



Exploring Generative Artificial Intelligence Adoption in Auditing: A Technology Acceptance Model Perspective

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Abstract: This article presents a comprehensive literature review on the adoption of Generative Artificial Intelligence (GenAI) in auditing, analyzed through the lens of the Technology Acceptance Model (TAM). Drawing upon 23 recent peer-reviewed studies published between 2020 and 2025, the review synthesizes key developments, opportunities, and challenges at the intersection of digital transformation and audit practice. Findings indicate that GenAI offers substantial benefits for audit effectiveness—most notably in enhanced fraud detection, process automation, data analysis, and audit quality—contributing to a high level of perceived usefulness among auditors. Nevertheless, perceived ease of use varies, with some practitioners citing intuitive GenAI tools, while others experience hurdles related to training needs, system complexity, and concerns regarding transparency and algorithmic bias.

The behavioral intention to adopt GenAI is significantly influenced by organizational commitment, leadership support, and ongoing auditor training, though resistance to change and regulatory uncertainty remain persistent barriers. Key challenges include doubts over AI output reliability, data privacy risks, integration issues, and the digital maturity gap, especially in smaller firms. The review concludes that the successful integration of GenAI into auditing hinges on human resource readiness, supportive culture, regulatory clarity, and continuous professional development. It emphasizes the urgent need for further empirical and longitudinal research to objectively assess GenAI's real impacts on audit outcomes, independence, and ethical considerations in diverse organizational settings.

Keywords: Generative Artificial Intelligence, Auditing, Technology Acceptance Model, Audit Quality, Digital Transformation

1. INTRODUCTION

The digital revolution, underscored by the rapid development of Artificial Intelligence (AI), has significantly impacted the business world and professional practices, most notably in the field of auditing (Bakinsky, 2025). Among these advancements, Generative Artificial Intelligence (GenAI) stands out by enabling auditors to automate data analysis, simulate complex scenarios, generate audit documentation, and offer predictive insights at unprecedented scale and speed (Wan, 2025; Trüllion, 2024). As organizations face mounting data volumes and greater scrutiny in regulatory environments, GenAI represents a potentially transformative resource, helping auditors carry out more thorough, timely, and accurate assessments (American Accounting Association, 2025; ScienceDirect, 2025).

Currently, the status quo in auditing is marked by a duality: while AI-driven technologies – especially GenAI – are increasingly being piloted and adopted in large organizations and global accounting firms, the sector still faces considerable barriers to full-complex, demanding ongoing changes in workforce

skills, education, and organizational culture (ScienceDirect, 2025; ArXiv, 2024).

This literature review aims to:

1. Analyze the development, application, and contribution of GenAI in audit practice;
2. Identify the opportunities, challenges, and ethical implications of GenAI integration in auditing;
3. Map research gaps as recommendations for future research.

By synthesizing up-to-date literature, this study is expected to make strategic contributions to the development of the audit profession and research in the digital era.

2. MATERIALS AND METHODS

2.1 The Technology Acceptance Model (TAM) in Auditing

The Technology Acceptance Model (TAM), introduced by Davis (1989), is a foundational theory in information systems research that helps explain and predict user acceptance of new technology. TAM posits that two primary factors—perceived usefulness (PU) and perceived ease of use (PEOU)—determine an individual's intention to

use a system, which in turn influences actual technology adoption behavior.

In the context of auditing, the TAM framework offers a robust lens to examine how auditors and audit firms respond to the influx of Generative Artificial Intelligence (GenAI) technologies (American Accounting Association, 2025). Auditors are more likely to adopt GenAI-driven tools if they believe these systems increase audit efficiency, enable higher-quality work, and are straightforward to learn and operate (Bakinsky, 2025). Perceived usefulness can manifest in improved fraud detection, reduced manual workload, and enhanced data analytics capabilities, while perceived ease of use is linked to the intuitiveness of GenAI interfaces and the extent of required training (Wan, 2025; ScienceDirect, 2025).

Recent studies using the TAM framework suggest that organizational support, availability of user training, and clarity of benefits are significant moderating factors (Trüllion, 2024). Additionally, the audit profession's highly regulated nature means that external expectations—such as those from clients, regulators, and professional bodies—can further influence adoption behaviors.

2.2 Application of TAM to GenAI in Auditing

Applying TAM to GenAI adoption in auditing yields several critical insights:

1. **Perceived Usefulness:** Auditors report greater willingness to experiment with GenAI when they observe tangible effects, such as time savings, improved fraud detection, and the ability to analyze large or unstructured datasets efficiently (American Accounting Association, 2025; ScienceDirect, 2025).
2. **Perceived Ease of Use:** Barriers to adoption may arise if GenAI systems are seen as complex or opaque. Developers and audit firms must prioritize user-friendly design and comprehensive training to promote acceptance (Bakinsky, 2025).

Behavioral Intention: Ultimately, if GenAI systems are perceived as beneficial and accessible, auditors are likely to integrate them into day-to-day work, accelerating digital transformation in audit practices (Davis, 1989).

2.3 Synthesis and Research Gaps

Literature applying TAM to GenAI in auditing highlights both promise and challenges. Even as the perceived usefulness of GenAI is strong—especially in large or technology-driven audit environments—concerns about ease of use, explainability, and regulatory clarity can hinder widespread adoption. Few longitudinal studies track actual changes in practice post-adoption, and there remains a need for targeted research on how TAM

factors interact with ethical considerations and professional standards unique to auditing.

Methods

2.4 Research Design

This study employs a literature review methodology to collect, evaluate, and synthesize scholarly research on the adoption of Generative Artificial Intelligence (GenAI) in auditing, with specific focus on the Technology Acceptance Model (TAM). This approach provides a rigorous and transparent process for identifying trends, gaps, and consensus within the existing literature (Kitchenham & Charters, 2007).

2.5 Data Sources and Search Strategy

Academic publications were sourced from leading scholarly databases, including Scopus, ScienceDirect, IEEE Xplore, and publisher-specific journals (e.g., AAAHQ, The CAQ), using the following keywords:

1. "Generative Artificial Intelligence"
2. "Audit" OR "Auditing"
3. "Technology Acceptance Model"

The search was restricted to articles published between 2020 and 2025 to capture the most recent developments in GenAI adoption.

2.6 Inclusion and Exclusion Criteria

Inclusion criteria:

1. Peer-reviewed journal articles, conference papers, and reputable white papers;
2. Publications in English;
3. Studies that explicitly discuss GenAI in the context of auditing or related assurance activities;
4. Articles applying or referencing the Technology Acceptance Model (TAM).

Exclusion criteria:

1. Non-English publications;
2. Papers focusing only on general AI or not specific to GenAI;
3. Non-scholarly or non-peer-reviewed sources.

2.7 Article Selection and Data Extraction

The initial search conducted across Scopus, ScienceDirect, IEEE Xplore, and leading journal publishers yielded over 150 records for the period 2020–2025. After removing duplicates and screening for relevance based on titles and abstracts, 34 articles remained. Upon full-text review using the inclusion and exclusion criteria, 23 peer-reviewed articles were deemed directly relevant—they discuss Generative Artificial Intelligence in the context of auditing and apply or reference the Technology Acceptance Model (TAM).

These 23 articles formed the core dataset for analysis in this literature review, ensuring comprehensive coverage of recent developments and scholarly perspectives at the intersection of GenAI adoption in auditing and TAM.

2.8 Data Analysis

Extracted data were synthesized using a narrative approach, grouping information by central TAM constructs (perceived usefulness, perceived ease of use, behavioral intention) and mapping the main themes, findings, and gaps reported in the literature. Methodological rigor and relevance were assessed to ensure the robustness and validity of the synthesis.

3. Results and Discussions

3.1 General Trends in GenAI Adoption in Auditing

The literature demonstrates a rapidly increasing academic and professional interest in the application of Generative AI within the auditing sector, especially since 2022. Most of the reviewed articles highlight a sharp increase in experimental projects, pilot studies, and early implementations of GenAI for tasks such as automated documentation, fraud detection, pattern recognition, and risk analysis (Kokina, 2025; Smith & Ivanov, 2025). The Big Four accounting firms are identified as proactive leaders in integrating GenAI-driven tools into their audit processes.

3.2 Perceived Usefulness

Consistent with the Technology Acceptance Model, most auditors and firms report high levels of perceived usefulness for GenAI applications (Norzelan, 2024; Tang & Zhang, 2025). Benefits frequently cited include:

1. Enhanced ability to process large volumes of complex, unstructured data.
2. Improved fraud detection rates and anomaly identification.
3. Streamlined audit workflows and significant reductions in manual effort.
4. The ability to perform real-time analytics and support audit decision-making.

3.3 Perceived Ease of Use and Barriers

Opinions on ease of use are more divided. While some papers (Wan, 2025; Wijaya, 2025) highlight user-friendly interfaces and adaptive learning from GenAI systems, others (Shrivastava, 2025; Kim et al., 2025) point to frequent challenges:

1. Complexity of initial setup and training requirements.
2. Auditor skepticism regarding the reliability and transparency of AI outputs.
3. Concerns over data privacy, model explainability, and algorithmic bias.
4. A need for ongoing educational initiatives to motivate positive user attitudes.

3.4 Behavioral Intention and Adoption Factors

Findings indicate that behavioral intention to use GenAI is driven by organizational support, visible leadership commitment, and availability of technical training (Lee & Tan, 2024; Trisnadewi, 2024). Articles report that when management actively

participates in digital transformation and communicates the benefits, auditor resistance tends to decrease.

3.5 Moderating and Contextual Factors

Several studies identify moderating variables affecting TAM constructs:

1. Firm size and digital maturity positively influence adoption willingness (Smith & Ivanov, 2025).
2. Regulatory uncertainty and lack of clear guidance remain significant barriers (Chan & Goh, 2024; Yue & Wilson, 2025).
3. Cross-cultural differences affect comfort with GenAI and trust in automated outputs (Broström & Andersen, 2024).

3.6 Research Gaps and Future Directions

Despite rapid GenAI adoption, the literature points to several gaps:

1. Limited empirical studies in small and medium accounting firms.
2. Need for more rigorous, longitudinal research linking GenAI adoption with objective audit quality outcomes.
3. A lack of standardized metrics for evaluating GenAI performance in real audit settings.
4. Insufficient understanding of how GenAI impacts auditor independence, professional judgement, and the broader ethical climate.

Table 1. GenAI in Auditing: TAM Analysis

TAM Element	Key Benefits	Key Challenges
Perceived Usefulness (PU)	1. Enhanced fraud detection accuracy 2. Efficient processing of large and unstructured data 3. Automation of repetitive audit tasks 4. Improved audit quality and decision support	1. Uncertainty about AI outcome reliability 2. Limited transparency and explainability 3. Data privacy and security concerns
Perceived Ease of Use (PEOU)	1. Intuitive GenAI interfaces 2. Reduced manual workload 3. Adaptive learning and user support	1. Complex initial setup and integration 2. Need for substantial user training 3. Compatibility issues with legacy systems
Behavioral Intention (BI)	1. Visible leadership and	1. Auditor skepticism and

	organizational support	resistance to change
2.	Positive auditor attitudes toward innovation	2. Regulatory uncertainty
3.	Ongoing training and technical support	3. Variability in digital maturity across firms

4. CONCLUSIONS

This literature review demonstrates that the adoption of Generative Artificial Intelligence (GenAI) in auditing has grown rapidly, particularly since 2022. The majority of studies agree that the perceived usefulness of GenAI is high among auditors and organizations: GenAI has proven effective in increasing efficiency, improving audit effectiveness, enabling large-scale data analysis, and enhancing fraud detection and audit decision-making.

However, the level of perceived ease of use remains varied. While some auditors benefit from GenAI's intuitive interfaces, others face challenges with the complexity of initial setup, extensive training requirements, and concerns about algorithm transparency and bias. Principal barriers include doubts regarding the reliability of AI outputs, data privacy and security issues, as well as infrastructural and digital maturity limitations—especially in medium and small audit firms.

In terms of behavioral intention, organizational commitment, visible leadership support, and adequate technical training significantly boost auditors' willingness and readiness to adopt GenAI. Nevertheless, auditor resistance to change and regulatory uncertainty remain key obstacles.

Overall, GenAI holds considerable promise for enhancing the quality, efficiency, and scope of audit work. Yet, the success of its integration is strongly influenced by human resource readiness, organizational culture, regulatory clarity, and ongoing education to address challenges of transparency, reliability, and ethics. This review also highlights the need for further research, particularly longitudinal and empirical studies that objectively assess the impact of GenAI on audit outcomes across various organizational contexts.

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