to determine the minimum required sample size, which recommends a minimum of 10 times the number of variables in the research model, with the total falling within the range of 30 to 500 respondents (Meiryani et al., 2021). Considering that the research model includes four variables, the minimum required sample is 40 respondents. The final sample of 72 respondents exceeds this threshold and is consistent with prior PLS-SEM studies in auditing contexts that have operated with similar sample sizes (Hair et al., 2019; Rachmad et al., 2023). The questionnaire was distributed in January 2026 by visiting the offices of participating public accounting firms and collected within one month, yielding 72 usable responses from 78 distributed questionnaires, representing a response rate of 92.31%.

Research Variables

This study uses primary data collected via a questionnaire to assess each research construct. All variables, including audit quality, are measured using perceptual indicators adapted from validated instruments in prior studies, which is consistent with established practice in behavioral audit research where auditors' subjective assessments of technology use and audit outcomes are recognized as theoretically meaningful and empirically appropriate measures (Al-Ateeq et al., 2022; Meiryani et al., 2021). PU reflects auditors' assessments of the extent to which CAAT enhances audit performance, while PEOU captures auditors' evaluations of how simple it is to learn and utilize CAAT (Davis, 1989; Jayanti et al., 2025). Actual use of CAAT (U) indicates the degree to which CAAT is applied in audit activities, while audit quality (AQ) captures auditors' perceptual evaluations of audit effectiveness, timeliness, accuracy, objectivity, and compliance with auditing standards (Sari & Kurniawati, 2021; Susilawati & Munawarah., 2023)

The use of perceptual measures for audit quality is justified on two grounds. First, in Non-Big Four firm contexts, objective audit quality indicators such as restatement rates or regulatory sanctions are not publicly accessible, making perceptual measures the most feasible and commonly used alternative (Meiryani et al., 2021). Second, prior studies in similar contexts have demonstrated that auditors' perceptual assessments of audit quality are significantly correlated with behavioral intentions and actual audit practices, supporting their construct validity (Rachmad et al., 2023; Susilawati & Munawarah., 2023). Each construct is measured using multiple indicators assessed on a five-point Likert scale.

Research Analysis

This study employs partial least squares structural equation modeling (PLS-SEM) as its primary analytical method. PLS-SEM is selected over covariance-based SEM (CB-SEM) for three reasons that are specific to this study's characteristics. First, PLS-SEM is more appropriate for predictive-oriented research that seeks to explain variance in endogenous constructs, which aligns with this study's objective of examining how PU and PEOU predict CAAT usage and how usage predicts audit quality (Hair et al., 2019). Second, PLS-SEM performs well with smaller sample sizes and does not require multivariate normality assumptions, making it suitable for the present sample of 72 respondents drawn from a specialized population (Cepeda-Carrion et al., 2019). Third, although the theoretical model is relatively parsimonious with four constructs, PLS-SEM remains appropriate because the study includes formative considerations in construct operationalization and prioritizes out-of-sample predictive relevance over model fit in the confirmatory sense (Hair & Alamer, 2022).

The analysis proceeds in two stages following the two-step approach recommended by Hair et al. (2019). In the first stage, the measurement model is evaluated by examining indicator reliability, internal consistency

reliability (Cronbach's alpha and composite reliability), convergent validity (average variance extracted, AVE), and discriminant validity (Fornell-Larcker criterion and HTMT ratio). In the second stage, the structural model is assessed by examining path coefficients, their statistical significance via bootstrapping with 5,000 resamples, and effect sizes (f^2) to evaluate the practical magnitude of each relationship beyond mere statistical significance. Additionally, the predictive relevance of the model is assessed using the Stone-Geisser Q^2 statistic obtained via blindfolding. All analyses are conducted using SmartPLS version 3, which provides comprehensive model assessment features and enhanced graphical representation suitable for PLS-SEM estimation (Jayanti et al., 2025)

To address potential common-method bias arising from the use of self-reported questionnaire data, this study applies both statistical and procedural remedies as recommended in prior methodological literature (Podsakoff et al., 2003). Statistically, Harman's single factor test is conducted using SPSS by performing an exploratory factor analysis on all measurement items to assess whether a single-factor accounts for the majority of the variance. If the total variance explained by a single factor is below the commonly accepted threshold of 50 percent, common method bias is considered unlikely to pose a serious concern. In addition, procedural remedies, such as ensuring respondent anonymity and reducing evaluation apprehension, are implemented to minimize the likelihood of response bias during data collection.

Operation of Variable

To achieve accurate measurement, the variables in this study are operationalized based on prior research. Operationalization is the process of converting intangible ideas into quantifiable parts using particular metrics to enable reliable quantitative evaluation (Andrade, 2021). The operational definitions of the variables, modified from previous research to support the quantitative analysis in this study, are listed in Table 1.

Table 1. Operation of Variables

Variable	Key Indicator	Reference
Perceived Usefulness (PU)	The application of CAAT increases auditors' efficiency in performing audit tasks.	(Davis, 1989; Jayanti et al., 2025; Venkatesh et al., 2003)
	The use of CAAT contributes to higher accuracy and reliability in audit activities.	
	Auditors regard CAAT as an effective tool that improves their overall job performance.	
Perceived Ease of Use (PEOU)	Auditors consider CAAT easy to learn and adapt to in their audit work.	(Davis, 1989; Jayanti et al., 2025; Venkatesh et al., 2003)
	Interaction with CAAT is perceived as straight forward and easy to understand.	
	Auditors view CAAT as user-friendly and simple to operate.	
Actual Use CAAT (U)	Auditors employ CAAT such as audit automation tools, generalized audit software, SQL-based database search and retrieval, test data, parallel simulation software, or embedded audit modules in a substantial part of their audit activities.	(Jayanti et al., 2025; Pedrosa et al., 2020; Siew et al., 2020)
	Auditors use CAAT to fulfill specific regulatory and professional requirements.	
	CAAT assist auditors in handling the complexity of computerized audit procedures.	
Audit Quality (AQ)	The level of auditors' professional knowledge, expertise, and experience.	(Meiryani et al., 2021)
	The auditor's ability to detect material misstatements.	
	Compliance with applicable auditing standards.	
	The overall quality of the audit report produced.	

RESULTS AND DISCUSSION

Results

Respondent Demographics

This research distributed questionnaires to 78 auditors from Non-Big Four public accounting firms in Yogyakarta and Central Java. The questionnaires were distributed in January 2026. They were handed out directly by visiting public accounting firms and were collected within 1 week of distribution.

A total of 72 of the 78 questionnaires that were sent were returned, resulting in a 92.31% response rate. As a result, these 72 valid answers were incorporated into the statistical analyses that followed. Roscoe's rule, which states that in multiple regression analysis, there should be ten times as many observations as there are variables, and fall between more than 30 and fewer than 500 samples, was followed in determining the sample size (Meiryani et al., 2021). Since the study model includes four variables, a minimum of 40 respondents is required. As a result, the study's 72 respondents surpass the bare minimum needed for analysis, combining structural equation modeling with partial least squares (Hair et al., 2019)

The respondents' education levels indicate that auditors at Non-Big Four public accounting firms in the Yogyakarta and Central Java regions have relatively high educational backgrounds. Based on the educational level distribution, most samples possess a Bachelor's degree (S1), accounting for 64 individuals (88.9%) of the whole sample. This is succeeded by respondents with a Master's degree (S2), totaling 4 individuals (5.6%), and those holding a Diploma, comprising 3 respondents (4.2%). Only 1 respondent (1.4%) reported having a senior high school education. No respondents were identified as having a junior high school education or a doctoral degree (S3). Figure 3 illustrates these findings.

As depicted in Figure 3, the dominance of respondents with Bachelor's and Master's degrees indicates that the auditors in this study possess a strong academic foundation in accounting and auditing. This suggests that most respondents have been equipped with adequate theoretical and conceptual understanding of the audit process, audit standards, and the developments in modern audit practices. This educational profile indicates strong potential for auditors to understand and adopt technology-based audit tools, including CAATs. Higher-educated auditors are typically more open to new ideas, better able to recognize the advantages of audit technologies, and more capable of assessing their contribution to improving audit efficiency and quality. As a result, the respondents' educational backgrounds lend credence to the idea that auditors' opinions about the value and usability of CAAT are logically developed and supported by sufficient knowledge, offering a pertinent foundation for additional research within the applied research model.

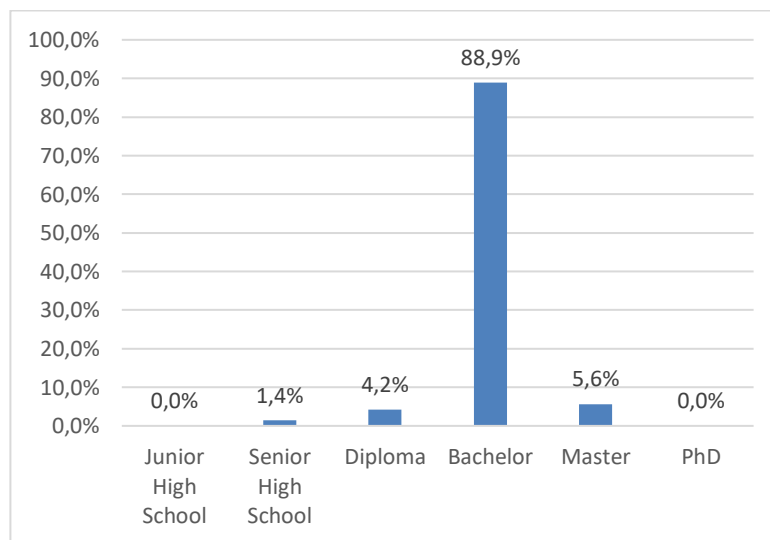


Figure 3. Educational Level

The information obtained from respondents regarding work experience indicates that the majority of auditors at Non-Big Four public accounting firms in the Yogyakarta and Central Java regions have relatively early- to mid-level experience. Based on the experience distribution, most respondents have between 1 and 3 years of professional experience, accounting for 52 individuals (72.2% of the sample). This is followed by

15 respondents (20.8%) with 4–6 years of experience, 3 respondents (4.2%) with 7–9 years, and 2 respondents (2.8%) with 10 years or more of experience.

This sample composition indicates that the respondents are predominantly auditors with relatively limited work experience, yet they represent a range of professional backgrounds. Auditors with 1–6 years of experience are typically in an active stage of audit engagement. They are closely taking part in the implementation of audit processes, including the application of modern auditing methods and instruments. Consequently, this group tends to be more receptive and adaptable to the use of auditing technology, such as CAAT, to enhance audit efficiency and effectiveness. Although auditors with extensive work experience constitute a smaller proportion of the sample, including respondents with more than 7 years of experience, this strengthens professional judgment and adherence to auditing standards and regulatory requirements. Overall, the diversity of work experience among respondents suggests that the auditors participating in this research have sufficient competence to identify errors or irregularities in financial statements and to evaluate the role of CAATs in enhancing audit quality, in line with their professional roles and responsibilities.

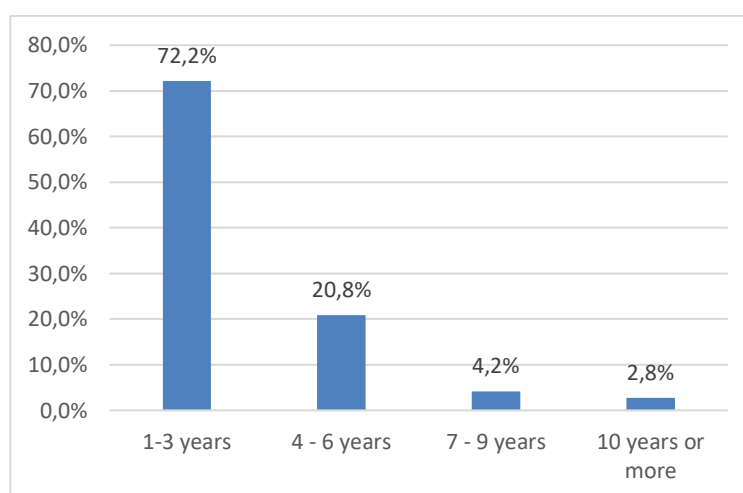


Figure 4. Experience

Based on Figure 5, the findings indicate that auditors working in Non-Big Four public accounting firms in the Yogyakarta and Central Java regions predominantly utilize Microsoft Excel in conducting audit activities. Microsoft Excel emerges as the most commonly used audit software, with 71 samples (78.0% of total usage). This is followed by Atlas, which accounts for 17 uses (18.7%). Other software, such as ACL and Microsoft Access, is used by only a small number of auditors: 2 (2.2%) and 1 (1.1%), respectively. No respondents reported using IDEA, Oracle, or other specialized audit software.

Figure 5 further illustrates that several auditors simultaneously employ multiple software applications during the audit process. In practice, auditors often combine Microsoft Excel with Atlas, or use Excel together with ACL or Microsoft Access, depending on the audit tasks being performed. The total number of software users exceeds the number of respondents.

Overall, these findings indicate that audit activities in Non-Big Four firms still rely heavily on general-purpose software that is easy to use and widely available. Microsoft Excel serves as the main audit tool and is often supported by other software to assist specific audit procedures. However, the very limited use of specialized audit software suggests that CAAT implementation remains at a basic stage. Therefore, enhancing auditors' understanding of the perceived usefulness of CAATs and how easy they are to use is crucial to encouraging wider adoption and supporting improvements in audit effectiveness and overall audit quality.

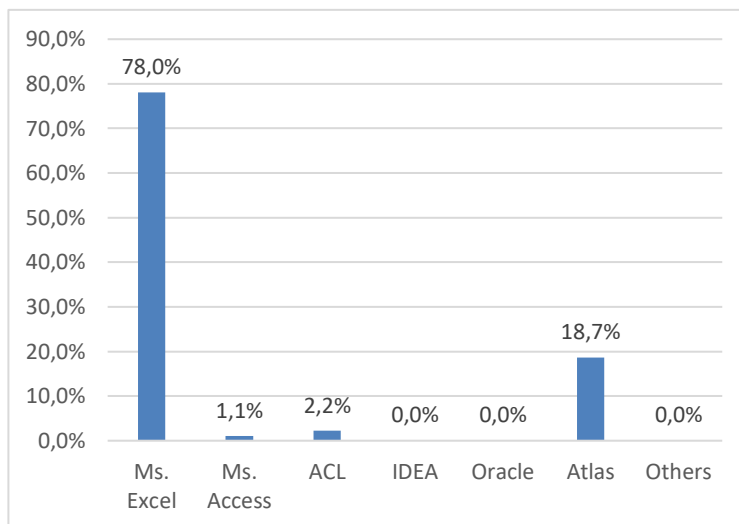


Figure 5. Software Used

The majority of auditors in Yogyakarta and Central Java’s Non-Big Four public accounting firms work in junior-level roles, according to the respondents’ employment position distribution in Figure 6. A total of 50 respondents (69.4%) are Junior Auditors, followed by Senior Auditors with 16 respondents (22.2%). In addition, 5 respondents (6.9%) hold the position of Audit Supervisor, while only 1 respondent (1.4%) is classified as a Head/Lead Auditor. No respondents occupy the positions of Audit Manager, Partner, or other roles.

These findings suggest that the audit staff in the sampled firms is largely composed of auditors at the beginning of their careers. This aligns with the respondents’ experience profile, which indicates that most auditors have 1-3 years of professional experience. Both junior and senior auditors are generally more engaged in fieldwork and operational audit activities, where the application of audit tools and software is most prevalent.

From a technology adoption perspective, auditors at junior and senior levels tend to rely on familiar, easy-to-use tools, such as Microsoft Excel, often combined with supporting software like Atlas. Although the number of auditors holding senior positions is relatively limited, their role remains crucial in providing supervision, exercising professional judgment, and ensuring compliance with auditing standards. Given that most respondents are directly involved in applying CAAT during the audit process, the composition of job positions supports the relevance of this study for examining auditors’ perceptions of CAAT's usefulness, ease of use, and impact on audit quality.

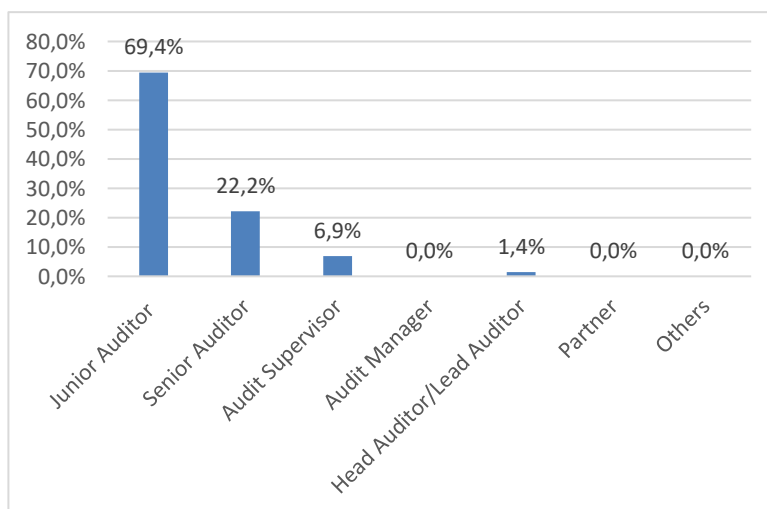


Figure 6. Position

Table 2. Respondent Characteristics Description

Characteristics	Details	Frequency	Percentage
Gender	Male	22	30.6%
	Female	50	69,4%
Ages	18-24 y.o	37	51.4%
	25-34 y.o	31	43.1%
	35-44 y.o	3	4.2%
	44-54 y.o	1	1.4%
	>55 y.o	0	0.0%
Educational Level	Junior High School	0	0.0%
	Senior High School	1	1.4%
	Diploma	3	4.2%
	Bachelor	64	88.9%
	Master	4	5.6%
	PhD	0	0.0%
Experience	1-3 years	52	72.2%
	4 - 6 years	15	20.8%
	7 - 9 years	3	4.2%
	10 years or more	2	2.8%
Software Used	Ms. Excel	71	78.0%
	Ms. Access	1	1.1%
	ACL	2	2.2%
	IDEA	0	0.0%
	Oracle	0	0.0%
	Atlas	17	18.7%
	Others	0	0.0%
Position	Junior Auditor	50	69.4%
	Senior Auditor	16	22.2%
	Audit Supervisor	5	6.9%
	Audit Manager	0	0.0%
	Head Auditor/Lead Auditor	1	1.4%
	Partner	0	0.0%
	Others	0	0.0%

Common Method Bias Assessment

Prior to reporting the main results, a common method bias (CMB) assessment was conducted, as all constructs were measured using self-reported perceptual indicators collected via a single survey instrument. Following the procedural recommendations of Podsakoff et al. (2003), the predictor and criterion variable sections were separated within the questionnaire, and respondent anonymity was guaranteed to reduce evaluation apprehension and social desirability bias.

At the statistical level, Harman's single-factor test was conducted in SPSS using principal axis factoring, with all construct indicators entered into a single exploratory factor analysis (Podsakoff et al., 2003). As shown in Table 3, the first extracted factor has an eigenvalue of 4.710 and accounts for 36.231 percent of the total variance, which is well below the 50 percent threshold. This finding indicates that although the first factor explains the largest proportion of variance among all extracted factors, it does not dominate the overall variance structure. While Podsakoff et al. (2003) note that Harman's single-factor test is a diagnostic rather than a definitive statistical control, the present results suggest that a single dominant method factor is unlikely to account for the observed relationships among constructs, and that CMB does not appear to pose a critical threat to the validity of this study's findings.

Table 3. Common Method Bias Assessment

Factor	Eigenvalue	% of Variance	Cumulative %
1	4.710	36.231%	36.231%

Outer Loading Test

The measurement model was evaluated by looking at the outer loadings of each indicator linked to the latent variables. Outer loading reflects the degree of association between observable indicators and the underlying constructs they represent. The purpose of this assessment is to determine whether the indicators accurately and consistently reflect the constructs they are intended to measure. Ghozali & Kusumadewi (2023), state that indicators with outer loading values greater than 0.708 meet the acceptable threshold and are therefore appropriate to retain in the measurement model.

Indicators of AQ, PEOU, PU, and U all exhibit outer loadings above the permissible minimum of 0.708, as shown in Table 4. Specifically, the outer loading values for the AQ indicators range from 0.717 to 0.829, for the PEOU indicators from 0.807 to 0.888, for the PU indicators from 0.848 to 0.876, and for the U indicators from 0.766 to 0.825. The lowest loading value is observed for AQ1 (0.717), which still meets the recommended criterion. Accordingly, the outer loading results suggest that all indicators exhibit sufficient reliability and appropriately represent their respective constructs. Therefore, none of the indicators were removed, and the measurement model is deemed appropriate for subsequent analysis, as shown in Table 4.

Table 4. Outer Loading Values

Indicators	Outer Loadings
AQ1	0.717
AQ2	0.829
AQ3	0.746
AQ4	0.816
PEOU1	0.840
PEOU2	0.807
PEOU3	0.888
PU1	0.874
PU2	0.876
PU3	0.848
U1	0.782
U2	0.766
U3	0.825

Validity and Reliability Tests

Several measurement model assessments, including construct reliability and convergent validity tests, were conducted to confirm the indicators' validity and reliability. The goal of these processes is to guarantee accurate and consistent measurement of the latent variables. When indicators linked to a construct exhibit significant intercorrelations, indicating that they represent the same underlying construct, convergent validity is established. The Average Variance Extracted (AVE) is used to evaluate this criterion; values greater than 0.50 are considered acceptable (Hair et al., 2019).

All constructs in this investigation have AVE values above the suggested minimum of 0.50, as shown in Table 5. The AVE for the actual use of CAAT (U) is 0.626, the AQ is 0.606, the PEOU is 0.715, and the PU is 0.751. Given that each idea accounts for more than half of the variance in its indicators, these results indicate that the convergent validity condition has been met.

In addition to convergent validity, internal consistency and dependability were assessed using Cronbach's alpha and Composite Reliability (CR). For research purposes, Cronbach's alpha values of 0.60 or higher and CR values of 0.70 or higher are considered suitable (Hair et al., 2019). Based on the results in Table 5, all constructs demonstrate CR values exceeding 0.70, with values of 0.834 for actual use of CAAT (U), 0.860 for AQ, 0.883 for PEOU, and 0.900 for PU. Cronbach's alpha values also indicate strong internal consistency for each construct, exceeding the minimal cutoff. In summary, the findings demonstrate that each notion meets the requirements for convergent validity and reliability. The measurement model can therefore be regarded as trustworthy and appropriate for a more structural model study, as indicated in Table 5.

Table 5. Cronbach's Alpha, Composite Reliability And Average Variance Extracted

Variable	Cronbach's Alpha	Composite Reliability (rho_c)	Average Variance Extracted (AVE)
Actual Use Of CAAT	0.705	0.834	0.626
Audit Quality	0.786	0.860	0.606
Perceived Ease Of use	0.806	0.883	0.715
Perceived Usefulness	0.834	0.900	0.751

The Fornell-Larcker criteria, which are often used in PLS-SEM analysis, were used in this work to assess discriminant validity. Discriminant validity is the extent to which one item in the study model deviates from other components both conceptually and practically. This condition is met when each construct's square root of the AVE is greater than its correlations with other constructs in the model (Fornell & Larcker, 1981).

The diagonal components that show the square root of AVE are larger than the comparable inter-construct correlations, as seen in Table 6. The square root of AVE for PU is 0.866, PEOU is 0.846, AQ is 0.778, and the actual use of CAAT (U) is 0.791. According to the data, sufficient discriminant validity has been attained as each of these values exceeds the correlations with other constructs.

Table 6. Fornell-Larcker criterion

Variable	Actual Use of CAAT	Audit Quality	Perceived Ease of Use	Perceived Usefulness
Actual Use Of CAAT	0.791			
Audit Quality	0.595	0.778		
Perceived Ease of use	0.492	0.578	0.846	
Perceived Usefulness	0.466	0.378	0.412	0.866

According to the results of the Fornell-Larcker evaluation, discriminant validity has been satisfactorily attained for every concept. To ensure that measurement indicators accurately reflect their intended constructs and exhibit consistent, reliable correlations, validity and reliability assessments are essential. As indicated in Table 6, the measurement model is considered reliable and appropriate for further structural model research, as all constructs meet the stipulated reliability and validity requirements.

Coefficient Determination

After construct validity and reliability have been confirmed, the research proceeds to structural model evaluation, which examines the strength of the proposed links between the constructs. In this step, the adjusted R-square (R^2) values are evaluated. These numbers indicate the extent to which the independent factors account for the variance in the dependent concept. In particular, the adjusted R-squared indicates the percentage of the dependent variable's variation that can be accounted for by the predictors. As a gauge of the model's predictive capacity, larger adjusted R-square values suggest that the independent variables have greater explanatory power for the dependent construct, whereas lower values indicate weaker explanatory power. (Ketchen, 2013).

Table 7. Coefficient of Determination

Variable	R Square	R Square Adjusted
Actual Use Of CAAT	0.325	0.306
Audit Quality	0.354	0.345
Perceived Usefulness	0.170	0.158

The coefficient of determination data are presented in Table 7, which shows the R-squared (R^2) and adjusted R-squared values for the endogenous constructs in the study model. PEOU and PU together account for 30.6% of the variance in auditors' actual use of CAAT, as indicated by an adjusted R-square of 0.306. At the same time, this indicates a meaningful contribution of TAM constructs to actual usage behavior; the remaining 69.4% of unexplained variance warrants contextual interpretation. In non-Big Four public accounting firms, technology adoption decisions are not shaped solely by individual perceptions. Organizational support, including management commitment to audit technology investment,

the availability of firm-level CAAT training programs, and peer influence within audit teams, constitutes a substantial layer of contextual factors that lie outside the scope of TAM's perceptual constructs (Jackson & Allen, 2024; Septari et al., 2025). Furthermore, individual-level characteristics such as prior IT experience, professional tenure, and computer self-efficacy may independently shape auditors' willingness to adopt CAAT beyond what PU and PEOU can capture (Sinaga, 2024). The structural constraints specific to Non-Big Four firms, including limited IT infrastructure, constrained budgets for software acquisition, and uneven access to technology training, further explain why a considerable portion of adoption variance remains unaccounted for by perceptual variables alone. This finding reinforces the importance of future research incorporating organizational and environmental moderators when studying CAAT adoption in resource-constrained audit settings.

The adjusted R-square value of 0.345 indicates that 34.5% of the variance in audit quality is explained by actual CAAT usage. This finding confirms that actual usage behavior constitutes a substantively meaningful predictor of audit quality outcomes, supporting the theoretical argument that the TAM mechanism produces downstream professional effects. The remaining 65.5% of unexplained variance reflects the multidimensional nature of audit quality, which is influenced by factors extending beyond technology use, including auditor professional skepticism, engagement complexity, client characteristics, partner supervision quality, and firm-level quality control systems (DeAngelo, 1981). In the Non-Big Four context specifically, audit quality is also shaped by resource availability for engagement staffing and the depth of reviewer oversight, which are dimensions that CAAT adoption alone cannot fully address.

The adjusted R-square value of 0.158 indicates that PEOU explains 15.8% of the variation in PU. This relatively modest value is theoretically consistent with TAM, which treats PEOU as one among several antecedents of usefulness perceptions rather than its sole determinant (Davis, 1989; Venkatesh & Bala, 2008). The remaining 84.2% of variance in PU likely reflects factors such as task complexity, prior CAAT experience, subjective norms from colleagues and supervisors, and the specific functional fit between available CAAT tools and the audit procedures auditors are required to perform (Abu Al Rob et al., 2024a). In Non-Big Four environments, PU perceptions may also be shaped by auditors' limited benchmarking opportunities, as exposure to how CAAT performs in better-resourced firms is restricted, and auditors' baseline for evaluating usefulness may differ substantially from those in Big Four contexts.

Taken together, the coefficient of determination results indicate that the structural model achieves a moderate level of explanatory power, consistent with the established norms for behavioral research and technology adoption studies in professional contexts (Hair et al., 2019). The moderate R² values do not diminish the theoretical contribution of the findings. Rather, they highlight that TAM constructs explain a meaningful and statistically significant portion of variance in CAAT adoption and audit quality within Non-Big Four firms, while simultaneously signaling that a comprehensive account of technology adoption in this context requires the integration of organizational, environmental, and individual boundary conditions that extend beyond the perceptual core of TAM.

Effect Size (f²)

To assess the practical significance of each structural relationship beyond statistical significance, effect sizes (f²) were evaluated following the criteria proposed by Cohen (1988), where values of 0.02, 0.15, and 0.35 indicate small, medium, and large effects, respectively (Hair et al., 2019).

Table 8. Effect Size (f²)

Path	f ²	Effect Size
PU → U	0.124	Small to Medium
PEOU → U	0.160	Medium
PEOU → PU	0.204	Medium
U → AQ	0.548	Large

As shown in Table 8, PU exhibits a small to medium effect on actual CAAT usage (f² = 0.124), indicating that although auditors recognize the benefits of CAAT, these perceptions alone are not sufficiently strong to drive adoption in practice (Jayanti et al., 2025; Pedrosa et al., 2020). In contrast, PEOU demonstrates a moderate effect on both actual usage (f² = 0.160) and PU (f² = 0.204), suggesting that ease of use plays a more

decisive role in shaping both adoption behavior and usefulness perceptions, particularly in environments with limited technical support (Davis, 1989; Susanto et al., 2023).

Most notably, actual use of CAAT shows a large effect on audit quality ($f^2 = 0.548$), indicating that the impact of technology becomes substantial only when it is actively utilized in audit procedures (Meiryani et al., 2021; Rachmad et al., 2023). This finding implies that improving audit quality in Non-Big Four firms depends less on increasing awareness of CAAT benefits and more on ensuring that auditors are able and willing to use the technology in practice. Overall, these results reinforce that while perceptual factors initiate adoption, actual usage serves as the critical mechanism through which technology translates into meaningful improvements in audit quality.

Hypothesis Testing

Structural relationships among the constructs were analyzed using PLS-SEM. A bootstrapping resampling approach was used in SmartPLS 3.0 to estimate standard errors, t-values, and p-values for each route coefficient. To test the hypotheses, a critical t-value of 1.960 was used. When the corresponding p-value was less than or equal to 0.05, and the resulting t-value exceeded this threshold, showing a statistically significant connection between the variables, the hypothesis was considered supported (Di Leo & Sardanelli, 2020).

Table 9. Hypothesis Testing

Hypothesis	Original Sample (O)	T Statistics	P Values
H1: Perceived Usefulness → Actual Use Of CAAT	0.317	2.362	0.019
H2: Perceived Ease Of Use → Actual Use Of CAAT	0.361	2.624	0.009
H3: Perceived Ease Of Use → Perceived Usefulness	0.412	3.854	0.000
H4: Actual Use Of CAAT → Audit Quality	0.595	8.785	0.000

In addition to the influence of actual use of CAAT on AQ, four hypotheses on the impact of PU and PEOU on the actual use of CAAT (U) were examined, as shown in Table 9. Hypothesis testing was conducted using a PLS-SEM approach with a bootstrapping procedure, with significance criteria set at t-statistics > 1.960 and p-values ≤ 0.05. The results indicate that all hypotheses (H1-H4) are statistically supported. Hypothesis 1 (H1), which states that PU affects actual use of CAAT (U), proved to be significant, with a path coefficient of 0.317, a t-statistic of 2.362, and a p-value of 0.019. This finding implies that the more an auditor believes that CAAT is helpful, the more likely they are to employ it during the audit process.

The effect of PEOU on actual use of CAAT is examined in Hypothesis 2 (H2). With a path coefficient of 0.361, a t-statistic of 2.624, and a p-value of 0.009, the study demonstrates a positive and significant association. This result suggests that one of the key factors motivating auditors to include CAATs in their audit procedures is their user-friendliness.

Next, there is strong evidence supporting Hypothesis 3 (H3), which posits that PEOU influences PU. A p-value of 0.000, a t-statistic of 3.854, and a path coefficient of 0.412 all support this. These findings imply that auditors consider CAAT a more beneficial tool for audit work when they find it easy to use. Finally, Hypothesis 4 (H4) examines how the actual use of CAAT (U) affects AQ. With a path coefficient of 0.595, a t-statistic of 8.785, and a p-value of 0.000, the testing findings demonstrate a very significant association.

This result demonstrates that auditors' practical application of CAAT significantly enhances audit quality. The path coefficients and relationships between constructs obtained from the structural analysis are visualized in the figure, which shows the direction of influence, the strength of each relationship, and the R-squared values for each endogenous construct. Overall, these results demonstrate that the structural model built has strong empirical support and is suitable for explaining CAAT usage behavior and its implications for audit quality.

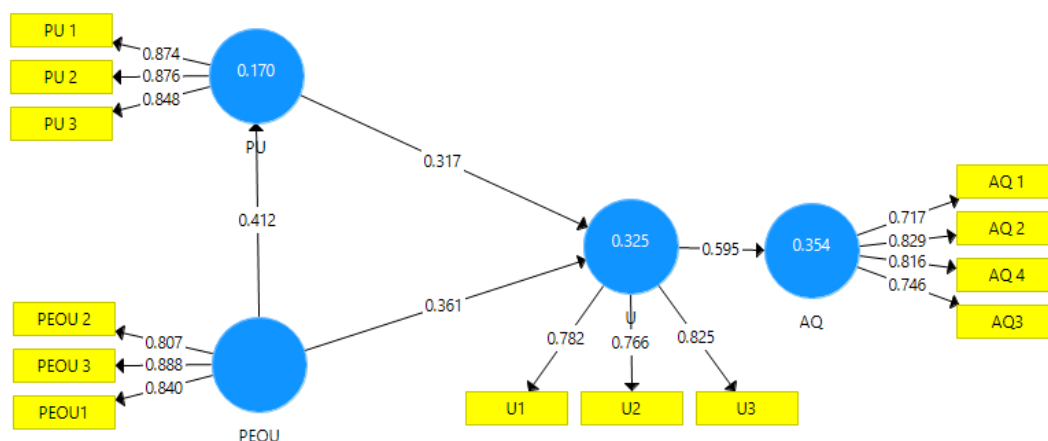


Figure 7. Research Path Coefficients.

Discussion

The results of this study demonstrate that the core constructs of the Technology Acceptance Model operate as an integrated mechanism in explaining CAAT adoption and its impact on audit quality. Rather than functioning as independent predictors, perceived ease of use, perceived usefulness, and actual use form a sequential pathway through which auditors’ perceptions are translated into behavioral change and, ultimately, audit outcomes. First, the significant influence of PEOU on PU confirms the foundational logic of TAM (Davis, 1989), where ease of use enhances the extent to which a system is perceived as beneficial. In the audit context, this relationship reflects a practical cognitive process: auditors are more likely to recognize the value of CAAT only after they experience that the system is not difficult to operate. This finding is consistent with prior studies (Jayanti et al., 2025), but also suggests that usefulness perceptions are not formed independently but are conditioned by usability, particularly in environments where auditors have limited exposure to advanced audit technologies.

Second, the findings reveal that PEOU exerts a stronger, more consistent influence on actual CAAT usage than PU does. This suggests that in Non-Big Four audit environments, adoption decisions are driven less by abstract evaluations of technological benefits and more by practical considerations of usability. Auditors operating under time pressure and limited technical support are more likely to prioritize tools that are easy to learn and apply in real audit tasks. This explains why ease of use becomes a more decisive factor in shaping behavior, reinforcing evidence from prior research that highlights the importance of usability in technology adoption (Al-Ateeq et al., 2022).

This pattern is particularly relevant in the context of Non-Big Four public accounting firms, where organizational resources, training opportunities, and IT infrastructure are often limited. In such settings, the decision to adopt CAAT is not driven by formal digital transformation strategies, but by individual auditors’ practical judgments regarding whether the technology can be used efficiently in their daily work. As a result, ease of use becomes a critical entry point for adoption, as complex systems are more likely to be avoided in favor of familiar tools such as spreadsheet-based analysis. This explains why, despite the recognized benefits of CAAT, its adoption in small firms remains uneven and highly dependent on individual-level perceptions rather than organizational mandates.

Third, although PU also shows a significant effect on actual use, its relatively weaker influence indicates that recognizing the benefits of CAAT alone is not sufficient to ensure adoption. The relatively weaker effect of PU compared to PEOU represents an important finding, suggesting that in this context, practical usability considerations outweigh perceived benefits in driving adoption decisions. This finding helps reconcile inconsistencies in the prior literature, which shows that some studies report an insignificant effect of PU on usage behavior (Jayanti et al., 2025). The present study suggests that usefulness perceptions may only translate into behavior when supported by sufficient ease of use, highlighting the interdependent nature of TAM constructs rather than treating them as isolated drivers.

Most importantly, the results demonstrate that actual use of CAAT has a strong and substantive impact on audit quality. This finding clarifies a critical mechanism that has often been implicitly assumed but rarely tested explicitly in prior studies. The improvement in audit quality does not stem from perceptions of technology, but from the extent to which auditors actively integrate CAAT into their audit procedures.

Through actual use, auditors can perform more comprehensive data analysis, reduce manual errors, enhance objectivity, and increase audit efficiency, thereby contributing to higher audit quality (Rachmad et al., 2023; Vitali & Giuliani, 2024).

This relationship is particularly important in small accounting firms, where audit processes are often constrained by limited personnel and time pressure. In such environments, the use of CAAT enables auditors to extend audit coverage beyond traditional sampling, allowing for more comprehensive examination of financial data without proportionally increasing workload. As a result, CAAT serves not only as a technological tool but also as a practical solution to the structural limitations faced by small firms, thereby amplifying its impact on audit quality when effectively utilized.

This also explains the inconsistency observed in previous studies. For instance, findings that CAAT does not significantly improve audit quality (Meiryani et al., 2021) may reflect contexts in which adoption remains superficial or incomplete rather than fully embedded in audit processes. In contrast, when CAAT is actively and effectively utilized, as demonstrated in this study, its impact on audit quality becomes substantial. This highlights that the effectiveness of audit technology is highly contingent on the depth of its actual use, rather than its mere availability or nominal adoption.

Overall, this study contributes by explicitly demonstrating the full TAM mechanism in the audit context, where perceptions influence behavior, which in turn drives outcomes. The findings emphasize that improving audit quality in Non-Big Four firms requires more than increasing awareness of CAAT benefits. Instead, it requires creating conditions that facilitate actual use, particularly by enhancing system usability and reducing adoption barriers. In this sense, the actual use of CAAT functions serves as the critical behavioral bridge connecting technology acceptance to tangible improvements in audit performance. This finding reinforces that technology adoption alone is insufficient; it is the depth of actual use that ultimately determines whether technological capabilities translate into meaningful improvements in audit quality.

CONCLUSION

This study concludes that both perceived usefulness (PU) and perceived ease of use (PEOU) have a positive and significant effect on the actual use of CAAT (U) among external auditors in Non-Big Four public accounting firms in Indonesia. Notably, PEOU exerts a relatively stronger influence on actual use than PU, indicating that in resource-constrained environments, auditors prioritize systems that are easy to learn and operate over those that merely enhance performance. In addition, PEOU significantly strengthens PU, and the actual use of CAAT has a strong positive impact on audit quality. These findings confirm that TAM effectively explains technology adoption behavior in the auditing context, where perceptual factors drive actual usage, which in turn determines audit outcomes. Consequently, improving audit quality depends not only on the availability of advanced tools but, more importantly, on auditors' willingness and ability to use them in practice, which also explains the continued reliance on general-purpose tools such as Microsoft Excel.

This study provides both theoretical and practical implications. Theoretically, it strengthens the application of TAM by empirically demonstrating the full mechanism from perception to behavior and ultimately to audit quality outcomes within a resource-constrained audit environment. In practice, the findings suggest that public accounting firms and regulators should focus on improving usability, providing continuous training, and fostering supportive environments to encourage effective CAAT adoption. However, this study is limited by its relatively small sample size and geographic focus on Central Java and Yogyakarta, as well as the use of only core TAM variables without incorporating broader organizational or technological factors. Future research is therefore encouraged to expand the sample at a national level, include additional variables such as organizational support and IT competence, and examine the role of emerging technologies in shaping audit quality across different types of audit firms.

REFERENCES

- Abu Al Rob, M. A., Mohd Nor, M. N., Salleh, Z., & Khalaf, A. M. (2025a). Factors Affecting Auditors' Decisions to Adopt Big Data Analytics: A Mixed Method Study. *Retos Revista de Ciencias de la Administración y Economía*, 15(29), 29–46. <https://doi.org/10.17163/ret.n29.2025.02>.
- Abu Al Rob, M., Mohd Nor, M. N., Alshdaifat, S. M., Khalaf, A. M., & Salleh, Z. (2025b). Impact of Competition and Client Size on Big Data Analytics Adoption: A TAM Study of Auditors. *Qubahan Academic Journal*, 5(1), 278–294. <https://doi.org/10.48161/qaj.v5n1a1129>.
- Abu Al Rob, M., Mohd Nor, M. N., & Salleh, Z. (2024a). The Role of Training in Big Data Analytics Adoption:

- An Empirical Study of Auditors Using the Technology Acceptance Model. *Electronic Journal of Business Research Methods*, 22(2), 30–45. <https://doi.org/10.34190/EJBRM.22.2.3752>.
- Abu Al Rob, M., Mohd Nor, M. N., & Salleh, Z. (2024b). The Influence of Big Data Analytics Adoption on Auditors' Professional Skepticism in Risk Assessment: An Empirical Study Using the Technology Acceptance Model. *Journal of Logistics, Informatics and Service Science*, 11(11), 158–177. <https://doi.org/10.33168/JLISS.2024.1110>.
- Al-Ateeq, B., Sawan, N., Al-Hajaya, K., Altarawneh, M., & Al-Makhadmeh, A. (2022). Big Data Analytics in Auditing and the Consequences for Audit Quality: a Study Using the Technology Acceptance Model (TAM). *Corporate Governance and Organizational Behavior Review*, 6(1), 64–78. <https://doi.org/10.22495/cgobrv6i1p5>.
- Andrade, C. (2021). A Student ' s Guide to the Classification and Operationalization of Variables in the Conceptualization and Design of a Clinical Study: Part 2. *Indian Journal of Psychological Medicine*, 43(3), 265–268. <https://doi.org/10.1177/0253717621996151>.
- Aulia, A., & Rochmatullah, M. R. (2024). Penggunaan Audit Tool and Linked Archive System (ATLAS) oleh Auditor KAP di Indonesia: Analisis Perluasan Technology Acceptance Model (TAM). *COSTING: Journal of Economic, Business and Accounting*, 7(4), 7825–7839. <https://doi.org/10.31539/costing.v7i4.10543>.
- Cepeda-Carrion, G., Cegarra-Navarro, J. G., & Cillo, V. (2019). Tips to Use Partial Least Squares Structural Equation Modelling (PLS-SEM) in Knowledge Management. *Journal of Knowledge Management*, 23(1), 67–89. <https://doi.org/10.1108/JKM-05-2018-0322>.
- Chen, X., Jiang, L., Zhou, Z., & Li, D. (2025). Impact of Perceived Ease of Use and Perceived Usefulness of Humanoid Robots on Students' Intention to Use. *Acta Psychologica*, 258, 1–9. <https://doi.org/10.1016/j.actpsy.2025.105217>.
- Cohen, J. (1988). *Statistical Power Analysis for The Behavioral Sciences* (2nd edition). New York: Routledge.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly: Management Information Systems*, 13(3), 319–339. <https://doi.org/10.2307/249008>.
- DeAngelo, L. E. (1981). Auditor Size and Audit Quality. *Journal of Accounting and Economics*, 3(3), 183–199. [https://doi.org/10.1016/0165-4101\(81\)90002-1](https://doi.org/10.1016/0165-4101(81)90002-1).
- Deniswara, K., Henky, T., Mulyawan, A. N., Armand, W. K., & Mustapha, M. (2023). The Role of External Auditor in the Adoption of Computer-Assisted Audit Techniques with Unified Theory of Acceptance and Use of Technology: An Empirical Study in Public Audit Firms in Jakarta. *Journal The Winners*, 24(1), 1–11. <https://doi.org/10.21512/tw.v24i1.8124>.
- Di Leo, G., & Sardanelli, F. (2020). Statistical Significance: P Value, 0.05 Threshold, and Applications to Radiomics—Reasons for A Conservative Approach. *European Radiology Experimental*, 4(1), 1–8. <https://doi.org/10.1186/s41747-020-0145-y>.
- Elnahass, M., Jia, X., & Crawford, L. (2024). Disruptive Technology and Audit Risks: Evidence from FTSE 100 Companies. *Emerging Markets Review*, 63, 1–26. <https://doi.org/10.1016/j.ememar.2024.101218>.
- Fiona, F., Salim, M., Hadi, E. D., & Hayu, R. S. (2024). *Orientasi Kewirausahaan dan Kebijakan Pemerintah Mempengaruhi Pemasaran Digital pada Kineja UMKM di Indonesia*. Bandung: Penerbit Media Sains Indonesia.
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.2307/3151312>.
- Ghozali, I., & Kusumadewi, K. A. (2023). *Partial Least Squares: Konsep, Teknik dan Aplikasi Menggunakan Program SmartPLS 4.0* (1st Edition). Semarang: Yoga Pratama.
- Ginting, E. E. A., Janadiyah, F., Julianti, V., Syahfitri, N., Prayudha, M. R., Putri, A. A., & Darma, J. (2025). Audit Sistem Informasi Berbasis Komputer Terhadap Pencegahan Kecurangan (Fraud): Kajian Teoritis. *Jurnal Publikasi Ekonomi dan Akuntansi (JUPEA)*, 5(2), 16–26. <https://doi.org/10.51903/jupea.v5i2.3838>.
- Gupta, S., Abbas, A. F., & Srivastava, R. (2022). Technology Acceptance Model (TAM): A Bibliometric Analysis from Inception. *Journal of Telecommunications and the Digital Economy*, 10(3), 77–106. <https://doi.org/10.18080/jtde.v10n3.598>.
- Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in Second Language and Education Research: Guidelines Using an Applied Example. *Research Methods in Applied Linguistics*, 1(3), 1–16. <https://doi.org/10.1016/j.rmal.2022.100027>.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate Data Analysis* (8th edition). Andover:

Cengage Learning.

- Ikatan Akuntan Indonesia. (2020). *Kode Etik Akuntan Indonesia Efektif 1 Juli 2020*. Retrieved from [http://www.iaiglobal.or.id/v03/files/file_berita/Kode Etik Akuntan Indonesia - 2020.pdf](http://www.iaiglobal.or.id/v03/files/file_berita/Kode%20Etik%20Akuntan%20Indonesia%20-%202020.pdf).
- Iryani, L. D., Farida, I., Rosanti, S., & Maulida, S. (2025). Audit Delay, Corporate Operational Complexity, and Computer-Assisted Audit Techniques (CAATs). *Jurnal Akuntansi & Auditing Indonesia*, 29(1), 64–78. <https://doi.org/10.20885/jaai.vol29.iss1.art6>.
- Jackson, D., & Allen, C. (2024). Enablers, Barriers and Strategies for Adopting New Technology in Accounting. *International Journal of Accounting Information Systems*, 52, 1-15. <https://doi.org/10.1016/j.accinf.2023.100666>.
- Jayanti, C., Slamet, C. A., & Handoko, B. L. (2025). The Impact of CAATS on Financial Auditor Task Effectiveness, Moderated by Computer Literacy. *Multidisciplinary Science Journal*, 8(3), 1-11. <https://doi.org/10.31893/multiscience.2026167>.
- Kartikasary, M., Laurens, S., & Sitinjak, M. (2021). Factors Affecting the Use of Generalized Audit Software in Audit Process in Indonesia. *Accounting*, 7(4), 819–824. <https://doi.org/10.5267/j.ac.2021.2.002>.
- Ketchen, D. J. (2013). A Primer on Partial Least Squares Structural Equation Modeling. *Long Range Planning*, 46(1–2), 184–185. <https://doi.org/10.1016/j.lrp.2013.01.002>.
- King, W. R., & He, J. (2006). A Meta-Analysis of the Technology Acceptance Model. *Information & Management*, 43(6), 740–755. <https://doi.org/10.1016/j.im.2006.05.003>.
- Legris, P., Ingham, J., & Colletette, P. (2003). Why Do People Use Information Technology? A Critical Review of the Technology Acceptance Model. *Information & Management*, 40(3), 191–204. [https://doi.org/10.1016/S0378-7206\(01\)00143-4](https://doi.org/10.1016/S0378-7206(01)00143-4).
- Mahardika, V. P., Supriyono, E., & Sumarta, N. H. (2025). Influence of Remote Auditing, CAATs, and Professional Skepticism on Audit Quality: A Central Java Case. *International Journal of Economics, Management and Accounting*, 2(2), 176–188. <https://doi.org/10.61132/ijema.v2i2.607>.
- Meiryani, Sujanto, M., Lindawati, A. S. L., Zulkarnain, A., & Liawatimena, S. (2021). Auditor's Perception on Technology Transformation: Blockchain and CAATs on Audit Quality in Indonesia. *International Journal of Advanced Computer Science and Applications*, 12(8), 526–533. <https://doi.org/10.14569/IJACSA.2021.0120861>.
- Pedrosa, I., Costa, C. J., & Aparicio, M. (2020). Determinants Adoption of Computer-Assisted Auditing Tools (CAATs). *Cognition, Technology and Work*, 22(3), 565–583. <https://doi.org/10.1007/s10111-019-00581-4>.
- Peng, W., & Robinson-Tay, K. (2025). Assessing the Characteristics and Outcomes of Perceived Usefulness and Ease of Use For Autonomous Vehicle Adoption. *Transportation Research Part F: Traffic Psychology and Behaviour*, 111, 391–408. <https://doi.org/10.1016/j.trf.2025.03.014>.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>.
- Purnamasari, P., Amran, N. A., & Hartanto, R. (2022). Modelling Computer Assisted Audit Techniques (CAATs) in Enhancing the Indonesian Public Sector. *F1000Research*, 11(559), 1–22. <https://doi.org/10.12688/f1000research.121674.2>.
- Rachmad, Y. E., Rusman, H., Anantadjaya, S. P. D., Hernawan, M. A., & Metris, D. (2023). The Role of Computer Assisted Audit Techniques, Professional Skepticism and Remote Auditing on Quality of Audit in Public Accountant Office. *Journal of Economic, Bussines and Accounting (COSTING)*, 6(2), 2180–2192. <https://doi.org/10.31539/costing.v6i2.6108>.
- Sari, Y., & Kurniawati, K. (2021). Apakah Skeptisisme Profesional, Kompleksitas Tugas dan Teknik Audit Berbantuan Komputer Berdampak Terhadap Kualitas Audit? *Ultima Accounting: Jurnal Ilmu Akuntansi*, 13(2), 238–256. <https://doi.org/10.31937/akuntansi.v13i2.2221>.
- Septari, A. I., Hizazi, A., & Wahyudi, I., & Yuliusman, Y. (2025). Factors Influencing Usage of Computer-Assisted Audit Techniques by External Auditor: A UTAUT Approach. *Jurnal Akuntansi dan Keuangan Universitas Jambi*, 10(02), 632–642. <https://doi.org/10.22437/jaku.v10i02.47293>.
- Serpeninova, Y., Makarenko, S., & Litvinova, M. (2020). Computer-Assisted Audit Techniques: Classification and Implementation by Auditor. *Public Policy and Accounting*, 1(1), 44–49. <https://doi.org/10.26642/ppa-2020-1-44-49>.
- Siew, E. G., Rosli, K., & Yeow, P. H. P. (2020). Organizational and Environmental Influences in the Adoption of Computer-Assisted Audit Tools and Techniques (CAATs) by Audit Firms in Malaysia. *International*

- Journal of Accounting Information Systems*, 36, 1-19. <https://doi.org/10.1016/j.accinf.2019.100445>.
- Sinaga, J. (2024). Does Audit Software Adoption Matter? Evidence from Local CPA Firms in Indonesia. *CogITo Smart Journal*, 10(1), 86-96. <https://doi.org/10.31154/cogito.v10i1.635.507-517>.
- Sugiyono. (2021). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: Alfabeta.
- Susanto, H., Pramono, A. J., Akbar, B., & Suwarno, S. (2023). The Adoption and Readiness of Digital Technologies Among Auditors in Public Accounting Firms: A Structural Equation Modeling Analysis. *Research Horizon*, 3(2), 71-85. <https://doi.org/10.54518/rh.3.2.2023.103>.
- Susilawati, N., & Munawarah, I. (2023). Faktor-Faktor Skeptisisme Profesional, Kompleksitas Tugas dan Teknik Audit Berbantuan Komputer Berdampak Terhadap Peningkatan Kualitas Audit. *ELESTE: Economics Learning Experience & Social Thinking Education Journal*, 3(1), 22-32. <https://journal.stiegici.ac.id/index.php/eleste/article/view/106>.
- Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and a Research Agenda on Interventions. *Decision Sciences*, 39(2), 273-315. <https://doi.org/10.1111/j.1540-5915.2008.00192.x>.
- Venkatesh, V., & Davis, F. D.. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 46(2), 186-204. <https://doi.org/10.1287/mnsc.46.2.186.11926>.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly: Management Information Systems*, 27(3), 425-478. <https://doi.org/10.2307/30036540>.
- Vitali, S., & Giuliani, M. (2024). Emerging Digital Technologies and Auditing Firms: Opportunities and Challenges. *International Journal of Accounting Information Systems*, 53, 1-13. <https://doi.org/10.1016/j.accinf.2024.100676>.
- Wang, P., & Liang, S. (2025). Internal Audit Independence, Legal Person Governance Structure, and Financial Reporting Quality. *International Review of Economics and Finance*, 101, 1-9. <https://doi.org/10.1016/j.iref.2025.104142>.
- Wassie, F. A., & Lakatos, L. P. (2025). Audit Technology as a Catalyst for Improving Non-Financial Performance in Ethiopian Audit Firms. *Journal of Open Innovation: Technology, Market, and Complexity*, 11(2), 1-8. <https://doi.org/10.1016/j.joitmc.2025.100556>.
- Wicaksono, A., Maulina, E., Rizal, M., & Purnomo, M. (2023). Technology Accepted Model (TAM): Applications in Accounting Systems. *Journal of Law and Sustainable Development*, 11(5), 1-16. <https://doi.org/10.55908/sdgs.v11i5.547>.

ACKNOWLEDGMENTS

The author would like to sincerely thank all of the auditors from Yogyakarta and Central Java's Non-Big Four public accounting firms who voluntarily took part in this study and contributed insightful data via the questionnaire survey. Their cooperation was essential to the successful completion of this research. The author also gratefully acknowledges the academic support and conducive scholarly environment provided by UIN Raden Mas Said Surakarta during the preparation and completion of this study. Any remaining errors or shortcomings are the sole responsibility of the author.