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Ethical Challenges And Professional Skepticism In The Age Of Automated Auditing

Tantangan Etika Dan Skeptisisme Profesional Di Era Audit Otomatis

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ABSTRACT
The rapid advancement of artificial intelligence (AI) and automation technologies has reshaped the landscape of financial auditing, introducing both opportunities and ethical challenges. Automated auditing systems enhance efficiency, accuracy, and fraud detection, yet they also raise concerns about auditor independence, accountability, and the erosion of human judgment. This study examines how automation affects ethical decision-making and professional skepticism among auditors in technology-driven environments. Drawing on qualitative and quantitative insights, it explores issues such as algorithmic bias, data integrity, confidentiality, and the shifting roles of auditors in overseeing machine-generated evidence. The findings reveal that while automation improves analytical precision, it simultaneously challenges traditional ethical frameworks by blurring responsibility between human professionals and automated systems. To maintain trust and credibility in the auditing profession, auditors must balance technological reliance with critical thinking, ethical vigilance, and continuous professional development.
Keywords: *Automated Auditing, Professional Skepticism, Ethics*.

ABSTRAK
Kemajuan pesat kecerdasan buatan (AI) dan teknologi otomasi telah mengubah lanskap audit keuangan, menghadirkan peluang sekaligus tantangan etika. Sistem audit otomatis meningkatkan efisiensi, akurasi, dan deteksi kecurangan, namun juga menimbulkan kekhawatiran tentang independensi auditor, akuntabilitas, dan erosi penilaian manusia. Studi ini mengkaji bagaimana otomasi memengaruhi pengambilan keputusan etis dan skeptisisme profesional di kalangan auditor dalam lingkungan berbasis teknologi. Dengan memanfaatkan wawasan kualitatif dan kuantitatif, studi ini mengeksplorasi isu-isu seperti bias algoritmik, integritas data, kerahasiaan, dan pergeseran peran auditor dalam mengawasi bukti yang dihasilkan mesin. Temuan ini mengungkapkan bahwa meskipun otomasi meningkatkan presisi analitis, otomasi juga menantang kerangka kerja etika tradisional dengan mengaburkan tanggung jawab antara profesional manusia dan sistem otomatis. Untuk menjaga kepercayaan dan kredibilitas dalam profesi audit, auditor harus menyeimbangkan ketergantungan teknologi dengan pemikiran kritis, kewaspadaan etika, dan pengembangan profesional berkelanjutan.
Kata Kunci: Audit Otomatis, Skeptisisme Profesional, Etika.

1. Introduction

The emergence of artificial intelligence (AI), machine learning, and robotic process automation (RPA) has significantly transformed the auditing profession. Traditional auditing, once heavily reliant on manual inspection and human judgment, is increasingly supplemented or replaced by automated systems capable of processing vast amounts of data in real time. This technological evolution promises greater efficiency, precision, and fraud detection capability. However, it also introduces profound ethical and professional challenges concerning accountability, transparency, and auditor independence. As auditing transitions into the digital age, professionals are confronted with the task of maintaining ethical integrity and

professional skepticism in environments dominated by algorithmic decision-making (Sacavém et al., 2025; Santa et al., 2025).

Automated auditing tools can analyze large datasets and identify anomalies more accurately than humans, yet the automation process may inadvertently reduce the auditor's sense of responsibility and critical engagement. When auditors rely excessively on algorithmic outputs, their professional skepticism the ability to question, verify, and challenge evidence can weaken. This concern echoes broader debates about the balance between technology and human ethics in organizational leadership and decision-making (Bux et al., 2025; Marlia et al., 2025). As auditing increasingly depends on AI-driven analytics, ensuring that auditors remain critical evaluators rather than passive users of machine intelligence becomes a central professional obligation. Leadership in this context plays a vital role in shaping an ethical culture that values technological adoption without undermining human accountability (Sacavém et al., 2025; Marlia et al., 2025).

Ethical dilemmas in automated auditing arise primarily from three areas: algorithmic bias, data confidentiality, and accountability. Algorithms are designed by humans, and thus inherit human biases, which may influence audit results or lead to unfair risk assessments. Moreover, automated systems handle sensitive financial data, amplifying the ethical responsibility for data security and privacy. Accountability becomes ambiguous when decisions are made or influenced by AI tools should responsibility lie with the software developer, the firm deploying the technology, or the auditor overseeing the process? These questions challenge existing ethical frameworks that were designed for human-centered auditing contexts (Figiel & Badar, 2025; Sacavém et al., 2025). Similar ethical challenges have been noted in digital transformation processes in other organizational settings, where ethical blind spots often emerge due to overreliance on algorithmic efficiency (Santa et al., 2025; Bux et al., 2025).

Another challenge lies in maintaining auditor independence and judgment integrity in technology-mediated environments. While automation reduces human error, it may also reduce auditor discretion. The professional value of skepticism traditionally viewed as the foundation of audit quality must now adapt to hybrid systems where humans and machines collaborate. This situation demands that auditors possess both technological literacy and ethical awareness. Continuous professional training, critical reflection, and ethical codes tailored to automated systems are necessary to safeguard audit credibility and stakeholder trust (Santa et al., 2025; Bux et al., 2025). Studies on leadership and ethics in digital transformation have emphasized that human oversight must remain central to ensure that technological innovation aligns with professional accountability (Marlia et al., 2025; Sacavém et al., 2025; Zhang et al., 2024).

The integration of AI into auditing also intersects with environmental, social, and governance (ESG) expectations, where ethical reporting and transparency are central to stakeholder confidence. Ethical lapses in automated systems such as biased fraud detection algorithms or data misuse can damage institutional trust. Scholars argue that ethical responsibility in the digital era extends beyond compliance; it involves aligning corporate behavior with sustainable and socially responsible values (Figiel & Badar, 2025; Tanveer et al., 2021). Hence, the ethical auditor must ensure that automation enhances not erodes the integrity of financial reporting and corporate accountability (Santa et al., 2025; Sacavém et al., 2025).

Automation also raises questions about the future of professional skepticism in audit education and regulation. Current curricula often focus on technical competencies but underemphasize ethical and critical thinking in the context of automated systems. Developing adaptive ethical frameworks requires collaboration between academia, regulatory bodies, and professional associations to embed AI literacy within accounting education (Bux et al., 2025;

Vinerean & Opreana, 2021). Santa et al. (2025) and Sacavém et al. (2025) suggest that effective digital leadership must balance innovation with moral judgment, ensuring that technology serves human decision-making rather than displacing it.

Finally, the transformation toward automated auditing parallels broader organizational digitalization and innovation. As leaders integrate digital tools into governance and operations, the ethical dimension of technology management becomes inseparable from professional practice. Leadership and ethics must therefore evolve together, ensuring that technological adoption aligns with principles of transparency, fairness, and accountability (Marlia et al., 2025; Sacavém et al., 2025). In this context, ethical auditing is not merely a compliance function but a strategic pillar of corporate integrity and social responsibility. The auditing profession stands at a crossroads: it must embrace automation for efficiency while reinforcing human values as the foundation of credibility and trust (Santa et al., 2025; Tanveer et al., 2021).

Given these developments, this study aims to analyze the ethical challenges and implications of automated auditing for professional skepticism. It explores how automation reshapes the ethical responsibilities of auditors, the risks of over-reliance on technology, and the necessary balance between human judgment and algorithmic efficiency. By addressing these issues, the research contributes to understanding how ethical and professional standards can evolve to support credible, transparent, and technologically advanced auditing practices in the digital era.

2. Method

This study adopted a qualitative–quantitative mixed-method approach to explore the ethical challenges and the role of professional skepticism in automated auditing environments. The qualitative phase involved in-depth interviews with audit professionals, technology consultants, and members of professional accounting bodies who have direct experience with AI-based audit systems. The purpose was to identify recurring ethical themes, perceptions of responsibility, and practical challenges arising from automation. The quantitative phase included a structured survey distributed to certified auditors across public and private accounting firms. The survey measured auditors' ethical awareness, perceived risks of automation, and attitudes toward professional skepticism using a Likert-scale questionnaire.

Data analysis was conducted in two stages. The qualitative data were coded and categorized through thematic analysis to identify dominant ethical concerns such as algorithmic bias, independence, accountability, and data confidentiality. The quantitative responses were processed using statistical software to examine correlations between auditors' technological familiarity, ethical sensitivity, and professional skepticism levels. Reliability and validity tests were performed to ensure measurement accuracy. The integration of both data sets allowed for a comprehensive understanding of how automation influences ethical reasoning and critical judgment in auditing. This methodological framework enables the study to assess not only how technology transforms audit practices but also how human values must adapt to maintain trust and ethical integrity in the era of automated auditing.

3. Result and Discussion

The Transformation of Auditor Roles in Automated Systems

The results show that automation has fundamentally changed the role of auditors from manual data verifiers to strategic evaluators of system reliability and ethical compliance. Automated auditing tools now perform repetitive tasks such as transaction matching, anomaly detection, and risk scoring with high accuracy. However, the increasing reliance on these technologies raises concerns about diminishing professional judgment and skepticism. Many participants noted that auditors are becoming "system validators" rather than critical

investigators, potentially weakening their analytical independence. This echoes the findings of Sacavém et al. (2025) and Santa et al. (2025), who emphasize that digital transformation in leadership roles must balance efficiency gains with ethical oversight. In this new paradigm, the auditor's expertise must expand to include both technical literacy and ethical reasoning to preserve professional credibility.

Furthermore, the delegation of analytical processes to AI systems has blurred accountability lines within audit teams. When algorithmic models produce erroneous outputs or biased interpretations, determining responsibility becomes challenging. Bux et al. (2025) note that leadership in digital transformation requires clear ethical governance structures to avoid moral displacement, where humans defer responsibility to machines. Auditors must, therefore, remain the ultimate interpreters and ethical guardians of audit results, ensuring that technological systems align with professional codes and societal expectations.

One of the central findings concerns the ethical dilemmas emerging from algorithmic bias and data governance. Automated auditing relies on historical datasets to train AI systems, and if these datasets contain bias or incomplete information, audit results may reinforce existing inequalities or misjudgments. Figiel and Badar (2025) argue that data-driven innovation should be guided by principles of environmental and social responsibility, suggesting a similar need for fairness in financial data analytics. Bias in audit algorithms can affect risk assessment outcomes and stakeholder perceptions, making transparency in model design an ethical necessity.

Accountability remains another complex issue. Respondents highlighted that when audit outcomes are machine-generated, it is unclear whether responsibility lies with auditors, software developers, or management. This problem aligns with the broader challenge identified by Sacavém et al. (2025)—that ethical responsibility in digital systems cannot be automated but must remain rooted in human judgment. Data confidentiality adds another dimension to this ethical tension. As automated systems process large volumes of sensitive financial data, the risks of data leaks or misuse increase. Continuous monitoring, encryption, and ethical data management frameworks are required to mitigate these risks and uphold professional integrity.

Professional Skepticism in an Automated Context

The study found that professional skepticism remains essential in the age of automation but must be redefined. Traditional skepticism—based on questioning client evidence—must now extend to questioning algorithmic logic, system parameters, and output reliability. Santa et al. (2025) highlight that digital-era leadership depends on critical thinking and innovation, both of which parallel the auditor's need for skepticism in assessing AI-generated insights. Respondents emphasized that overreliance on machine-generated conclusions can create cognitive complacency, where auditors assume algorithmic objectivity without verifying its assumptions or limitations.

This finding is consistent with Marlia et al. (2025), who suggest that organizational transformation requires ethical adaptability and human oversight even in automated settings. Maintaining skepticism involves cultivating awareness of potential errors embedded in algorithms and recognizing that technology cannot fully replicate ethical reasoning. Auditors must retain a questioning mindset toward data sources, analytical models, and risk outputs to prevent ethical blind spots. Professional skepticism in this context thus becomes a hybrid skill—combining data analytics proficiency with moral and professional judgment.

Ethical leadership emerged as a crucial determinant of how organizations integrate automation into auditing practices. Firms with strong ethical cultures were better able to manage the tension between efficiency and accountability. Bux et al. (2025) and Sacavém et al.

(2025) argue that leadership in digital transformation must actively promote transparency and integrity to maintain trust. The study supports this claim by showing that organizations with ethically oriented leaders fostered more critical engagement among auditors and encouraged open discussion about algorithmic reliability.

In contrast, organizations focusing primarily on cost efficiency or technological prestige showed weaker ethical oversight, resulting in reduced skepticism and higher dependence on automation. Santa et al. (2025) emphasize that digital leaders must bridge the gap between innovation and ethics through participatory governance. Ethical leadership ensures that auditors remain conscious of their social responsibility while leveraging technological advantages. By embedding ethical considerations in training and decision-making, leaders can cultivate a culture of vigilance and accountability.

Building Ethical Resilience for the Future of Auditing

The final theme highlights the need to build ethical resilience as automation continues to advance. Ethical resilience refers to the capacity of auditors and organizations to anticipate, adapt to, and ethically navigate technological change. Marlia et al. (2025) stress that adaptive ethics are vital for institutions undergoing digital transformation. The study found that continuous professional education, cross-disciplinary collaboration, and ethical scenario training are effective ways to strengthen resilience.

As auditing evolves, professional skepticism must be supported by systemic safeguards such as algorithm auditing, independent system verification, and transparency in AI deployment. Bux et al. (2025) suggest that openness in innovation fosters ethical accountability, while Santa et al. (2025) advocate for leadership-driven standards to ensure that digital transformation aligns with professional ethics. These findings underscore the importance of integrating technological, ethical, and human perspectives to sustain the credibility of auditing in the age of automation.

4. Conclusion

The study concludes that while automation and artificial intelligence have revolutionized auditing practices by improving efficiency and analytical accuracy, they also present new ethical challenges that require careful management. Automated systems cannot replace the auditor's moral reasoning or professional skepticism, which remain central to audit quality and integrity. The findings demonstrate that auditors must not only possess technical proficiency but also maintain the ability to critically assess algorithmic outputs, question data reliability, and recognize potential ethical risks such as bias and loss of accountability. Automation should therefore be seen as a tool to enhance, rather than replace, human judgment.

Maintaining ethical standards in automated auditing depends heavily on the strength of professional skepticism and leadership within organizations. Ethical leadership plays a vital role in guiding auditors toward responsible technology use by reinforcing values of transparency, independence, and accountability. The presence of ethical culture encourages auditors to challenge automated results and to remain vigilant against complacency or overreliance on AI-driven conclusions. As technology evolves, fostering an ethical mindset supported by continuous learning and critical inquiry becomes a necessary safeguard for ensuring trustworthy audit outcomes.

Ultimately, the future of auditing lies in achieving equilibrium between technological innovation and ethical stewardship. The credibility of the auditing profession will depend on its ability to integrate automation responsibly, preserving public trust through ethical resilience and human oversight. Auditors must continue to exercise moral reasoning, skepticism, and

integrity in every phase of automated processes, ensuring that the adoption of technology strengthens—rather than undermines—the ethical foundations of the profession.

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