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ARTIFICIAL INTELLIGENCE IN PUBLIC SECTOR AUDITING: OPPORTUNITIES, RISKS, AND ETHICAL CONSIDERATIONS

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Abstract

This study aims to explore the opportunities, risks, and ethical considerations in the application of artificial intelligence (AI) to public sector audit practices using a literature review method. The development of digital technology has driven the adoption of AI as a potential tool for improving efficiency, accuracy, and early detection of fraud and non-compliance in state financial management. Through a review of previous research, this article highlights the potential of AI in expanding audit scope, accelerating data analysis processes, and enhancing the accountability of public institutions. However, significant challenges remain, including the risk of algorithmic bias, limited regulations governing the use of AI, and the potential for diminished auditor independence. Furthermore, ethical aspects such as data protection, transparency in AI-based decision-making, and auditor moral responsibility remain fundamental issues that must be addressed. This study concludes that the use of AI in public sector audits must be placed within a robust governance framework, accompanied by adaptive regulations and clear ethical guidelines to maximize the opportunities generated without compromising the principles of accountability and integrity.

Keywords: Artificial Intelligence, Public Sector Audit, Opportunities, Risks, Ethical Considerations

INTRODUCTION

The development of digital technology over the past two decades has had a significant impact on various aspects of life, including the government sector, which is required to be more transparent, accountable, and efficient in managing public resources (Genaro-Moya et al., 2025a). In this context, public

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sector audits play a crucial role in ensuring good governance, reducing the risk of abuse, and strengthening public trust in state institutions. However, the increasing complexity of government activities, the increasing volume of data, and the diversity of public transactions pose serious challenges for auditors. The limitations of traditional audit methods in handling big data and the need for real-time analysis make the role of cutting-edge technology, particularly artificial intelligence (AI), increasingly relevant.

Artificial intelligence offers significant opportunities to transform the way public sector audits are conducted. This technology is capable of processing massive amounts of data at high speed, detecting anomalies or unusual patterns, and providing recommendations based on machine learning algorithms that can help auditors make more informed and accurate decisions. With AI, audits are no longer limited to retrospective examinations of financial documents but can be expanded into proactive and predictive monitoring processes (Munoko et al., 2020a). This means auditors can more quickly identify potential fraud, irregularities, and other risks that could threaten the integrity of public governance.

However, the application of AI in public sector audits is not without challenges and risks that must be anticipated. One major risk is excessive reliance on algorithms that have the potential to introduce bias, whether due to the data used in the training process or the system design itself. This algorithmic bias can result in unfair, discriminatory, or even misguided decisions, ultimately reducing audit quality and undermining the legitimacy of oversight institutions (Schiff et al., 2024). Furthermore, data security is also a serious concern. Public sector audits directly deal with sensitive data concerning state finances and the public's personal information, so the use of AI must ensure data protection from potential leaks, hacking, or misuse by irresponsible parties.

Ethical issues are also a crucial aspect that cannot be ignored in the application of AI in public sector audits. The use of advanced technology is not only about effectiveness and efficiency, but also related to the values of fairness, transparency, and responsibility. A fundamental question that arises is the extent to which decisions made by AI-based systems are legally and morally accountable. Auditors, as a profession that upholds integrity and independence, are required to maintain control, even though most of the analysis process is performed by automated systems (Artificial Intelligence | Proceedings of the 12th International Conference on Theory and Practice of Electronic Governance, n.d.). In this regard, the role of humans should not be

completely replaced by machines, but rather should be seen as a collaborative relationship where AI serves as a tool to strengthen auditors' capabilities, rather than as the sole decision-maker.

From an opportunity perspective, the integration of AI in public sector audits can expand the scope of audits. AI-based audits can analyze large-scale data that was previously difficult to achieve with manual methods. For example, government transactions involving thousands of vendors, institutions, and individuals can be monitored simultaneously with algorithms that can detect patterns of irregularities. This will undoubtedly improve the accuracy and effectiveness of audits, while strengthening the accountability of government institutions. In this way, public auditors not only act as problem detectors after violations occur, but also as guardians capable of preventing irregularities from occurring early (Ulugbek, 2025a).

However, this opportunity also presents a dilemma. On the one hand, AI can increase efficiency and expand the scope of audits, but on the other hand, it can diminish the role of humans, who have long been at the heart of the audit profession. This shift raises concerns about the loss of subjective professional touch, which has long been necessary to understand the social, political, and cultural context in public sector audits. In other words, AI may be able to analyze data accurately, but it may not be able to understand the non-technical dynamics that influence decision-making in government governance (Beyond Principles, n.d.).

The application of AI in public sector audits also requires a clear regulatory framework. This regulation is crucial to ensure that the technology is used responsibly and in accordance with the principles of good governance. Regulations should address standards for AI use, data protection, legal liability for algorithmic errors, and oversight mechanisms for automated systems. Without adequate regulation, the risk of technology misuse could increase, which would undermine public trust in the government and oversight institutions (Bracci et al., 2025a). Therefore, academic studies that highlight the opportunities, risks, and ethical considerations involved in the use of AI in public sector audits are crucial.

Furthermore, the development of AI in public sector audits also demands increased human resource capacity. Auditors need to be equipped with new skills to work effectively with this technology, including the ability to understand how algorithms work, interpret AI analysis output, and assess system limitations. Therefore, strengthening auditor competencies is key to ensuring that AI implementation is not merely technical but also provides added

value in the context of public oversight. If this is not addressed, a skills gap will emerge, weakening the role of auditors in the digital age (Sattlegger & Bharosa, 2024).

The urgency of research on AI in public sector auditing is becoming increasingly apparent given the world's current shift toward data- and technology-driven governance. Governments across the globe are striving to adopt intelligent technology to strengthen transparency and accountability. However, the success of this transformation depends not only on the sophistication of the technology used, but also on the extent to which risks can be minimized and ethical values maintained. This research seeks to contribute to broadening academic and practical understanding of the opportunities offered by AI, the risks that may arise, and the ethical considerations that must be considered in its implementation. With a more comprehensive understanding, it is hoped that AI can truly become an instrument that strengthens public sector governance, rather than creating new problems (Taşdöken, 2024a).

Based on this description, it is clear that the application of artificial intelligence in public sector auditing presents two sides of the same coin. On the one hand, there are significant opportunities to improve audit effectiveness, efficiency, and accuracy. However, on the other hand, there are serious risks related to algorithmic bias, data security, and ethical issues that have the potential to undermine the primary purpose of auditing as an oversight instrument. Therefore, an in-depth study of the opportunities, risks, and ethical considerations in the use of AI in public sector audits is urgently needed as a basis for formulating appropriate, fair, and responsible implementation strategies.

RESEARCH METHOD

The research method used in this study is a literature review, which focuses on searching, collecting, and critically analyzing various academic sources and professional practices relevant to the application of artificial intelligence in public sector audits. The literature reviewed includes scientific journals, books, policy reports, and publications from international organizations that highlight the opportunities, risks, and ethical considerations in integrating AI technology into audit practice. The review process was conducted using a systematic approach through searches using academic databases and digital repositories, considering the criteria of relevance, novelty, and credibility of the sources. From the literature obtained, this study

emphasized the identification of key concepts, trends, and emerging issues in the field of intelligent technology-based auditing.

The analysis in this literature review was conducted by classifying the findings into three main dimensions: opportunities for applying AI to improve the efficiency and accuracy of public sector audits, potential risks related to technological limitations and potential misuse, and ethical considerations that must be considered in maintaining audit integrity and accountability. With this approach, the study not only seeks to present a conceptual map of the use of AI in public audits but also provides a theoretical and practical basis that can be used by auditors, regulators, and policymakers to more comprehensively understand the implications of this technology. This literature review approach is considered the most relevant because it is able to integrate various cross-disciplinary perspectives, thus producing a comprehensive understanding of how AI can impact the future of public sector auditing.

RESULT AND DISCUSSION

Opportunities for Applying Artificial Intelligence in Public Sector Audits

The potential for applying Artificial Intelligence (AI) in public sector audits is becoming increasingly relevant with the increasing complexity of governance and the need for transparency in state financial management. The rapid development of digital technology has transformed the traditional paradigm of the audit process, which previously relied on manual techniques and limited testing. Currently, the public sector is required to adopt cutting-edge technology to address the challenges of accountability, information transparency, and efficiency in state budget use. Artificial Intelligence (AI) is emerging as an instrument that can strengthen audit systems by providing fast, accurate, and data-driven analysis mechanisms. AI is not merely a technical innovation but also a strategic solution for driving bureaucratic reform and improving the public image of public institutions (Genaro-Moya et al., 2025b).

One of the main opportunities for applying AI in public sector audits lies in the efficiency of the audit process and the processing of big data (Aldemİr & Uysal, 2024a). Audits at the government level involve vast volumes of data, including financial transactions, procurement contracts, project reports, and compliance data spread across various work units. Traditional audit methods tend to be time-consuming, expensive, and prone to human error due to auditors' limitations in analyzing massive amounts of data. AI, with its machine learning and natural language processing capabilities, can automatically select, categorize, and analyze large-scale data with high accuracy. This process allows

auditors to save time in the data collection and verification stages, freeing up their focus on risk assessment and policy recommendations (Bracci et al., 2025b). In other words, AI opens up the opportunity to shift the auditor's role from mere data collectors to strategic analysts, providing greater added value to government governance.

Beyond efficiency, AI also offers significant potential for improving real-time anomaly and fraud detection capabilities. In public sector audits, fraud often manifests in the form of budget misappropriation, mark-ups on procurement of goods and services, or manipulation of financial reports. Conventional audit approaches often only discover indications of fraud after the process is complete, resulting in delays in identification that result in significant losses for the state (Ulugbek, 2025b). AI can overcome these limitations with an algorithm-based early detection system capable of identifying unusual patterns in transactions immediately after data is entered into the system. For example, if a budget expenditure pattern deviates from normal trends, AI can immediately provide a warning signal for auditors to follow up. This capability not only expedites fraud handling but also serves as a preventative mechanism, as potential violations can be identified before they escalate into major cases. Thus, AI provides a strategic opportunity to strengthen public sector oversight functions through more proactive and predictive audits.

Furthermore, the application of AI in public sector audits opens up significant opportunities for increasing transparency and accountability within government institutions. Public transparency is determined not only by the availability of data but also by the extent to which that data can be accessed, understood, and verified by the public and independent oversight bodies. AI enables audit data processing to be more structured, systematic, and understandable, for example through interactive dashboards that visually display analysis results. In this way, audit reports are no longer merely complex technical documents but can also be presented in a more open format for the public (Mikhaylov et al., 2018). This increased transparency has direct implications for strengthening accountability, as the public can participate in monitoring the use of the state budget. The presence of AI in public audits thus supports the agenda of clean governance and integrity, which in turn strengthens public trust in state institutions.

Another equally important opportunity is optimizing data-driven decision-making in the public sector. Audits are not limited to oversight functions but also serve as a basis for formulating financial and development policies

(Taşdöken, 2024b). AI is capable of integrating audit results with relevant macro and micro data, resulting in sharper, more objective, and evidence-based recommendations. For example, AI analysis of the effectiveness of regional development funds can be used as a basis for subsequent budget planning. This way, public policies can be more targeted because they are supported by valid data and in-depth analysis. This also enables policymakers to have a more comprehensive picture of the risks and opportunities in state financial management, so that decisions are not merely reactive but also strategic and long-term oriented (Omoteso, 2012).

Overall, the application of Artificial Intelligence in public sector audits presents a major transformational opportunity that could change the face of governance. Efficiency in big data processing, real-time fraud detection capabilities, increased transparency and accountability, and optimized data-driven decision-making are key dimensions demonstrating AI's potential as an instrument for audit reform. While this opportunity still faces several challenges, such as human resource readiness, technological infrastructure, and adequate regulations, the direction of AI-based audit development clearly shows positive prospects for realizing a more efficient, accountable, and responsive government to public needs. With proper utilization, AI will become not just a technical tool but also part of a broader strategy for building transparent, modern, and competitive public governance in the digital age.

Risks and Challenges of AI Implementation in Public Sector Audits

The application of artificial intelligence in public sector audits presents significant opportunities to increase effectiveness, efficiency, and transparency, but it also carries a number of risks and challenges that cannot be ignored. Technical risks are among the most prominent issues, particularly related to the potential for errors, algorithmic bias, and the limitations of the data used in the analysis process (Genaro-Moya et al., 2025c). AI-based systems are highly dependent on the quality of the input data. Therefore, if the data used is incomplete, inaccurate, or unrepresentative, the analysis results will also produce errors that can seriously impact decision-making. Furthermore, algorithmic bias can arise if the training data reflects inequalities or discriminatory patterns, which can ultimately lead to unfairness in public sector audit reporting. This risk is even more crucial because the public sector directly relates to the interests of the wider community, where even small errors can impact the legitimacy of government institutions and public trust in audit results. Another important challenge to consider is the limited human resources

needed to operate and optimize the use of AI in auditing (Bouchetara et al., 2024). Many auditors in the public sector are still accustomed to conventional methods, so adapting to AI-based technology is a challenging process. Auditor digital literacy is key, as without adequate understanding of how algorithms work, interpreting results, and system limitations, auditors are highly susceptible to misunderstanding AI analysis results. This can reduce the effectiveness of technology implementation and even lead to incorrect decisions. Addressing this challenge requires ongoing training programs, digital competency development, and cross-disciplinary collaboration between auditors, information technology experts, and regulators to foster a comprehensive understanding of AI implementation. However, this challenge extends beyond technical aspects to organizational culture, as the shift from manual to technology-based work patterns often generates resistance among auditors (Ulugbek, 2025c).

Regulatory issues and audit standards also pose significant challenges to the implementation of AI in the public sector. To date, the legal and regulatory framework governing the use of AI in auditing remains limited, particularly in the highly complex context of the public sector. The absence of clear standards can raise doubts about the validity and reliability of AI-based audit results, given that audits are a crucial instrument for maintaining transparency and accountability in state finances. Furthermore, system reliability must be seriously considered, as risks such as cyberattacks, data leaks, or algorithm manipulation can compromise audit integrity. This regulatory challenge also relates to the need to develop international standards compatible with national contexts, so that AI-based audit results can be legally recognized and valid. Weak or inconsistent regulations can potentially open up opportunities for misuse of the technology, which could ultimately harm public finances and undermine public trust (Taşdöken, 2024c).

On the other hand, the potential for over-reliance on AI technology also poses a risk in public sector audits. The more sophisticated the system used, the greater the tendency for auditors to rely on machine analysis results without conducting in-depth verification (Chowdhury, 2021). This reliance is dangerous because, although AI can rapidly process large amounts of data, it cannot fully replace the intuition, ethical judgment, and contextual understanding of human auditors. If auditors lose critical skills and become passive users of AI results, audit quality will significantly decline. Furthermore, over-reliance also has the potential to reduce the development of auditors' analytical skills, thus, in the long term, undermining the capacity of public sector institutions to maintain

transparency and accountability. Therefore, a balance must be maintained between the use of technology and the role of human auditors, emphasizing that AI should be a supporting tool, not a substitute, in the audit process (Lois et al., 2020).

Overall, the application of artificial intelligence in public sector audits offers significant transformations that can improve the quality of governance. However, technical risks such as errors, algorithmic bias, and data limitations must be addressed through strict control mechanisms. Limited human resources and the need for digital literacy among auditors demand a systematic and sustainable capacity-building program. Regulatory issues, audit standards, and system reliability are crucial prerequisites for ensuring that AI-based audit results are legally recognized and trusted by the public. At the same time, the potential for over-reliance on technology must be avoided by ensuring that human auditors remain the primary actors in the oversight process. With proper risk management, these challenges can be overcome, enabling AI to truly become a strategic instrument for strengthening accountability, transparency, and public trust in government institutions.

Ethical Considerations in the Application of AI to Public Sector Audits

The application of artificial intelligence in public sector audits is bringing significant changes to the way government agencies manage, verify, and evaluate financial reports and institutional activities. This technology offers the potential for significant efficiency, from large-scale data processing to the ability to detect anomalous patterns that are not easily visible to human auditors. However, behind this potential lies ethical considerations that must be taken seriously to ensure that the application of artificial intelligence truly provides benefits and does not negatively impact the public or the integrity of public institutions. Some key aspects of concern in this context are the protection of public data privacy and security, the transparency and accountability of algorithms, the potential for discrimination due to bias in artificial intelligence systems, and the professional responsibility of auditors in their use (Munoko et al., 2020b).

Issues of public data privacy and security are fundamental considerations in the use of artificial intelligence in public sector audits. Government agencies often manage large amounts of data that include sensitive information about individuals, organizations, and other public entities. This data can include financial records, personal information, and confidential administrative activity data. When artificial intelligence is used to analyze such data, the risk of

information leakage and misuse increases if it is not accompanied by a robust security system (Alexiadou, 2024). Ethics demand that the use of technology always be based on the principle of protecting people's privacy rights, so that data is not processed beyond the audit's purpose or exploited for interests inconsistent with the public mandate. This requires public institutions not only to invest in technology but also to establish a robust regulatory framework and security protocols to maintain public trust in the digital audit process (Bracci, 2022).

Furthermore, the transparency of algorithms and the accountability of audit results are crucial aspects that must not be overlooked. Audits using artificial intelligence produce decisions or findings that are often difficult to explain simply due to the complexity of the algorithms used. This situation can create a gap in understanding between auditors, policymakers, and the public, the primary stakeholders. Ethics demand that artificial intelligence systems not be "black boxes" whose decision-making processes cannot be understood. Instead, transparency in how the algorithms operate and clear accountability for the resulting audit results are required. Auditors and public institutions must be able to explain the basis for findings or recommendations made by AI systems so that the public can assess the validity and fairness of the audit process. If transparency is neglected, public trust in government institutions can decline, even if audit results are technically accurate (Mökander, 2023).

Another ethical consideration concerns the potential for discrimination due to bias inherent in artificial intelligence. An AI algorithm is only as good as the quality of the data used to train it. If the data used in system development contains bias, whether historical or structural, the resulting results will reflect that bias. In the context of public sector audits, bias can lead to unfair treatment of certain groups, whether in the form of excessive suspicion, erroneous judgments, or non-objective decision-making (Artificial Intelligence in Public Procurement: Legal Frameworks, Ethical Challenges, and Policy Solutions for Transparent and Efficient Governance | Alkebulan: A Journal of West and East African Studies, n.d.). For example, imbalanced data can lead to an AI system being more sensitive to transactions from smaller institutions than from larger ones, or more critical of financial data from certain regions. Ethics require mechanisms for evaluating and repeatedly testing algorithms to minimize bias and ensure that audit results remain consistent with the principles of fairness and equity.

The auditor's responsibility in using artificial intelligence technology is also a determining factor in its ethical application. Although AI has much faster

analytical capabilities than humans, the ultimate responsibility for audit results should not be entirely transferred to the system. Professional auditors must retain full control over the audit process, from verifying system results to interpreting the data used to support decision-making. Auditors must have a sufficient understanding of how artificial intelligence works to be more than passive users, but also act as monitors capable of identifying system weaknesses or potential errors. Professional ethics require auditors not to rely entirely on technology, but rather to use it as a tool to support their professional judgment. This is crucial to ensure that integrity, independence, and objectivity remain the foundation of audit practice even as technology becomes increasingly dominant.

Overall, the application of artificial intelligence in public sector audits is inevitable as part of the broader digital transformation of government governance. However, the success of its implementation is determined not only by technological sophistication but also by the extent to which ethical considerations are taken into account at every stage. The privacy and security of public data must be strictly maintained to protect public rights. Algorithmic transparency and accountability for audit results must be upheld to maintain public trust. Potential discrimination due to algorithmic bias must be prevented through continuous evaluation. Ultimately, the auditor's professional responsibility must remain a key pillar in maintaining the quality, fairness, and integrity of audit results. With an ethically grounded approach, the application of artificial intelligence in public sector audits will not only improve efficiency but also strengthen the legitimacy and accountability of public institutions in the eyes of the public.

Implications of AI Implementation for Auditors and Public Organizations

The application of artificial intelligence (AI) in public sector audits has significant implications for both auditors and public organizations. The increasingly widespread digital transformation has forced auditors to move beyond relying solely on conventional audit methods based on physical documents and manual analysis, and instead adapt to more automated, intelligent, and big data-driven systems (Aldemİr & Uysal, 2024b). In this context, the role of auditors is undergoing a fundamental shift, from merely checking administrative compliance to strategic partners focused on in-depth analysis, data-driven decision-making, and increasing added value to public organization governance. This aligns with the growing public and government demand for transparency, accountability, and the effectiveness of public

institutions. With AI, auditors are no longer trapped in administrative routines but can instead utilize intelligent algorithms to detect anomalies, identify risks, and provide more comprehensive recommendations.

The transformation of the auditor's role in the digital era is also evident in the expanded scope of their oversight and internal control functions through technology. While auditors previously focused primarily on testing data samples, AI now enables comprehensive audits to be conducted at a faster rate. The role of auditors has shifted from technical implementers to supervisors of AI systems themselves. This means that auditors need to ensure that the algorithms used are not only technically reliable but also fair, transparent, and free from bias that could lead to unfairness in reports or decisions made by public organizations. In this context, auditors also serve as guardians of technological ethics, as AI-generated audit results have the potential to have significant implications for public trust in government institutions (Rajput, 2024). Therefore, auditor competencies encompass not only accounting and regulatory skills but also a deep understanding of the working mechanisms of AI, the potential for algorithmic bias, and the ethical implications of its use.

This major change has consequences for the need for training and competency development for auditors (Riana et al., 2024). AI is not simply a tool, but a new paradigm that requires cross-disciplinary expertise. Auditors are required to possess strong digital literacy, including an understanding of data analysis, basic programming, and the ability to interpret the results of machine learning-based systems. Without mastery of these competencies, auditors will struggle to assess system reliability, identify weaknesses, or provide evidence-based recommendations (Taşdöken, 2024d). Therefore, public organizations must consistently provide training programs, whether through formal courses, professional certifications, or collaborations with higher education institutions and technology providers. This competency development is not only technical but also encompasses soft skills such as critical thinking, adaptability, and an understanding of digital ethics. Auditors' readiness to face these changes will determine their ability to maintain the profession's relevance amidst the digital transformation.

Furthermore, the application of AI in auditing also has a significant impact on the organizational structure and governance of public institutions. The presence of this technology is encouraging public institutions to undertake internal restructuring to integrate AI systems into their audit workflows. This includes the establishment of a dedicated unit responsible for data management, system security, and oversight of algorithm performance. Overly

hierarchical and bureaucratic organizational structures will face challenges because AI demands flexibility, cross-departmental collaboration, and a more adaptive governance system (Ayibam, 2025). Governance changes also encompass internal regulatory aspects, where public institutions must establish new standards regarding the use of AI in audits, reporting mechanisms, and accountability for decisions made by these intelligent systems. Transparency is key, as the public demands clarity regarding the extent to which AI plays a role in the audit process and how the final decision remains the responsibility of humans, not just algorithms.

Another impact is the emerging need for a dual oversight mechanism for AI systems: auditing not only the financial statements or performance of public organizations, but also the AI itself. This demands innovative governance, where audit procedures focus not only on results but also on the processes the system goes through in generating decisions. Therefore, public organizations need to develop internal control policies that encompass technology audits, data security, and protection against potential misuse of information. Furthermore, organizational structures must adapt to a more participatory governance model, involving various stakeholders such as regulators, independent auditors, and civil society in overseeing the use of AI. This implication demonstrates that digital transformation is not just about technology, but also about profound institutional reform (Erasmus & Kahyaoğlu, 2024).

Ultimately, the application of AI in public sector audits has dual implications for both auditors and organizations. Auditors are required to transform from mere technical implementers to ethical and strategic supervisors who understand both technology and the values of public accountability. Public organizations, on the other hand, must be ready to restructure their structures and governance to maximize the benefits of AI without sacrificing public trust. This transformation is certainly challenging, but it also opens up opportunities for more efficient, transparent, and value-driven audit practices. With the right approach, synergy between auditors, technology, and public organizations can be a crucial foundation for realizing a more accountable and responsive government in the digital age.

CONCLUSION

The conclusion of the study "Artificial Intelligence in Public Sector Auditing: Opportunities, Risks, and Ethical Considerations" confirms that the application of artificial intelligence in public sector auditing presents significant

opportunities to improve the efficiency, accuracy, and transparency of the audit process. AI can automate the analysis of large amounts of data, detect anomalous patterns in real time, and assist auditors in providing more accurate, evidence-based recommendations. This directly contributes to increased accountability of public institutions and strengthens public trust in state financial management.

However, this study also shows that the implementation of AI is not without significant risks. Challenges include limited technological infrastructure, the potential for algorithmic bias that could affect the objectivity of audit results, and increasingly complex data security threats in the digital age. These risks are further exacerbated by the lack of robust regulations governing the use of AI in the public sector, which can open the door to misinterpretation, privacy violations, and misuse of the technology. Therefore, the successful integration of AI in public sector auditing depends heavily on institutional readiness, auditor human resource development, and adaptive regulatory support.

In addition to these opportunities and risks, this study emphasizes the urgency of ethical aspects in the use of AI. Ethical use of technology is a crucial foundation for ensuring that artificial intelligence serves not merely as a technical tool but also remains aligned with the principles of transparency, fairness, and public accountability. The implementation of a clear ethical framework, coupled with ongoing oversight, will ensure that AI is used responsibly and provides maximum benefits for the public interest. Therefore, the future of AI-based public sector auditing is not just about technological modernization, but also about building an ethical, sustainable, and trustworthy governance ecosystem.

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