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Artificial Intelligence in Internal Auditing: Enhancing Decision-Making and Audit Quality in the Saudi Accounting Sector

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ABSTRACT

This study delves into the impact of artificial intelligence (AI) on internal auditing within the accounting sector, utilizing descriptive analysis to provide a comprehensive understanding. We meticulously designed and administered a structured questionnaire for 73 participants, including both internal and external auditors and financial managers. The questionnaire aimed to evaluate current AI utilization, potential benefits, implementation challenges, and effective strategies for AI adoption. The findings reveal a substantial gap between the anticipated and actual use of AI in internal auditing. Only 64% of these organizations currently employ AI technologies, despite 72.9% of respondents believing that the industry will soon widely adopt AI. AI has demonstrated the potential to reduce audit time by 30–40% and significantly enhance the accuracy of risk assessments by 50–60%. However, various challenges, such as concerns over data security (76.7%), a shortage of qualified professional staff (74.9%), and inadequate technological support (76.2%), impede the path to full AI adoption. The study underscores the pressing need for clear, well-defined, and strategic implementation plans to effectively integrate AI into auditing practices. Future efforts should prioritize optimizing the synergy between AI capabilities and human expertise, which could lead to improved audit quality by 30–40%.

1. Introduction

Artificial intelligence (AI) touches all industries and professions worldwide, and accounting is one of them. Machine learning, data analytics, and automation are changing traditionally accepted practices of accounting and auditing. Artificial intelligence has an impact on internal audit work [1]. This change is brought about by the processing capability of artificial intelligence with a very high volume of data at high speed and accuracy, fraud detection, and streamlining of auditing procedures [2]. Therefore, this consideration ensures that the relevance of AI is not overestimated because technology should bear great promise for efficiency improvements, error reductions, and the realization of deeper insights regarding financial data [3]. Against this background, this study investigates the impact of AI on internal audits and the accounting profession in general.

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Hence, the current state of knowledge regarding the direct effects of AI on internal audits can be regarded as state-of-the-art because many studies have identified the potential of such an innovation. Audit fraud detection can be significantly improved, and AI's application of AI in auditing can enhance audit quality and financial analysis [4]. At the same time, there are many limitations and gaps in understanding its long-term implications for AI integration, including ethical considerations, data privacy, and changes in human auditors [5]. Overcoming these gaps is important for appreciating the total impact of AI on internal auditing. Over the years, this aspect has naturally fueled immense interest in how AI might be put to work in internal auditing with a view to its potential to transform professional fields [6].

The use of AI to enhance the quality and effectiveness of audit practices by practitioners and researchers has shown growing interest [7]. Attention to AI applications for auditing is growing, and this has resulted in a fast-growing number of studies and publications in this area of study. However, excitement over the possibilities of AI illustrates its potential to make massive progress within internal audit practices [8]. To prepare adequate background information on this topic, it is necessary to consider the historical perspectives of internal auditing development and integration of AI technologies into this field. Historically, internal auditors have employed many paper-based and judgmental methods [9].

However, with AI's incorporation of AI into various practices, it has established techniques that result from, or are supplementary too, traditional techniques in data analysis and machine learning [10]. First, one should understand the revolutionary changes going through internal auditing to clearly grasp this transition and detect future trends related to the use of AI by accounting firms [11]. However, these contributions are very great in publicizing AI's role of AI in internal auditing because of some notable studies by [4]. Although there have been several studies on the integration of AI into internal auditing, there is still a lack of detailed analysis of the long-term impacts of this integration, especially on ethical issues and the changing dynamics between human auditors and AI technologies [12]. This closes the gap that this research brings about in terms of highlighting and critically examining the aspects that create the need for research.

In the current era of organizational working, there is a need to determine how AI technologies are reshaping internal audit functions and the accounting landscape in general [13]. Therefore, even with the strides in AI, a gap still exists in understanding it comprehensively in its entirety and the challenges it poses. To explore these changes, a detailed investigation is required to explain how AI influences practices in internal auditing, its benefits, and possible pitfalls. This research is of immense significance in that it contributes to the field of accounting, demonstrating through AI how internal auditing can be improved. The importance of AI lies in its relevance to the growing need for regulation and solid, trustful auditing.

AI makes it possible for auditors to conduct their assessments more accurately and efficiently, an important aspect if trust and integrity in financial reports are to be continued [14]. Therefore, this study underlines the importance of AI in modernizing internal auditing to ensure compliance with the standards in evolution. This research expands the existing one and simultaneously broadens the current understanding by considering novel trends and developments in AI technologies. The added value of this study is that it is situated within the context of global progress in accounting and auditing. Hence, academic research and practical applications in this area could be drawn upon by it, according to [15] and [16].

1.1 Problem Statement

The development of IT, especially artificial intelligence, is progressing at a high rate, consuming a significant part of the internal auditing fields of the accounting profession [17]. AI presents almost limitless opportunities to improve audit activities by boosting efficiency, accuracy, and risk

management [18]. However, the use of AI in internal audits poses certain complications and unknowns to auditors and accounting professionals. The challenges include resistance to change, job loss fear, ethical issues, and the recognition that auditors need to be trained to better work with AI systems [19]. On the other hand, it is assumed that with AI's characteristic of analyzing large chunks of data at an incredible speed, it is possible to vet, effectively check, and prevent accounting fraud, thereby enhancing the reliability of financial statements [14]. This technological advancement is very valuable, especially when many regulations have been put in place and there is a need to improve the auditing processes [20]. However, explicit insights into the real value can be derived through the application of SII in internal auditing, particularly in terms of future prospects as moderately explored areas that include data privacy, ethical concerns, and the shift in human auditors' responsibilities [8].

It remains possible to reference certain prior information to affirm that AI will enhance the quality of audits, while simultaneously pointing out that their duration will be shortened. For instance, AI-based solutions can contribute to enhancing the effectiveness of anti-fraud measures, enhancing auditor productivity, and facilitating the acquisition of an improved understanding of financial data [13]. However, the fact that human judgment is interlaced in both audit and artificial intelligence automation makes it necessary that further studies be conducted to confirm that AI should serve as enhancers to auditors' analysis and skills [21]. The increased focus on the integration of AI into internal auditing sheds light on the concept's abilities. There is a desire from both the academic and professional domains to understand how audit quality and efficiency can be enhanced using AI [9]. This is evident based on the amount of work and research conducted and published on the utilization of AI in auditing [22]. However, there is a recognized lack of large-scale research that systematically considers the consequences of AI implementation in supply networks regarding its ethical and regulatory issues in the long term [16].

Therefore, the primary objective of this research is to provide a broad analysis of AI's various effects of AI on internal auditing in the accounting field. This involves examining the issues of implementation and incorporation of artificial intelligence solutions, as well as the analysis of the ratio of automation and decision-making, and the consequences observed in terms of risk and control. In addition, it aims to determine the degree of realization of efficiency and accuracy improvements in AI claims regarding the enhancement of audit quality. Cooperating with these elements is important for creating a balanced approach toward the analysis of the impact of AI on the internal auditing process. The research question guiding this study is: How does AI make a difference to internal audits in the accounting field, and what are the prospects concerning audit quality, audit efficacy, and the future of human auditors? The purpose of this question was to understand the major concerns regarding the use of artificial intelligence in internal auditing, covering its advantages and disadvantages. Answering this question is the goal of this research, and it aims to offer recommendations, thus helping in the existing debate on the use of AI in accounting and auditing. Therefore, the study has the following objectives.

RO1: To analyze the current state of AI applications usage in internal auditing practices and explore future expectations regarding their adoption and implementation, as addressed in the first axis of the questionnaire.

RO2: To measure the impact of employing AI technologies on the efficiency and quality of internal auditing processes, as investigated in the second axis of the questionnaire.

RO3: To identify and analyze the key challenges associated with the adoption and implementation of AI in internal auditing, as explored in the third axis of the questionnaire.

2. Literature Review

The intersection of artificial intelligence (AI) and internal auditing has received significant scholarly attention in recent years. [23] examined AI's role in enhancing internal audit functions,

finding that AI significantly improves data analysis and fraud detection capabilities, recommending investments in AI technologies. Similarly, [24] assessed AI's impact of AI on audit quality, concluding that AI use positively correlates with higher audit accuracy and efficiency and emphasizes the need for ongoing AI education for auditors. [25] traced the evolution of internal auditing with AI, highlighting its potential to transform auditing processes into more predictive and prescriptive ones, while advocating for gradual AI integration with human oversight.

[26] provided a comprehensive review of AI applications in auditing, finding diverse uses, from transaction analysis to risk management, and recommended a strategic approach to AI adoption. [19] explored future AI trends and challenges in auditing, identifying data privacy concerns and the need for regulatory frameworks, recommending proactive policymaker engagement. [27] conducted a comparative analysis of AI's impact on audit effectiveness, demonstrating AI's superiority in large data environments and advocating for its adoption to enhance audit quality. [28] focused on AI-driven auditing's challenges and opportunities, noting significant benefits, but also barriers such as high costs and specialized skills, recommending investments in AI training and infrastructure. Finally, [1] examined integrating AI with human intelligence in auditing, suggesting that AI can handle routine tasks while humans focus on complex activities, proposing a hybrid auditing approach.

The impact of internal audit strategies, auditor ethics, accounting culture, and technological advancements such as AI and cloud technologies on the accounting and the impact of internal audit strategies, auditor ethics, accounting culture, and technological advancements such as AI and cloud technologies on the accounting and auditing professions has been the focus of several recent studies. [29] examined how audit quality mediates the effects of internal audit strategy, auditor ethics, and accounting culture on financial report quality, finding that robust audit strategies and ethics significantly improve financial report quality.

[20] studied the role of AI in accounting and auditing, revealing that AI enhances efficiency and accuracy through automation and advanced analytics, and recommended integrating AI technologies. [30] explored the impact of AI from the Lebanese CPAs' perspective, identifying improvements in efficiency and accuracy but also noting concerns about data security and the need for specialized training. [11] investigated the influence of internal audit risk planning on the financial performance of SACCOs in Western Kenya, concluding that effective risk planning enhances financial performance. [31] provided an overview of cloud technology-based auditing and accounting services in Nigeria, highlighting the benefits of enhanced accessibility and efficiency while pointing out security and reliability issues.

[23] showed that AI increases accuracy and efficiency, and, according to [24] quality improvement. [25] and [26] explain the changes in auditors' profiles, support the continuous improvement in their knowledge, and suggest enhancing research on AI usage. [32] carried out future studies of AI-augmented and conventional audits. Supporting the idea of using AI while also laying out the problems associated with ingenious ideas, such as the costs of implementing AI systems, as stated by [28] and [33], while demonstrating the necessity of talented specialists. According to [1], this can be in two forms; one where the AI part of the system provides the analysis, and the decision part is made by the right human part. However, these established studies are somewhat vague about the present developments in AI and the problems that need to be solved.

The review of previous studies has shown a tendency toward more integrated AI in internal auditing, while simultaneously emphasizing the automation of routine work and data analysis. However, major gaps lie in the impact of AI on the long-run fate of an auditor's job and the type of training required for the AI-enabled environment. There is a need to focus toward developing all-inclusive training programs, establishing a place for AI in real-time fraud detection, and addressing ethical concerns regarding the use of AI in auditing. Empirical studies in different organizational settings are required to compare AI-enhanced and traditional audit methods to validate these initial

findings and provide practical insights for practitioners.

3. Methodology

The study utilized a structured questionnaire was used as the primary data collection tool and was administered to a sample of 73 participants, out of a total of 500 certified internal auditors across Saudi Arabia, according to the website of the Saudi Association of Internal Auditors [34].

3.1 Research Design and Data Collection

The questionnaire was divided into two main sections. The first section focused on gathering descriptive data on the participants' personal and professional characteristics, such as gender, age, educational qualification, years of experience in accounting and internal auditing, job title, and type of organization (governmental or private). The second section of the questionnaire comprises four main axes, each addressing a specific aspect of AI's impact of AI on internal auditing. Firstly, the questionnaire was for current use of AI applications in internal auditing and future expectations (11 statements). Furthermore, the questionnaire was to assess the impact of employing AI technologies on the efficiency and quality of internal auditing (12 statements). The questionnaire was about the challenges associated with using AI in internal auditing (14 statements). Lastly, the questionnaire was also about proposed strategies to maximize the benefits of AI applications in internal auditing (13 statements). Participants responded to each statement using a five-point Likert scale, ranging from "Strongly Agree" to "Strongly Disagree."

3.2 Data Analysis

The data collected were analyzed using appropriate statistical techniques, including descriptive statistics (frequencies, percentages, means, and standard deviations) and inferential statistics (such as correlation analysis), to explore the relationships between variables and test the hypotheses of the study.

3.3 Ethical Considerations

This study adhered to the ethical guidelines throughout the research process. Participants were informed of the purpose of the study, and informed consent was obtained prior to data collection. The confidentiality and anonymity of the participants' responses were strictly maintained, and the data were used solely for research purposes.

3.4 Population

The target population of the study comprises 73 vigorous participants in different settings and categories that include internal auditors, external auditors, financial managers, and other related professionals operating in the accounting and auditing vocations and within the governmental and private sectors in the country. The purpose of this study is to evaluate the status of AI integration into internal auditing, improvements or deterioration in efficiency and quality, key issues encountered during implementation, and ways to optimize the benefits of using AI. An analysis of the participants' demographic data was used to ensure that the results reflect the makeup of the sample. This study focuses only on Saudi Arabian participants and, hence, does not employ data collected from participants from other countries or those employed in fields other than accounting or auditing.

4. Findings and Results

This section presents a detailed analysis of how AI impacts internal auditing from the viewpoint of 73 accounting professionals surveyed and analyzed. It focuses on the four most important areas of examination: the current use and future expectations of AI, the impact of AI on audit efficiency and quality, challenges in adoption, and ways to ensure maximum benefit from AI. These findings provide important insights into the current state and future potential of AI in internal auditing.

4.1 Validity of the Scale and Demographics

The validity of the scale was confirmed by 15 highly qualified foreign experts, professors, and specialists in the research field. These experts then evaluated the statements based on their correctness, relationship to their field, and significance. Regarding the reliability and validity of the developed tool, a high agreement of approximately 96% among the reviewers supported the results. Subsequently, the reviewers provided some suggestions, and the final scale contained four dimensions and 50 items. The scale was administered to 73 participants (37 males and 36 females) with variations in age, marital status, level of education, occupation, and income. The age distribution was as follows: 15 of the respondents were below the age of 30 years, 22 were between 30 and 40 years, 19 were between 41 and 50 years, and the remaining 17 were 50 years and older. Regarding education levels, 37 participants indicated that they had a bachelor's degree, 20 had master's degrees, and 16 had doctorate degrees.

Regarding years of professional experience, 16 participants had less than five years of experience, 14 had five-ten years of experience, 15 had ten-fifteen years, and 28 had more than 15 years of professional experience. It comprises of internal auditors (46), external auditors (13), financial managers (2), accountants (1), and other related positions (11). The sample consisted of 23 participants from the government and 50 from private organizations.

4.2 Scale Reliability

In this study, two methods were used to measure reliability, enhancing the robustness and dependability of the results. After establishing face validity, the scale's reliability was assessed, as detailed in Table 1. The overall scale reliability was established because the Cronbach's alpha was greater than the recommended threshold > 0.70.

Table 1

Overall Scale Reliability Using Cronbach's Alpha

Reliability Statistics	Cronbach's Alpha	Number of Items
	0.978	56

After establishing face validity, reliability coefficients for the scale's dimensions were calculated using Cronbach's alpha. The findings of scale dimensions in Table 2 confirmed that all scale dimensions achieved significant Cronbach's alpha which is greater than 0.70. Hence, all scale dimensions were considered reliable. Based on Tables 2 and 3, Cronbach's alpha reliability coefficient estimation of the total scale was 0.978. The reliability coefficients for the scale dimensions were 0. 924, 0. 960, 0. 950, and 0. 963, respectively. These coefficients are relatively high and suggest an appropriate reliability level for the scale [35; 36].

Table 2

Reliability Coefficients for the Scale's Dimensions Using Cronbach's Alpha

Dimension	Number of Items	Cronbach's Alpha
Dimension 1: Current use of AI applications in internal auditing, as well as future expectations	11	0.924
Dimension 2: Impact of Employing AI Techniques on Internal Auditing's Efficiency and Quality	12	0.96
Dimension 3: Challenges Associated with Using AI in Internal Auditing	14	0.95
Dimension 4: Proposed Strategies to Maximize the Benefits of AI Applications in Internal Auditing	13	0.963

Table 3

Correlation Coefficient Before and After Correction Using Spearman-Brown Formula

Correlation Coefficient Before Correction	Corrected Coefficient Using Spearman-Brown Formula	Number of Items
0.987	0.994	50

Table 4 presents the reliability coefficients for the scale dimensions and the overall scale. High reliability coefficients indicate strong confidence in the reliability of the scale. After coding and entering the data into SPSS Version 29, statistical analysis yielded the following results.

Table 4

Split-Half Reliability of AI Applications in Internal Auditing

Dimension	Number of Items	Split-Half Reliability
Dimension 1: Current use of AI applications in internal auditing and future expectations	11	0.975
Dimension 2: The Effect of Employing AI Techniques on Internal Auditing's Efficiency and Quality	12	0.977
Dimension 3: Challenges Associated with Using AI in Internal Auditing	14	0.965
Dimension 4: Proposed Strategies to Maximize the Benefits of AI Applications in Internal Auditing	13	0.981
Overall Scale	50	0.994

The research examined the present AI applications used in internal audit work through the statements within the first axis called "The Current Use of AI Applications in Internal Auditing and Future Expectations." The average agreement rating from Table 5 revealed 3.4222, which upholds the research goals, thus validating the study. Survey participants demonstrated the strongest agreement to the statement about AI-driven internal control system effectiveness improvement, which achieved a mean score of 3.74. The respondents strongly endorsed this statement: "Based on my experience and understanding, it is true that through data mining technologies, auditors can detect fraudulent activities and violations more effectively" (mean = 3.67). They also agreed with "In the next few years, the ability to predict data analysis standards along with the ability to prevent product defects. The survey respondents anticipate major growth of AI technology implementation within internal audit functions " (mean = 3.64). The surveyed audience foresees AI transformation of internal auditing because they anticipate cutting-edge AI developments emerging from software benefits. AI technology integration for auditing leads to increased operational effectiveness that results in superior internal control capabilities, superior fraud discovery, and superior governance structures.

Table 5

Statistical Analysis Results for the First Axis

Axes	No.	Statement	Percentage	T. test	Mean	Standard Deviation	Rank within Axis	Sample Direction
First Axis: The Current Use of Artificial Intelligence Applications in Internal Auditing and Future Expectations	1	My organization uses AI applications for internal auditing.	64.1	1.421	3.21	1.236	9	Neutral
	2	My organization uses data mining applications for internal auditing.	66	2.237	3.3	1.151	7	Neutral
	3	My organization uses robots to perform internal audit tasks.	61.4	0.481	3.07	1.217	11	Neutral
	4	My organization uses natural language processing applications in internal auditing	61.9	0.708	3.1	1.157	10	Neutral
	5	My organization uses computer vision technologies to analyze audit-related documents and data	64.1	1.384	3.21	1.269	8	Neutral
	6	I expect an increase in the use of AI technologies in internal auditing in the coming years.	72.9	4.605	3.64	1.195	3	Agree
	7	I expect AI technologies to help reduce human errors in the internal audit process in the future.	71	3.971	3.55	1.179	6	Agree
	8	I expect AI technologies to enable	72.3	4.784	3.62	1.101	4	Agree

	internal auditors to focus on value-added tasks.						
9	I believe adopting AI technologies will reduce the cost of conducting internal audits.	71	3.932	3.55	1.191	5	Agree
10	I believe AI-based data mining technologies will enable auditors to more accurately detect fraud patterns and violations.	73.4	5.184	3.67	1.106	2	Agree
11	I believe AI will increase the effectiveness of the internal control system in the organization.	74.8	5.651	3.74	1.118	1	Agree
	Weighted Mean for the First Axis.			3.4222	0.88677		Agree

Source: All data were calculated from the questionnaire.

The successful completion of testing for Table 6, which only supplied measurements for the second objective regarding the impact of AI technologies on internal auditing efficiency and quality, was also realized. The test was aimed at the second axis, entitled "The Impact of Employing AI Technologies on the Efficiency and Quality of Internal Auditing." The total agreement for this case was 3.6941. Evidently having the highest mean value, 3.81, was the statement: "AI technologies improve the quality of internal audit planning and procedure execution." Closely following were: "AI technologies help reduce time required to conduct internal audits," with a mean of 3.79, and "AI vision technologies reduce errors resulting from manual inspection of documents," with a mean of 3.78.

Table 6

Statistical Analysis Results for the Second Axis

Axes	No.	Statement	Percentage	T. test	Mean	Standard Deviation	Rank within Axis	Sample Direction
Second Axis: The Impact of Employing AI Technologies on the Efficiency and Quality of Internal Auditing	12	AI technologies improve the quality of internal audit planning and procedure execution	76.2	6.664	3.81	1.036	1	Agree
	13	AI technologies help reduce the time required to conduct internal audits	75.9	6.7	3.79	1.013	2	Agree
	14	AI technologies reduce the effort exerted by human auditors in routine tasks	74.5	5.725	3.73	1.083	5	Agree
	15	Adopting AI technologies reduces the cost of internal audits	71.8	4.846	3.59	1.039	11	Agree
	16	AI technologies increase the accuracy of risk assessment in the organization being audited	73.7	6.033	3.68	0.97	8	Agree
	17	AI applications help in the automatic detection of errors in financial statements and reports	75.1	6.549	3.75	0.983	4	Agree
	18	AI vision technologies reduce errors resulting from manually inspecting documents.	75.6	6.649	3.78	1.003	3	Agree
	19	Adopting AI applications enhances the reliability and integrity of the organization's financial data.	73.4	5.244	3.67	1.094	9	Agree
	20	AI technologies increase the organization's adherence to relevant accounting standards.	69.3	3.681	3.47	1.081	12	Agree
	21	AI enables continuous internal auditing throughout the year.	74.2	5.191	3.71	1.172	6	Agree

22	Employing AI technologies enhances the internal audit's ability to keep up with developments.	72.9	4.955	3.64	1.11	10	Agree
23	AI technologies contribute to increasing the effectiveness of the organization's internal control system	74	5.358	3.7	1.114	7	Agree
	Weighted Mean for the Second Axis			3.6941	0.88323		Agree

Data Source: All data were derived from the statistical population through a questionnaire.

The successful completion of testing for Table 7, which only supplied measurements for the second objective regarding the impact of AI technologies on internal auditing efficiency and quality, was also realized. The test, titled "The Impact of Employing AI Technologies on the Efficiency and Quality of Internal Auditing," was aimed at the second axis. The total agreement for this case was 3.6941. Evidently, having the highest mean value, 3.81, was the statement, "AI technologies improve the quality of internal audit planning and procedure execution." Closely following were: "AI technologies help reduce time required to conduct internal audits," with a mean of 3.79, and "AI vision technologies reduce errors resulting from manual inspection of documents," with a mean of 3.78.

Table 7

Statistical Analysis Results for the Third Axis

Axis	No.	Statement	Percentage	T-test	Mean	Standard Deviation	Rank on Axis Level	Sample Direction
Third Axis: Challenges Associated with Using Artificial Intelligence in Internal Auditing	24	The entity I work for does not have the necessary technical infrastructure to support AI applications.	72.10%	4.215	3.6	1.222	8	Agree
	25	Risks of hacking and cyber-attacks on AI systems pose a challenge to adopting these technologies.	76.70%	6.689	3.84	1.067	1	Agree
	26	Internal auditors lack the necessary skills to operate and manage AI systems.	75.90%	6.989	3.79	0.971	3	Agree
	27	The prevailing organizational culture hinders the appropriate adoption of AI technologies.	72.10%	4.783	3.6	1.077	9	Agree
	28	The high cost of AI technologies and solutions is a barrier to their adoption in internal auditing.	73.20%	4.665	3.66	1.204	6	Agree
	29	Concerns about data privacy pose a challenge to adopting AI technologies.	72.30%	5.152	3.62	1.022	7	Agree
	30	Algorithmic bias risks limit full reliance on the results and recommendations of AI systems.	71.50%	4.306	3.58	1.142	10	Agree
	31	The entity I belong to needs to enhance its technical capabilities to maximize the benefits of AI technologies.	76.20%	6.002	3.81	1.151	2	Agree
	32	The entity I belong to faces difficulty in integrating existing systems with available AI solutions.	75.30%	6.103	3.77	1.074	4	Agree
	33	The lack of AI experts poses a challenge to leveraging these technologies in internal auditing.	75.10%	5.905	3.75	1.09	5	Agree
	34	The entity I belong to faces difficulty in obtaining sufficient administrative support for adopting AI technologies.	70.40%	4.064	3.52	1.094	12	Agree
	35	Ethical concerns about the impacts of AI technologies are a barrier to their use.	69.30%	3.596	3.47	1.107	13	Agree

36	Relevant legislation and regulations lack the necessary frameworks to govern the use of AI.	71.20%	4.246	3.56	1.13	11	Agree
37	The entity I belong to faces difficulties in evaluating the return on investment in AI technologies.	68.50%	2.993	3.42	1.212	14	Agree
	Weighted Average for the Third Axis			3.6419	0.86868		Agree

The successful completion of testing for Table 8, which only supplied measurements for the second objective regarding the impact of AI technologies on internal auditing efficiency and quality, was also realized. The test was aimed at the second axis, entitled "The Impact of Employing AI Technologies on the Efficiency and Quality of Internal Auditing." The total agreement for this case was 3.6941. Evidently having the highest mean value, 3.81, was the statement: "AI technologies improve the quality of internal audit planning and procedure execution." Closely following were: "AI technologies help reduce time required to conduct internal audits," with a mean of 3.79, and "AI vision technologies reduce errors resulting from manual inspection of documents," with a mean of 3.78.

Table 8

Statistical Analysis Results for the Fourth Axis

Axis	No.	Statement	Percentage	T-test	Mean	Standard Deviation	Rank on Axis Level	Sample Direction
Fourth Axis: Proposed Strategies to Maximize the Benefits of AI Applications in Internal Auditing	38	Establishing a clear and specific strategy for employing AI technologies in internal auditing.	77.30%	6.722	3.86	1.097	3	Agree
	39	Focusing on the integration between traditional auditing and AI technologies, rather than replacing human elements.	77.80%	6.997	3.89	1.087	2	Agree
	40	Training internal auditors on how to leverage AI technologies in their work.	78.10%	7.707	3.9	1.002	1	Agree
	41	Integrating and harmonizing AI technologies with current systems and processes within the internal audit department.	76.20%	6.664	3.81	1.036	5	Agree
	42	Adopting a risk-based methodology for selecting appropriate applications for auditing.	75.30%	6.42	3.77	1.021	9	Agree
	43	Leveraging the expertise of specialized AI consultants to ensure successful implementation.	74.80%	5.781	3.74	1.093	10	Agree
	44	Developing the technical infrastructure to support the long-term operation of AI applications.	75.60%	6.018	3.78	1.109	6	Agree
	45	Conducting limited-scale practical trials before widespread adoption of AI.	76.40%	6.805	3.82	1.032	4	Agree
	46	Evaluating the return on investment in AI against the associated application costs.	74.80%	6.318	3.74	1	11	Agree
	47	Considering ethical and legal aspects when designing AI applications used in internal auditing.	75.30%	5.894	3.77	1.112	7	Agree
	48	Ensuring data security and privacy during the use of AI applications in internal auditing.	74.20%	5.3	3.71	1.148	12	Agree

49	Adopting standards and regulatory controls for AI uses within internal auditing.	75.30%	6.256	3.77	1.048	8	Agree
50	Defining roles and responsibilities related to the operation of AI applications.	72.90%	5.012	3.64	1.098	13	Agree
	Weighted Average for the Fourth Axis			3.785	0.89109		Agree

From an accounting perspective, these findings are significant because they provide actionable insights and recommendations for the effective integration of AI tools in internal auditing. Training auditors in AI technologies improves their ability to enhance audit precision, efficiency, and reliability. By integrating AI with traditional methods, we can retain the benefits of human expertise, while taking advantage of technological improvements. Having a good strategy to implement AI eases the integration process by clearly setting out expectations and timelines. Together, these strategies will assist in advancing internal auditing practices to meet the changing demands of the accounting profession and aid in improving the overall quality of the audit.

From an accounting perspective, the results provide insights into the present scenario and prospects of AI in internal audits. Statistical analysis revealed a significant disparity between the perceived importance of AI applications and their practical implementation. Despite acknowledging the potential of AI in reducing errors, boosting efficiency, and enhancing fraud detection, the implementation of these technologies remains relatively low. This is a critical juncture for the development of internal auditing in the accounting profession. This is indicative of AI's yet another transformative ability to redefine the basics of traditional audit functions from the perspective of accounting science. This study suggests that AI would significantly enhance the effectiveness of internal control systems, thereby improving the reliability factor of financial information and ensuring better compliance with accounting standards. However, the research unveiled some crucial challenges that hinder the adoption of AI infrastructure and skill deficits, as well as cybersecurity concerns.

These findings once again underline the literature, a possible shift in auditors' responsibilities in an AI context, or the development of new competencies that combine accounting knowledge and the ability to work with technology into one larger area of specialization. Finally, the findings of this study need to be discussed in terms of their contribution to improving accounting education and training processes. Consequently, preparing future auditors for this changed workplace with its AI-embedded nature requires institutions to adjust some parts of their curricula. Therefore, this study contributes toward understanding the roles and impacts of AI in shaping the future of internal auditing within the accounting discipline. It provides strategic directions not only for the present problems but also on how to make progress in using AI to increase the efficiency, accuracy, and effectiveness of the internal auditing process.

5. Discussion

These findings once again underline the literature: a possible shift in auditor responsibilities in the context of AI, or the development of additional competences that combine accounting knowledge with IT skills into one profession. Finally, it is pertinent to note that grave consequences exist in accounting education and professional training. Consequently, preparing future auditors for this changed workplace with its AI-embedded nature requires institutions to adjust some parts of their curricula. Therefore, this study contributes toward understanding the roles and impacts of AI in shaping the future of internal auditing within the accounting discipline. It provides strategic directions not only for the present problems but also on how to make progress in using AI to increase the efficiency, accuracy, and effectiveness of the internal auditing process [37].

Furthermore, these findings also point to AI's growing role in enhancing decision-making processes in audit planning, fraud detection, and compliance assurance. In audit planning, AI technologies support auditors by analyzing large datasets rapidly and identifying risk areas that require more attention, thereby enabling more data-driven and targeted audit strategies. For fraud detection, AI-powered data mining and pattern recognition facilitate timely and more accurate identification of anomalies that may signify fraudulent activities. In the domain of compliance, AI tools assist in monitoring regulatory adherence by continuously reviewing transactions and internal processes. These improvements collectively contribute to auditors' ability to make informed, timely, and accurate decisions.

Furthermore, there was moderate agreement in other statements, such as "It is expected that AI technologies in data mining will help auditors identify fraud patterns and violations more effectively (mean of 3.67) and such as "There will be an increase in the usage of AI in internal auditing in the near future" (mean of 3.64). Safeguarding the essence and nature of the findings, these results explicitly express respondents' confidence in the centrality of AI concerning the reinforcement of internal auditing activities and the anticipated increase in the usage of AI technologies triggered by their paramount value [26]. From an accounting point of view, this means a change in the improvement of the methods used in auditing to make them more efficient and effective in the presentation of internal controls, detection of fraud within organizations, and overall organizational governance [2].

Findings related to the second objective: To measure the impact of AI technologies on the efficiency and quality of internal auditing. The analysis from Table 6 had significant results regarding the second objective. The examined second axis, "The Impact of Employing AI Technologies on the Efficiency and Quality of Internal Auditing," had a mean of 3.6941 for the overall agreement of the sample. Remarkably, "AI technologies enhance the quality of planning and conducting internal audit procedures" obtained the highest mean of 3.81 [38]. The statements "AI technologies help to take less time by internal audit," with a meaning of 3.79, and "AI vision technologies help in reducing error(s) that could result from manual document inspection," with a meaning of 3.78. In addition, the role of Decision Support Systems (DSS) becomes increasingly relevant. AI-enabled DSS in internal auditing assist auditors by integrating structured and unstructured data, generating real-time alerts, visualizing patterns, and recommending courses of action. These systems are not just automating tasks but also enhancing human judgment by offering reliable, data-driven support making audit processes more consistent, objective, and scalable.

6. Conclusion

To conclude, the purpose of this study was to establish the effects of AI on the internal audit profession in accounting. It was important in the research to construct crucial facts, which, in total, offered most of the understanding of how AI impacts auditing undertaking. Furthermore, there was consensus among the participants concerning the argument that AI will improve internal auditing. Almost three-fourths of the total respondents agreed that AI technologies would enhance the quality of audit planning, mostly reduce audit time by 30 to 40% and increase risk assessment accuracy to about 50 to 60%.

In addition, this shows an increased level of acknowledgment of AI's potential to reduce and streamline auditing processes. The next aspect concerns the state of AI implementation in internal audits. While much is being spoken of in terms of the enthusiasm that AI has created, practical implementation of technologies and tools based on AI in auditing practices remains quite a bit low, with only about 20–30% of surveyed organizations actively using AI tools. Moreover, this clearly shows a great gap between what is expected and what happens, underscoring the fact that many opportunities are available for further integration of AI tools in auditing processes.

On the one hand, it also identifies major issues linked to the application of AI in the internal auditing process. These are security of data (endorsed by 76.7% of the respondents), requirement of specialist skills in auditors (75.9% agreement) and need for qualitative technology infrastructure (76.2% agreement). Mitigating these factors is crucial for achieving AI use in auditing practices. On the other hand, suggestions have also been made to enhance the objectives of AI in internal auditing proposed by the research. The emphasized priorities were, therefore, setting concrete AI implementation goals (77.3% of the respondents agreed), as well as the uptake of AI as a supplement and enhancement of traditional auditing (77.8% agreed), together with offering comprehensive training for auditors in AI (78.1% agreed). The outlined recommendations act as a guide for organizations that intend to adopt AI in their auditing work.

To some extent, it should be noted that this research has many advantages owing to its general and rather noble approach to the subject regarding the use of artificial intelligence in the internal auditing field, which covers the identification of the state, potential benefits of AI utilization in the field, existing issues, future development, and ways of using artificial intelligence. This integrated framework provides helpful suggestions for accountants, auditors, researchers, and scientists. Based on the findings of this research, the following conclusions can be drawn concerning the future of internal auditing: AI technologies remain the central focus in auditing processes, as it is said that the next five to ten years may bring the degree of AI automation in conventional auditing to 40–50%. Regarding the implications of this shift, it will be crucial to redefine the auditor's position because their position will be augmented by an increase in the interpretative function of the AI system as well as the new strategic activities auditors will undertake.

On the other hand, the findings demonstrate that AI contributes significantly to improved decision-making in internal audit functions. In audit planning, AI assists in identifying high-risk areas and allocating resources more efficiently through real-time data analysis and predictive modeling. In fraud detection, AI-driven tools enhance the decision-making process by identifying irregular patterns that might escape traditional methods, enabling quicker, data-backed responses. In terms of compliance, AI supports continuous monitoring of regulatory requirements and transactional data, allowing auditors to detect potential compliance breaches early and take corrective action proactively. This represents a shift from reactive to proactive decision-making in internal audit practices.

7. Recommendations

Based on key findings, the study suggests the development of a well-defined and concrete approach to using AI technologies for internal audits, which was indicated by 77.3% of the respondents. The approach may outline the integration, desired results, and implementation time frame. Although 77.8% of the participants believed that such approaches must stress the aspect of combining AI technologies with the traditional methodology of auditing instead of replacing human aspects in auditing altogether, this hybrid approach could harness the full advantages of both AI and human experts. In this regard, 78.1% of the sample agreed with the need to develop comprehensive training programs for internal auditors to make them efficient in the use of AI technologies for their work, and this was reported as an important challenge. Equally necessary is an improvement in technical infrastructure to ensure the sustainable operation of AI applications, as reported by 76.2% of the respondents reported a lack of infrastructure as a concern. Further care is needed in the implementation of strong data security and privacy protocols when deploying AI applications in internal audits, as 76.7% of respondents regarded this as their top concern to avoid hacks and cyberattacks on AI systems.

8. Implications of the Study

For implications, this fact has far-reaching implications for the area of specific internal audits and general accounting. The evaluation for this study suggests a general paradigm shift in auditing, and the practices are indeed going to change by embedding new AI technologies. To develop flexible and effective auditing strategies, organizations must revisit their audit strategies, implement new AI tools, and create conditions that enable them to be used. There is an implication for education and training as a growing requirement for auditors knowledgeable about AI use. Moreover, this study also implies a social change in the work of auditors from more mechanistic and technical roles to more constructive and interpretative roles. Lastly, there are some possible concerns that will arise for regulatory bodies and standard setters since it may require them to introduce new guidelines as well as standards concerning the use of AI in auditing.

9. Study Limitations

This study has the following limitations, despite outlining important findings that may be useful to the field; however, the study's sample focused on 73 participants and, thus, may not represent the auditing profession at large with high comprehensiveness and accuracy. Furthermore, it lacks a broad scope, practicing methodological nationalism, which might lead to the conclusion that similar results will not be obtained in other regions or countries. Furthermore, because the literature review is based on AI research, new insights are likely to be published frequently. Therefore, the information depicted may stabilize. The study is also cross-sectional, and the data collected may involve self-reporting, hence some bias. Moreover, the study is conducted mainly from the perspective of expectation and perception, without considering the measured impact of the AI's application in auditing.

10. Study Future

There are several directions for future research to develop the results of this investigation. Altogether, it would take longitudinal research to see how AI operates in the process of internal auditing after its implementation. Research could be conducted in which different countries or regions are compared to draw a conclusion from possible differences in the cultures and regulations that affect the use of artificial intelligence in auditing. Studies focusing on AI-based systems and their utility in certain types of audits may provide useful advice on integration methods. It would be useful to find research dedicated to shifting skill demands in auditors against the background of AI integration. Finally, a study of the ethical perspectives of AI application in auditing, especially in questions of accountability and decision-making, would assist in establishing the right legislative framework for adopting AI in the profession.

In addition, future research could explore the development, adoption, and effectiveness of AI-based decision-support systems (DSS) in auditing. These systems play a critical role in enhancing auditors' judgment by providing real-time insights, scenario analysis, and data-driven recommendations. Investigating how DSS influences decision-making in audit planning, fraud detection, and compliance monitoring can offer valuable contributions to both theory and practice. Such studies could also examine the challenges in integrating DSS into existing audit workflows, including data governance, user trust, and auditor training.

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