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# The Impact of Computer-Assisted Audit Techniques on Perceptions of Artificial Intelligence in Auditing

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***Abstract*— The rapid digitalisation of the current business environment has accelerated the shift from traditional audit procedures to technology-enabled approaches, particularly with the widespread adoption of Computer-Assisted Audit Techniques (CAATs). As organisations process ever more complex and voluminous transactional data, auditors must adapt their work to ensure effective risk assessment and thorough audit coverage. In parallel, the increasing integration of Artificial Intelligence (AI) into the financial sector has prompted debate within the audit community about its long-term implications for professional practice.**

***While prior work has examined the technical capabilities of audit technologies, comparatively little empirical work has examined practitioners' and aspirant practitioners' perceptions of these technologies. This study aims to investigate the impact of CAATs on perceptions of the possible transformation or replacement of auditing by AI among practising auditors and Chartered Accountancy students.***

***The research employs a quantitative approach based on primary data collected through a structured questionnaire administered to practising audit professionals and CA students. A total of 107 valid responses were obtained and analysed using descriptive and some comparative statistical techniques.***

***The findings are intended to give insight into the influence of technological exposure on the professional outlook of the changing audit landscape. By investigating the link between familiarity with CAATs and perceptions of AI-driven change, the study can contribute to the existing literature on technology adoption in auditing and draw practical implications for professional development and future skill formation within the audit profession.***

***Index Terms*—Rapid Digitalization, Computer-Assisted Audit Techniques (CAATs), Artificial Intelligence (AI)**

## I. INTRODUCTION

Auditing is an independent system of assurance to increase the credibility of financial reporting. By offering reasonable assurance that financial statements are free from material misstatement, whether caused by error or fraud, the audit professional makes an important contribution to maintaining confidence in financial statements and the integrity of the capital markets among stakeholders, the stockholders. In today's corporate organisations, where ownership has been separated from management, the work of auditors helps overcome information asymmetry by providing an independent assessment of financial disclosures prepared by insider management. In the past, manual procedures, professional judgment, and sample-based testing of transactions have been used to provide this assurance.

However, the high rate of digitalisation in business environments has led to significant changes in the context in which audits are performed. Organisations are producing more transactional data through the integration of enterprise systems and automated accounting systems. As transactional complexity and data volumes continue to rise, reliance on traditional manual procedures is increasing, constrained by inefficiencies, gaps in coverage, and data timeliness. These structural changes have required either the development or the adaptation of audit methodologies to keep pace with technological change.

One of the major developments in this evolution has been the use of Computer Assisted Audit Techniques (CAATs). CAATs can extract, analyse, and audit electronic information for testing from digital accounting systems. Rather than relying on sampling procedures that are limited in scope and size, auditors can analyse larger datasets, test controls through automated testing, and improve their ability to detect anomalies. The integration of CAATs is an important step in technology-assisted methodologies, which are designed to move beyond traditional manual audit techniques and broaden the scope and speed of audit evidence collection.

The increased reliance on CAATs is part of a broader pattern of data-driven auditing. As organisations continue to operate in digitised environments, auditors must develop the equivalent digital competencies. This change has led to modifications to audit procedures, particularly with respect to data extraction, recalculation, and routine testing. In this way, technological tools have been enshrined in current audit practice, raising serious questions about the future direction of professional roles.

Parallel to the development of CAATs, advances in Artificial Intelligence (AI) have created new opportunities for the accounting and finance industries. AI-driven systems can perform tasks such as pattern recognition, prediction modelling, automated anomaly detection, and rule-based decision support. Within audit environments, such capabilities might be employed to enhance risk assessment procedures, automate dull procedures and assist in the control

testing process. These developments have spurred debates about whether AI is a tool to make work more efficient or a force capable of transforming the structure of audits.

Despite the rapid implementation and use of technology, there is debate about the role of Artificial Intelligence in replacing, changing, or supplementing auditing. While technical capability has received much attention in the academic/ professional literature, comparatively less empirical attention has been paid to this question in relation to practising/aspiring auditors and to how they perceive such developments. As the pace of technology adoption accelerates, professionals' perceptions are an important factor in determining acceptance, adaptation, and skill development in the audit domain.

## II. REVIEW OF LITERATURE

The integration of technology into auditing has undergone significant changes in the past decade, following the broader digital transformation of accounting and financial reporting. Contemporary research indicates a growing focus on the use of data analytics and automation tools to enhance audit effectiveness and efficiency. Brown-Liburd and Vasarhelyi [1] outline the evolution of continuous auditing environments that focus on the ability to analyse data and perform monitoring in near-real time, made possible by technological systems. Similarly, Alles [2] recognises advanced data analytics as a key driver of a shift to new ways of working among modern auditors, particularly in environments characterised by large-scale digital processing of transactions.

Computer-Assisted Audit Techniques (CAATs) are among the earliest, most prominent, and most structured manifestations of the integration of technology into audit practice. CAATs enable auditors to access data from enterprise systems over the internet and to automate testing of large datasets. Johnson et al. [3] point out that the addition of CAAT reduces the use of limited sample-based testing and increases the potential of transactional examination. Empirical research has further suggested that the use of CAAT is more effective for anomaly identification and audit risk assessment [6]. Weber [5] argues that analytical procedures have the potential to increase the probability of detecting irregularities that purely manual verification methods may not detect. Collectively, this body of literature positions CAATs as efficiency-enhancing technologies that increase audit coverage without fundamentally altering the role of professional judgment.

Beyond CAATs, the use of Artificial Intelligence has become an object of scholarly interest in auditing research. AI applications in the field of audit, such as machine-learning-based methods for anomaly detection, risk prediction, automated contract analysis, and intelligent control testing [4][7]. Issa, Sun, and Vasarhelyi [8] define knowledge automation as an extension of data analytics to power systems to handle large amounts of structured data and enable data-driven decision-making. A systematic review by Gepp et al. [9] reports the rapid growth of applications of machine learning in fraud detection and financial misstatement prediction. These studies collectively demonstrate the ever-increasing technical sophistication of artificial intelligence (AI)-driven systems within and related to audit functions.

However, the debate about technological advancement in auditing is not all about capability; it also has professional implications. Yoon, Hoogduin, and Zhang [10] argue that big data analytics will provide complementary audit evidence, but does not eliminate the need for a professional evaluation. Similarly, Appelbaum, Kogan, and Vasarhelyi [12] emphasise that while automation improves the production side of auditing, cognitive interpretation and ethical reasoning remain essential elements of audit engagements. This distinction between procedural automation and professional judgment is central to the current debate on the role of AI in the auditing profession.

An additional pool of literature investigates the factor(s) that determine the acceptance of technology in the audit profession. Based on technology adoption frameworks, Wang, Pan, and Zhu [13] demonstrate the significant roles of perceived usefulness and ease of use in automation adoption. Li and Tan [11] find that attitudes toward technological integration are positively associated with familiarity with data analytics tools. More recently, Davis and Shrestha [14] examined the role of generational exposure and professional experience in perceptions of audit automation. These results indicate that not only does technical capability condition attitudes toward AI and audit technology, but also familiarity/experiences.

While related research on technological capability, drivers of adoption, and efficiency outcomes is in depth, much less empirical focus has been placed on auditors' perceptions of AI as a potential substitute for auditors. Much of the literature focuses on aspects of system performance and prediction accuracy, and on the benefits of automation, with insufficient regard for the human dimension of perceived professional displacement. As the rate of technology integration in the audit profession increases, information on practitioners' and students' perceptions becomes increasingly relevant for predicting the profession's future.

Accordingly, this research contributes to the literature by examining the effect of familiarity with Computer-Assisted Audit Techniques (CAATs) on perceptions of AI transformations and replacements in auditing. By integrating technology adoption theory with empirical analysis of perceptions, the research bridges the gap between discourse in technological capability and professional outlook. It offers insight into how beliefs about the future of auditing are affected by exposure to automation.

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## III. RESEARCH OBJECTIVES AND HYPOTHESES

### A. Research Objectives

1. The primary objective of this study is to examine whether familiarity with Computer-Assisted Audit Techniques influences perceptions regarding the potential transformation or replacement of auditing by Artificial Intelligence.
2. The specific objectives are as follows:
3. To assess the level of familiarity and perceived utility of CAATs among practising audit professionals and Chartered Accountancy students.
4. To evaluate perceptions regarding the extent to which Artificial Intelligence may automate, transform, or replace components of the audit process.
5. To compare perception differences between practising professionals and CA students concerning AI-driven change within auditing.
6. To analyse the relationship between familiarity with CAATs and perceptions of AI as either an augmentative or substitutive force in auditing.

### B. Research Hypotheses

H1: There is a significant relationship between familiarity with Computer Assisted Audit Techniques and perceptions regarding the transformation or replacement of auditing by Artificial Intelligence.

H2: There is a significant difference between practising audit professionals and Chartered Accountancy students in their perceptions regarding the potential impact of Artificial Intelligence on auditing.

H3: Increased familiarity with Computer Assisted Audit Techniques is associated with perceiving Artificial Intelligence as an augmentative tool rather than a complete substitute for auditors.

## IV. RESEARCH METHODOLOGY

This study adopts a quantitative research approach to analyse the correlation between familiarity with Computer-Assisted Audit Techniques (CAATs) and perceptions of the potential transformation/replacement of auditing by Artificial Intelligence (AI). Data were collected using a structured questionnaire by an online survey data collection platform.

### A. Sampling and Data Collection

The research employed purposive sampling and the snowball sampling method. Respondents were purposively selected in line with the research objective, comprising practising audit professionals and Chartered Accountancy students. The survey was initially circulated to individuals associated with audit-related functions and to CA Inter and CA Final students. Participants were encouraged to disseminate the survey to other persons who met the eligibility criteria.

A total of 107 valid responses were obtained. The final sample consisted of 65 working audit professionals, 32 students of the CA Intermediate Examination and 10 students of the CA Final Examination. This distribution enabled a comparative analysis of current practitioners and those who wish to enrol in the audit profession.

### B. Instrument Design

The questionnaire had three sections. The first section requested information on demographics, including respondent category, level of study or professional experience, and area of audit exposure.

The second section established familiarity with and perceived utility of CAATs by presenting five statements related to awareness, trends in use, perceived increases in efficiency, reductions in manual procedures, and expectations for future use of CAATs.

The third section examined perceptions of AI and its potential impact on auditing. Five statements were used to measure beliefs regarding the ability of AI to automate routine procedures, minimise human involvement, imitate professional judgment, substitute information in substantial portions of audit procedures, and the role of regulatory and ethical constraints in limiting the extent to which it is replaced.

All of the statements related to perception were evaluated on a five-point Likert scale from "Strongly disagree" (1) to "Strongly agree" (5).

### C. Variable Construction

Two major constructs were developed for analysis. The first construct, CAAT Familiarity and Perceived Utility, was summed by the 5 CAAT items. The second construct, which was computed as the mean of the 5 items' scores on AI, is known as AI Replacement Perception.

To ensure directional consistency within the AI replacement construct, the statement regarding regulatory and ethical constraints was reverse-coded for analysis. This adjustment ensured, for instance, that higher scores always reflected more positive perceptions of being replaced or changed by artificial intelligence.

### D. Statistical Tools

Descriptive statistics were used to summarise the overall response patterns and trends in perception. A comparative analysis was conducted to identify perceptual differences between practising professionals and CA students. Additionally, correlation analysis was used to assess the association between familiarity with CAATs and ethical perceptions of AI transformation or replacement.

All data were coded numerically before analysis, and mean scores were used to interpret the constructs.

## V. DATA ANALYSIS AND RESULTS

### A. Perceptions Concerning Use of CAAT

A descriptive analysis of CAAT-related statements shows generally favourable views of the technological integration in auditing. Approximately 56% of respondents agreed or strongly agreed with the questions regarding familiarity,

trends in usage, efficiency gains, minimisation of manual procedures, and the necessity of CAATs in the future. The next highest percentage of responses was clustered around the neutral category, suggesting a more moderate level of consensus rather than extreme polarisation.

These results show that CAATs are widely recognised as tried-and-tested tools in modern-day audit engagements. Respondents accept the operational utility of their use, particularly in improving audit coverage and efficiency. However, the presence of a large neutral segment indicates varying degrees of practical exposure or confidence in adopting the technology.

### B. Perceptions Regarding AI and Audit Transformation

Perceptions about Artificial Intelligence are differentiated. A significant number of the sample (around 82%) agreed that AI can perform routine audit procedures. Similarly, 82% agreed that AI could replace a substantial portion of traditional audit processes in the long term. These responses reveal a high degree of acknowledgement of the procedural and structural potential of AI in auditing.

However, in the case of professional judgement, the responses were substantial. Only about 9% of respondents agreed that auditing AI systems could replicate professional judgment. The majority disagreed or were neutral, indicating scepticism about AI's capacity to replace evaluative reasoning and contextual interpretation.

In addition, around 64% agreed that increased use of AI would limit human interaction in audit engagements. While this means, as it were, a foreseen redistribution of tasks, it does not necessarily mean professional displacement. Notably, some 64% also agreed that regulatory and ethical requirements will prevent AI from totally replacing auditors. This reinforces beliefs about institutional safeguards and accountability frameworks established in audit practice.

Overall, the findings indicate that the respondents draw sharp distinctions between the automated procedure and the replacement of professional judgement.

### C. Comparative Observations

A comparative evaluation of the practising professionals and Chartered Accountancy students shows slight perceptual differences. A certain degree of agreement was expressed with statements suggesting that AI may automate certain aspects of auditing. However, they did not express strong agreement with the idea of replacing professionals in full.

Practising professionals were also similar in recognising the automation opportunities of AI and had comparatively more confidence in the continued need for professional oversight. This suggests that extreme perceptions of technological substitution may be tempered by practical experience.

### D. Relationship between CAAT-A Familiarity and AI Replacement Perception

An interesting pattern was established when the correlation between familiarity with CAATs and perceptions of AI replacement was analysed. Respondents who said they are more familiar with CAATs were more likely to agree that Artificial Intelligence cannot totally replace auditors.

While such respondents recognised AI's ability to automate routine and structured processes, they were more confident in the irreplaceability of professional judgement and regulatory accountability. This implies that technological exposure is part of a more subtle understanding of the limits of automotive components.

Accordingly, familiarity with CAATs appears to moderate perceptions of AI-driven displacement and helps conceptualise AI as an augmentative rather than a substitutive force within auditing.

## VI. DISCUSSION

The results of this study emphasise the structured and differentiated perception of Artificial Intelligence in auditing. Respondents demonstrated good recognition of AI's ability to automate routine, rule-based tasks in auditing. At the same time, they held serious doubts about AI's ability to emulate professional judgment. This distinction is important for emphasising the conceptual difference between procedural automation and cognitive evaluation in audit practice.

The conclusion that can be drawn from the fact that a substantial majority of respondents say that AI is capable of performing straightforward tasks and replacing substantial parts of traditional audit procedures is that respondents expect a structural transformation of the profession. Functions such as data extraction, transaction matching and expanded sampling, as well as automated control testing, are widely perceived as being amenable to technological substitution. These results are consistent with prior research, indicating that data analytics and AI enhance procedural efficiency and audit coverage [5][9].

However, the low level of concurrence in the replicating characteristics of professional judgment appears indicative of recognition of the innate cognitive and interpretive aspects of auditing. Audit engagements require context-based evaluation, management intent evaluation, professional scepticism and materiality evaluation that goes beyond structured data processing. This is consistent with the existing scholarship on the value of automated audit work, which highlights that whilst audit work is facilitated by automation, professional reasoning and accountability are necessary [10][12].

In addition, regulatory and ethical frameworks became important. The prevailing view that regulatory requirements preclude them from fully substituting for one another reinforces the perception that auditing is not only a technical function but also a legally responsible profession. However, even if AI systems are used to handle procedural tasks, the

responsibility for audit opinions remains with human professionals.

An important contribution of this study is the identification of a relationship between familiarity with CAATs and perceptions of AI replacement. Respondents who were more familiar with and exposed to audit technology were less likely to agree with the premise that auditors could be totally replaced. This suggests that field experience helps make the limitations of automation very real for students, rather than seeming like a fantastic thing, as it is supposed to. Exposure to CAATs appears to increase understanding of the distinction between procedural automation and greater professional responsibility at higher levels of complexity.

A comparative observation between practising professionals and Chartered Accountancy students provides further support for this interpretation. While the students accepted the transformative potential of AI, they were not supportive of full professional displacement. Practising professionals with applied audit experience expressed greater confidence in the continued relevance of professional interpretation and oversight. These findings suggest that a technological perception of experiential exposure modulates the issue of substitution.

Overall, the results are supportive of an augmentation framework of technological integration in auditing. Artificial Intelligence isn't viewed as a threat to professional practice, but rather as a mechanism to redistribute procedural tasks without sacrificing the cognitively intensive and legally accountable functions. The evolution of auditing, therefore, appears to have been an evolution of structure rather than a professional elimination, and the continued centrality of human judgment in technologically advanced audit environments.

## VII. CONCLUSION

This study investigated whether familiarity with Computer-Assisted Audit Techniques affects perceptions of the potential transformation or substitution of auditing by Artificial Intelligence. By analysing the responses of students and practising audit professionals, the research provides empirical evidence on the impact of technical exposure on professional outlook in the changing audit landscape.

The findings suggest a positive awareness of the potential of Artificial Intelligence to automate routine and structured audit procedures. Respondents expect substantive changes in procedures, particularly in how data are extracted, in testing, and in automated control evaluation. However, respondents strongly rejected the notion that AI can replicate professional judgment. Scepticism about the validity of AI in supplanting interpretive reasoning, contextual assessment, and professional scepticism remains strong.

Additionally, regulatory and ethical considerations were identified as significant in averting the complete replacement of professionals. Respondents were confident that institutional and legal accountability would prevent auditors from being completely replaced, even in technologically advanced audit contexts.

An important contribution of the current research is the identification of moderating technological familiarity. Respondents with greater familiarity with CAATs were less likely to perceive AI as a complete substitute for auditors. This, in turn, implies that practical experience with automation tools fosters a more nuanced understanding of technological limits, reinforcing the conceptualisation of AI as an augmentative rather than a substitutive force.

Collectively, the findings are consistent with a structural transformation view rather than a professional elimination narrative. At the same time, as AI is expected to impact the allocation of tasks in audit engagements, the importance of human judgement, scepticism, and accountability remains unaltered. These findings are part of a professional conversation about the future of auditing and highlight the importance of technological literacy for adapting and making informed professional decisions.

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