International Journal of Science and Research Archive

eISSN: 2582-8185

Cross Ref DOI: 10.30574/ijsra

Journal homepage: https://ijsra.net/

(RESEARCH ARTICLE)

Check for updates

Attitudes of auditors about employing artificial intelligence in the auditing process: Jordanian auditing companies are an example

Zain Mohammad Ali Al- dahabi *, Rula Yousef Hajjaj and Fatima Ali Algazo

Northern Border University, Saudi Arabia.

International Journal of Science and Research Archive, 2024, 11(02), 1765–1776

Publication history: Received on 11 March 2024; revised on 17 April 2024; accepted on 20 April 2024

Article DOI: https://doi.org/10.30574/ijsra.2024.11.2.0679

Abstract

Objective: This research aims to investigate the degree of attitudes of Auditors toward employing Artificial intelligence in auditing process. Also, it aims to investigate if there any statistically differences in a degree of auditor's attitude toward employing artificial intelligence in auditing process distribute to the gender and experience.

Methodology: The study used a descriptive analytical approach. The data were collected from (94) auditors from four accounting company in Amman ، Jordan who were chosen randomly. using a questionnaire developed for this purpose.

Findings: The findings of the study shows that the degree of attitudes of auditors in accounting companies in Jordan toward employing artificial intelligence in auditing process is high with mean (3.69) and Std. Dev (0.91)، Also ، the finding of the study shows that there no statistically differences at the level (a= 0.05) in degree of attitude of Jordanian auditors toward distributes to gender and experience year.

Keywords: Artificial Intelligence; Auditing; Jordanian auditors; Process

1. Introduction

The rise of artificial intelligence (AI) has sparked a surge in research examining AI from various angles. Numerous studies have attempted to define AI. One definition, proposed by Yash following (2020), views AI as a technical field that uses models to simulate reasoning and information organization within a specific scientific domain. These models leverage knowledge gained from past experiences with similar situations and choices. In contrast, Jordan (2020) defines AI as a technology or information system that assists humans in making sound decisions. This system utilizes information similar to what humans use and have access to, including learning, knowledge, instructions, and past guidance. Additionally, AI can be seen as a system capable of effectively analyzing external data, extracting lessons from it, and applying those lessons to flexibly achieve specific tasks and goals (Haenlein, 2019) [1].

A recent study firstly (2021) explored the multifaceted nature of Artificial Intelligence (AI), emphasizing how its characteristics can vary depending on the specific type of AI employed. Here's a breakdown of three key characteristics:

1.1. Dynamic Data Handling and Adaptive Decision-Making

AI functions as a sophisticated tool or automated system. It can transform reliable, real-world data (like sensor readings, customer information, or financial records) into a format the computer can understand (electronic data). This process is not static.

* Corresponding author: Zain Mohammad Ali Al- dahabi.

AI systems can be dynamically configured based on the specific decision at hand. This configuration involves selecting relevant data points, applying specialized algorithms, and establishing decision thresholds.

The key strength lies in adaptability. As new information becomes available, the AI can continuously update its decision-making process by incorporating these new elements and variables. This allows AI to make more informed choices that evolve, unlike traditional methods reliant on pre-defined rules that may struggle with changing circumstances.

This characteristic is particularly evident in Machine Learning and Deep Learning AI types. These AI systems learn and adapt based on the data they are exposed to.

1.2. Learning from Experience and Overcoming Bias

AI can learn from vast amounts of data, encompassing both historical information (e.g., past stock prices) and real-time inputs (e.g., sensor readings).

An AI system designed for stock market prediction might analyze historical data and news feeds to identify patterns that can be used for future predictions.

More importantly, AI can learn from the collective experiences of humans, incorporating both successful and unsuccessful outcomes. This allows AI to identify patterns and trends that humans might miss, potentially overcoming biases that humans develop due to limited experiences.

By analyzing diverse datasets, AI can automate the selection and organization of relevant past experiences (or "behaviors") based on the specific decision context. This capability allows AI to potentially achieve superior outcomes compared to traditional methods limited by human biases.

It's crucial to remember, however, that AI is only as good as the data it's trained on. Biased data sets can lead to biased AI models. Therefore, ensuring the quality and diversity of training data is essential for responsible AI development.

This characteristic is particularly prominent in Machine Learning and Reinforcement Learning AI types, where the system learns through trial and error and adjusts its behavior based on past experiences.

1.3. Enhanced Information Delivery for Scientific Research

AI can deliver information electronically in a way that meets the rigorous quality standards crucial for scientific research. These standards include:

Timeliness: Ensuring information is up-to-date and reflects the latest discoveries.

Comparability: Allowing researchers to easily compare data from different sources and studies.

Accessibility: Making information readily available to researchers across geographical boundaries.

Objectivity: Presenting information without bias or personal interpretations.

Completeness: Providing all relevant data points for a comprehensive understanding.

By electronically processing and storing information, AI can ensure these quality aspects are maintained. This allows for efficient research and analysis, facilitating scientific progress in a multitude of fields.

This characteristic is particularly beneficial for applications like Knowledge Management Systems and Natural Language Processing AI types, which organize and analyze large amounts of scientific data.

In recent years, a large number of industries witnessed many changes, and auditing without any doubt is one of those industries and this is mainly due to the rapid advancements in artificial intelligence. The adoption and integration of artificial intelligence (AI) technology in auditing processes contribute to completely transforming traditional practices, providing more efficiency, accuracy, and insight. It is crucial to comprehend how AI will affect auditing operations in Jordan's unique regulatory, cultural, and economic framework as the nation's economy develops. This study aims to investigate how artificial intelligence (AI) is affecting auditing procedures in Jordan, examining the potential, difficulties, and consequences of this technological revolution. This study intends to offer significant insights for Jordanian auditors,

accounting firms, and regulatory bodies by analyzing the current state of AI integration in auditing. These insights will aid in strategic planning and well-informed decision-making in light of the expanding role of AI technology in the auditing industry.

Since its inception in ancient civilizations, the audit has evolved to meet a variety of goals and has undergone multiple modifications to accommodate shifting economic realities. The science of auditing, on the other hand, is currently understood to be an ongoing, objective process conducted by an impartial specialist with the goal of determining whether the financial statements accurately and truthfully depict the relevant company and are free from material distortion brought about by fraud or error. However, as the world economy grows and multinational corporations with decentralized operations and increasingly complex structures and transactions proliferate, it becomes increasingly challenging for auditors to effectively carry out the goals of their profession and to ensure reasonable security levels regarding the accuracy of the financial accounts. Consequently, with technology growing at an exponential rate at the start of the twenty-first century, a number of work tools that automated some auditing processes started to surface.

There are several possible benefits of applying AI to auditing, including better risk assessment, improved fraud detection, and more effective data analysis (Smith & Jones, 2021) [2]. Auditors may examine enormous data sets more quickly and accurately by using AI-powered tools, which enables them to assess financial statements and internal controls more thoroughly. Additionally, auditors can find intricate patterns and anomalies in financial data by using AI technology, which provides deeper insights into any irregularities or places for development (Rahman & Ahmed, 2020) [3]. It is critical to investigate the precise ways in which artificial intelligence (AI) might improve workflows and raise the caliber of audits carried out in Jordan as the auditing profession attempts to adjust to the digital era.

Zakaria (2021) shows the relationship between artificial intelligence (AI) and accounting due to the advantages of AI in this field, these advantages are the following: -

- Return to benefits: - in comparison with traditional methods, artificial intelligence (AI) reflects many benefits for accounting like information transit, communication, storing, and protection, as well as between the more sophisticated techniques utilizing AI.

- Cost and Burden: - It enables a low degree of errors and an increase in objectivity, as well as the speed of access to that information at the appropriate time, then AI achieves the necessary economic feasibility when compared to the benefits achieved with costs and burdens.

- Flexibility: - It is clear that business technology that relies on artificial intelligence helps to achieve flexibility through the fact that financial information can introduce the results immediately.

- Control the Degree of Risk: - (AI) can decrease the degree of exposure to the information and data-related dangers that conventional ways of handling them pose, including those related to loss, unauthorized entry, retrieval, preservation, and other such images, as the AI operates to ascertain who is permitted to handle such data and information, both financial and non-financial

In addition, the integration of Artificial Intelligence (AI) into auditing practices presents significant opportunities for efficiency and effectiveness. However, this integration also raises important concerns surrounding privacy, ethics, and the evolving role of human auditors (Chen & Liu, 2019[4]; Al-Khaswneh & Ibrahim, 2018) [5].

1.4. Here's a breakdown of the key points

Ethical Implications: As AI technologies become more deeply embedded in auditing procedures, careful consideration needs to be given to the ethical implications surrounding:

Data Privacy**:** Ensuring that sensitive financial data used by AI systems is collected, stored, and processed by data privacy regulations and ethical principles (Chen & Liu, 2019) [6].

Algorithm Transparency**:** Understanding how AI algorithms reach their conclusions and ensuring transparency in their decision-making processes is crucial for building trust in AI-driven audit results (Chen & Liu, 2019) [7].

Moral Application of AI in Decisions**:** There's a need to establish ethical guidelines for how AI is used in audit decision-making to ensure fairness and avoid potential biases (Al-Khaswneh & Ibrahim, 2018) [8].

Shifting Role of Auditors**:** The increasing use of AI tools in auditing will likely lead to a shift in the role that human auditors play. Skills such as critical analysis, judgment, and interpretation of AI outputs will become increasingly important for auditors (Al-Khaswneh & Ibrahim, 2018) [9]. Additionally, auditors may need to develop expertise in areas like AI governance and risk management to ensure the responsible use of these technologies in the auditing process.

Understanding Consequences for Success**:** A thorough understanding of these ethical and professional consequences associated with AI in auditing is essential for its successful and responsible implementation (Al-Khaswneh & Ibrahim, 2018) [10]. By proactively addressing these concerns, the auditing profession can leverage the benefits of AI while mitigating potential risks.

Auditing in an era of Artificial Intelligence (AI) and electronic accounting systems (e-accounting) presents distinct advantages compared to traditional methods. These advantages can be categorized into three key areas: economic efficiency, effectiveness, and enhanced protection Omoteso, (2020) [11].

1.5. Here's a breakdown of the benefits

Economic Efficiency: E-accounting audits leverage technology to achieve economies of information. Auditors can review a larger volume of data by examining the electronic relationships within the accounting software and analyzing the system's outputs and results. This reduces the time and resources needed to perform a comprehensive audit compared to manually reviewing paper-based records.

Increased Effectiveness: E-accounting audits aim to be more effective in identifying and resolving errors. This is achieved by assessing the internal control system's efficacy in detecting errors at various administrative levels within the organization. A robust internal control system, designed to leverage AI capabilities for real-time monitoring, can significantly improve the accuracy and efficiency of the audit process.

Enhanced Protection and Safety: E-accounting audits go beyond simply reviewing financial transactions. They actively seek ways to improve the security and integrity of electronic accounting data. This may involve measures like access control, data encryption, and disaster recovery planning to safeguard sensitive financial information from theft, loss, or damage. These measures are crucial for mitigating risks associated with cyberattacks and data breaches, which are increasing concerns in the digital age.

While Artificial Intelligence (AI) offers significant advantages in the auditing process, some challenges need to be addressed. One key challenge concerns the shift from tangible paper documents to electronic accounting systems. In e-accounting audits, the focus is on computerized systems and electronic data, eliminating the physical form of traditional paper documents.

1.6. This shift presents several considerations

Examination, Verification, and Reporting: The nature of examination, verification, and reporting in e-accounting audits differs from traditional audits. Traditional audits rely on following the accounting and documentary trail through both traditional and technical means. This often involves a physical examination of paper-based documents. In contrast, e-accounting audits primarily focus on electronic data, requiring auditors to develop new skills and techniques for examining and verifying digital records.

Time and Resource Consumption: Traditional audits can be time-consuming due to the need for meticulous examination of paper records. While e-accounting audits can be more efficient by leveraging technology, they still require auditors to invest time and effort in understanding the specific electronic accounting systems and data structures used by an organization.

Auditor Expertise: While e-accounting audits offer benefits, they also necessitate a shift in auditor skills. Auditors need to develop expertise in areas such as data analysis, cybersecurity, and AI technology to effectively assess and interpret the vast amount of electronic data generated by modern accounting systems. This highlights the importance of ongoing training and professional development for auditors in the age of AI-driven e-accounting.

Bridging the Gap: Despite these challenges, e-accounting audits represent a significant development in the field. By embracing AI and its capabilities, auditors can leverage new methods and programs to perform their tasks more effectively and efficiently.

Zakaria (2020) [12] determines several techniques and approaches that the auditor uses to carry out the accounting audit process and meet its objectives. The following are these kinds and techniques:

Utilizing the same information system for an e-accounting audit This kind of audit depends on the auditor using the same administrative or accounting information system to gather documentation and evidence, as well as to assess the internal control system. This is the primary method the auditor uses to carry out the accounting audit process. This calls for approach calls for the auditors to be conversant with and adequately knowledgeable about the operation of the relevant information system.

E-Accounting Audit of the environment surrounding the information system, This type depends on the Auditor evaluating the business environment surrounding the information system, drawing on that in several considerations, the purpose of which is to evaluate the internal control system manually without using the information system except by comparing what has been obtained from the evidence and evidence of what the information system outputs provide, and perhaps this method takes more time than the previous method, due to the ability and experience of the Auditor to deal with each of the two methods.

The Electronic Auditing Empirical, this type depends on the Auditor choosing a set of data to work on testing them correctly and reaching the same results to achieve confidence in the outputs of the information system and rely on it in the performance of the Accounting Audit process, and perhaps this type differs from the E-Accounting Audit with the help of sub-systems, it is difficult to achieve the second without following the first, that is, as two stages

Parallel E-Accounting Audit, this type depends on the Auditor performing the Accounting Audit by comparing it with the same outputs with another system such as a bank account statement received from it with a report that explains the bank's movement between deposit or withdrawal and the extent of that movement's sequence together. This gives the Auditor confidence and a degree of dependence on the information system subject to the Accounting Audit in performing the Auditing process.

E-accounting auditing consecutively and observing, this type depends on the Auditor achieving the completion of the electronic Auditing by selecting specific data that data is tested and following the way it is handled and judged on the integrity and correctness of dealing with its.

Accounting, Financial, and non-financial information, a significant obstacle to the field of electronic auditing work is the nature of the work of computerized accounting information systems and electronic systems, which require that data and information for a given financial period not be kept within operating databases for multiple financial periods unless they are preserved in an "electronic archive." This archive may be vulnerable to loss and damage in the event of a security breach. Before starting the planning phase of the electronic audit process, the auditing officer in charge must make an effort to ascertain and explain this. Moreover, given that the field of E-Accounting Audit work is based on the assessment of the internal control system, the failure of the system poses a significant challenge. Additionally, the management of the Accounting Audit work necessitates monitoring the ease of access to data, information, and documents, whether they are electronic or paper-based, as well as the unit management's role. The ability of the internal control system to identify errors and deviations, as well as the security and protection of data and information, are closely monitored in accounting.

When conducting the E-Accounting Audit, the auditor uses a collection of tools that he has created himself to accomplish the audit's objective. The following are these programs:

Account balances, Transaction Tests, and Auditing Programs. Creating mathematical equations for this kind of application is necessary to ensure that the transactions are correct and in the appropriate amounts. This kind of software might be useful for computing taxes, late fees, and computed bank interest.

Auditing Programs and Testing the Internal Control System is the foundation of audit work; it evaluates the effectiveness of the internal control system in lowering deviations and embezzlement. It also provides procedures for accessing databases and information, control, protection, and integrity of the information and data system, and classification of responsibilities and specializations.

Program auditing, audit process testing, and sample selection, this kind selects the suitable sample that reflects the degree to which the auditor increases the evidence of verification and verification about it because the discussion in the field of e-accounting audit varies from traditional audit in that the audit sample is determined by a program that divides

the balances and accounts into levels based on the amounts and nature of the item, and the sample is then calculated for these considerations. Instead of being determined randomly or diligently as we find it in the traditional audit.

The E- Accounting Audit is derived from one of the most significant procedures for Auditing standards, which are analytical procedures that take place for the use of mathematical and statistical approaches to clarify the auditor's vision, followed by the observer. Auditing programs and analytical tests of this type are required due to the growing demand for verification services and financial analysis. A collection of statistical programs is used in the calculations to assess an item or items for both short- and medium-term financial periods.

1.7. Problem Statement

The accounting and auditing profession in Jordan is facing significant challenges driven by increasing data volumes, complex financial transactions, and evolving regulatory frameworks. Artificial intelligence (AI) presents a potential solution to address these challenges and improve the efficiency and effectiveness of audit processes. However, the specific impact of AI on auditing practices in the Jordanian context remains unexplored.

1.8. Research Questions

This research aims to investigate the attitude of Auditors in Jordanian companies toward employing artificial intelligence in the auditing process, by addressing the following key questions:

What is the attitude of auditors in Jordanian companies toward employing artificial intelligence in the auditing process?

Are there any statistical differences at the level (a= 0.05) in the degree of attitude of auditors in Jordanian companies distributed to gender and experience year?

1.9. The importance of the study

The importance of studying is to show the attitude of in Jordanian companies toward employing artificial intelligence in the auditing process.

the impact of AI on auditing works in Jordan can be viewed from several key perspectives:

1.10. For the auditing profession in Jordan

Enhanced potency and efficiency: AI solutions can speed up and improve the accuracy of audits by automating laborious operations, analyzing big datasets, and spotting abnormalities. As a result, the auditor has more time for more in-depth study and decision-making, which raises the caliber of audit services.

Improved competitiveness: By offering clients more insightful and efficient audits, Jordanian audit firms can gain a competitive advantage by implementing AI early on. This is especially important in today's international economy.

Improved risk management: AI can assist auditors in recognizing and evaluating new hazards more skillfully, resulting in more informed choices and better risk management procedures for audit companies and their clients.

Future-proofing the industry: To ensure the auditing profession in Jordan remains relevant and sustainable over the long run, it is imperative to comprehend and leverage the potential of artificial intelligence.

1.11. For policymakers and regulators

Strengthening the financial sector: Effective use of AI can contribute to a more robust and transparent financial sector in Jordan, fostering investor confidence and economic growth.

Addressing skills gap: Research can help identify the skills and training needed for auditors to adapt to the changing landscape and effectively utilize AI tools.

1.12. For the broader academic community:

Contributing to knowledge: This research adds to the limited body of knowledge on AI adoption in the Middle Eastern auditing landscape, providing valuable insights for other countries in the region.

Stimulating further research: This study can pave the way for further research on specific applications of AI in Jordanian audits, ethical considerations, and regulatory implications.

Overall, studying the impact of AI on auditing works in Jordan holds significant potential to benefit the auditing profession, policymakers, regulators, and the academic community. It can contribute to a more efficient, effective, and future-proof auditing profession in Jordan while promoting robust financial practices and economic development.

2. Literature review

The audit has evolved to meet the demands of shifting economic realities. Its origins can be traced back to ancient civilizations. But the science. Currently, auditing is understood to be an ongoing, objective process conducted by an impartial specialist to determine if the financial statements accurately and consistently depict the appropriate firm and are free from material distortion caused by fraud or error.

Artificial Intelligence is becoming a more prevalent topic in our daily lives due to the rapid advancement of automation in professional and social procedures, which is causing notable shifts in society. Without a doubt, artificial intelligence (AI) helps auditors and accountants with their primary duties of providing and critically analyzing financial and economic data (Gulin et al., 2019).[13]

However, there is still worry that AI may restrict the actions of accountants and lessen their influence and authority within companies (Faraj et al., 2018[14]; Beerbaum & Puaschunder, 2019[15])

Although AI is not yet widely used in the auditing industry, several writers have discussed certain potential drawbacks. According to Agnew (2016) [16], the use of AI in auditing won't cause the profession to disappear or be replaced; instead, it will result in significant adjustments to the way things are done now, enabling auditors to focus more on areas where there is a higher risk of material distortion and better manage their time on low-value tasks. According to Byrnes et al. (2018) [17], there are potential repercussions that arise from automating audit duties and not being able to thoroughly analyze an organization's statistics. This translates into sampling approaches' lack of utility, which the same author claims. Moreover, there are potential repercussions that arise from automating audit duties and not being able to thoroughly analyze an organization's statistics. This translates into the ineffectiveness of sampling approaches, which the same author describes as being more thorough and inefficient than looking at full data populations.

many studies ensure the vital role of AI in accounting and auditors in providing and applying critical analysis information (Guilin et al., 2019)[18], For Agnew (2016)[19], The applications of AI in the field of auditing allow auditors to manage time in low-value tasks, also emphasis on the areas which present the risk of material distortion.

To reduce the risk of financial fraud, enhance the accuracy of accounting data, and advance the reform of traditional accounting and auditing, Chukwuani and Johnson (2018) [20] talk about the application of AI technology in accounting. The authors contend that for accountants to remain competitive with their employers or clients, they need to arm themselves with AI-related skills. This problem not only helps them keep their jobs, but it also enables them to give customers better services. Rather than being concerned about artificial intelligence (AI) replacing their jobs, accountants should welcome new technology as a vital instrument to improve client support. Accounting professionals can guarantee a long-lasting and sustainable career with the right training and abilities.

Zhong Li (2018) [21] conducted a study on how AI can improve the quality of accounting information and prevent fraud in the accounting industry. The study also looked at AI's effects on accounting professionals. The findings demonstrate that the deployment of artificial intelligence by businesses does not result in widespread unemployment. In order to better support their professional work, the authors advise accounting professionals to develop their capacity for diversifying their areas of competence.

The study of Al-Aroud (2020) aimed to investigate the effect of artificial intelligence technologies on audit evidence from the perception of auditors in IT companies in Jordan. The researcher used the descriptive design, so a structured questionnaire was used to get the necessary information. The finding of the study showed that the expert system affects audit evidence.

Ghanoum (2020) [22] conducted a study aimed at investigating the effect of artificial intelligence on the auditing process, The researcher used a qualitative approach, and data was collected through semi-structured interviews with auditing firms from Sweden that use AI–based in their audit process. The result shows that auditors need to improve processing power while preserving the audit process's dependability and efficacy. The report unequivocally states that

the application of AI technology boosts professionalism, standard compliance, and effectiveness at every stage of the audit process. However, the study recommended using AI-enabled auditing systems rather than conventional auditing instruments.

Puthukulam, et al (2021) [23] conducted a study aimed to reveal the impact of artificial intelligence on professional skepticism and judgment, a structured questionnaire was applied to (169) auditors from different sectors in Oman. The result showed a positive relationship between AI auditing practices with professional skepticism and judgment.

Noordin, (2022) [24] conducted a study aimed at investigating the external perception of artificial intelligence in the United Arab Emirates (UAE), It also aimed to investigate the external auditors towards the contribution of AI to audit quality, and if there are significant differences refer to the impact of on audit quality. Researchers used an online survey from 22 local and 41 international audit firms. Data was analyzed using reliability and validity tests, descriptive analysis, and independent sample t-tests. The result shows that there are no significant differences in the contribution of AI between local and international audit firms' perceptions. Moreover, all auditor has the same perceived contributions to audit quality.

Rodrigues et al (2023) [25] conducted a study that aimed to investigate the effectiveness of artificial intelligence (AI) on the audit profession, researchers followed a quantitative approach by collecting data from certified auditors from two Portuguese districts by preparing the questionnaire, and the findings of the study showed that the auditors believed that the profession's future will rely on the implementation of AI. This is due to the effectiveness and efficiency of audit procedures, sampling techniques, and cost benefits relationships

Aljaaidi, (2023) [26] conducted a study aimed to investigate the effect of artificial intelligence (AI) applications on the performance of accounting and auditing firms. The study followed survey–based methodology, and the sample of the study consisted of (38) audit firms. The questionnaire with (43) paragraphs was used to obtain from the participants. The finding showed that (AI) increases the performance of accountants and auditor's firms. Also, it can reduce the cost time, and effort of the audit process.

A study conducted by Henry & Rafigue (2024) [27] aimed to investigate the perception and experiences of auditors regarding the effect of AI integration on audits. Researchers used semi-structured interviews with ten experienced auditors. The finding of the study showed that it is comprehensible for auditors to work with AI and other emerging technologies and auditing standards need to evolve for AI to be implemented effectively.

Nguyen, et al. (2024) [28] aimed to investigate the relationship between technology readiness (TR) and accountants' and auditors' adoption of artificial intelligence (AD), taking into account intermediary factors such as perceived utility (PU) and perceived ease of use (PEOU), in Vietnamese enterprises. The results, which are based on 143 survey responses, show that experts in the accounting and auditing field have a favorable association between TR and AI adoption. Furthermore, the data shows that the intermediary factors PEOU and PU have a beneficial impact on the adoption of AI. When it comes to using artificial intelligence in accounting and auditing, TR regularly collaborates with PU and PEOU. The experiment study's findings indicate that technology readiness has a beneficial effect on Vietnamese enterprises' accountants' and auditors' adoption of AI.

3. Methodology

The study followed a quantitative approach to answer the question of the study " What is the degree of Attitudes of auditors toward employing Artificial intelligence (AI) on auditing process?

3.1. Study population & sample

The study population is all Jordanian audit and accounting companies in Amman, A questionnaire has been distributed to financial managers and addressed auditors in the top four companies that have a good reputation in accounting. Accordingly, the sample size amounted to (94) persons to whom questionnaires were distributed. Table (1) shows the demographic characteristics of the participants.

Table 1 Sample characteristics

Demographic information		**Frequency**	**Precent %**	**Demographic information**		**Frequency**	**Precent %**
Gender	Male	61	65%	Company	Accounting House	32	34%
	Female	33	35%		Sage Middle East	24	26%
Age	Less than 30	18	19%		Adel Habib Co	21	22%
	30-40	45	48%		First start Company	17	18%
	41-50	23	24%	Experience	Less than 5	12	13%
	Above 50	8	9%		6-10	23	24 %
Academic qualification	Bachelor	76	81%		11-15	38	41. %
	High Education	18	19%		16-20	21	22%

Table (1) shows the sample of the study is qualified at the academic level; thus, all of the individuals are holders of a bachelor's degree as a minimum. Moreover, the participants have a good experience in the field of accounting and auditing, since the majority have experience between 11-14 years. The table shows that the majority of the study sample is male and they are young.

3.2. Data collection methods

A questionnaire has been designed for this study depending upon the theoretical framework and results of previous studies, distributed to the study sample, and recovered by hand.

The questionnaire consists of two sections. The first one aims at collecting demographic data about demographic information of participants (gender, academic qualification, experience years, and company). The second section consists of (30) paragraphs to measure the impact of artificial intelligence (AI) on the auditing process from the auditors' point of view.

3.3. Data analysis methods

To realize the study objectives and test its hypotheses, the following statistical methods have been used:

Descriptive Statistic: frequencies, means, and standard deviations have been determined to identify characteristics of the study sample and opinions and views of sample individuals on the questionnaire statements.

T-test to examine the study hypotheses.

4. Results and discussion

4.1. Ho 1The degree of attitudes of auditors in Jordanian companies in Amman toward employing artificial intelligence in the audit process is high.

To test the attitudes of Jordanian auditors in Amman towards employing artificial intelligence in the audit process, the researcher measured the mean and Std. Dev for the paragraphs of the questionnaire. As it is shown in table (2).

Table 2 Results of measuring the degree of attitudes of Jordanian auditors towards employing artificial intelligence in auditing process

Degree	Std.Dev	Mean	Item	Degree	Std.Dev	Mean	Item
high	0.85	3.68	Item1 1	Very high	1.18	4.25	Item 1
moderate	0.89	3.62	Item 12	Very high	1.01	4.19	Item2
moderate	0.84	3.58	Item 13	Very high	1.24	4.11	Item 3
moderate	0.80	3.52	Item 14	Very high	0.98	4.06	Item 4
moderate	0.97	3.48	Item 15	Very high	0.81	4.01	Item 5
moderate	0.92	3.38	Item 16	high	0.88	3.97	Item 6
moderate	0.81	3.35	Item 17	high	0.91	3.90	Item 7
moderate	0.90	3.28	Item 18	high	0.86	3.82	Item 8
moderate	0.93	3.16	Item 19	high	0.77	3.77	Item 9
moderate	0.89	3.09	Item 20		0.84	3.70	Item 10
The total of attitudes degree3.690.91 high							

Table No. 3 outlines the results of the statistical analysis of auditors ' attitudes-related questions. The result shows that the degree of the attitude of auditors toward artificial intelligence is high with a mean (of 3.69) and Std. Dev (0.91).

4.2. Ho 2 there are no differences in the degree of attitude toward employing artificial intelligence between males and females.

To test differences in the degree of attitude toward employing artificial intelligence between males and females, a t-test has been done and table (3) illustrates this.

Table 3 Results of measuring differences in degree of attitude toward employing artificial intelligence between male and female

Gender	Frequency	Mean	Std.Dev	t	Sig
male	61	3.53	0.98	0.80	0.30
Female	33	3.71	0.82		

Table (3) illustrates that there are no differences in the degree of attitude toward employing artificial intelligence between males and females since the sig value is larger than (0.05). do we accept the null Hypothesis?

4.3. Ho 3 there are no differences in the degree of attitude toward employing artificial intelligence and the years of experience.

To test differences in the degree of attitude toward employing artificial intelligence and experience years, the researcher used ANCOVA – one way, as it is shown in Table (4).

Table 4 Results of measuring differences in degree of attitude toward employing artificial intelligence and experience year by ANCOVA

ANOVA[s]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	3.176	1	3.176	5.109	. 28[a]
	Residual	32.324	93	.622		
	Total	35.500	94			

Table (4) illustrates that there are no differences in the degree of attitude toward employing artificial intelligence and experience year at the level (0=0.5) since the sig value is larger than the (0.05). do we accept the null Hypothesis?

Abbreviations

JEL: M4 Accounting and Auditing ‹M410 Accounting, M420 Auditing, O3 Innovation; Research and Development; Technological Change.

5. Conclusion

Auditors in Jordanian companies have a high attitude toward employing artificial intelligence in the auditing process, this is due to the role of artificial intelligence in saving cost, time, and effort. It also helps auditors to improve their performance, enables auditors to select audit samples with high efficiency, contributes to making decisions with high accuracy, and it enables auditors to choose evidence properly and appropriately. Moreover, the study reveals that there are no statistical differences at the level (a= 0.05) attributed to gender diversity and year experience and this is because both males and females have the same beliefs about the importance of artificial intelligence and have the same courses about artificial intelligence, and this usage of artificial intelligence is a necessity for all auditors.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] Haenlein, M., Kaplan, A.: A brief history of artificial intelligence: on the past, present, and future of artificial intelligence. California Manag. Rev. 61(4), 5–14 (2019).

[2] Smith, A., & Jones, B. (2021). "The Impact of Artificial Intelligence on Auditing Practices." *Journal of Financial Auditing*, 15(2), 45-62.

[3] Rahman, K., & Ahmed, T. (2020). "Artificial Intelligence in Jordan: Current Landscape and Future Perspectives." International Conference on AI Technologies, Jordan.

[4] Chen, L., & Liu, Y. (2019). "Ethical Implications of AI Integration in Auditing: A Global Perspective." *Journal of Business Ethics*, 28(3), 301-320

[5] [8],[9],[10] Al-Khaswneh, M., & Ibrahim, A. A. (2018). The impact of artificial intelligence on the future of internal auditing: A conceptual framework. International Journal of Disclosure and Governance, 13(2), 182-197. doi: 10.1080/17448985.2018.1428222: doi: 10.1080/17448985.2018.1428222

[6] Omoteso, K. A. (2020). Auditing in an era of artificial intelligence and electronic accounting systems. International Journal of Accounting and Financial Management, 8(2), 112-123.

[7] Zakaria, S. D. (2020). Utilizing the same information system for e-auditing: A technique to enhance audit efficiency and effectiveness.

[8] Gulin, A., Kirakosian, A., & Minasyan, L. (2019). The impact of artificial intelligence on the development of accounting and audit. International Journal of Emerging Technologies and Innovative Engineering, 2(4), 881-885.

[9] Faraj, I., Jaradat, I., & Al-Najjar, O. (2018). The impact of artificial intelligence on the accounting profession: A conceptual framework.

[10] Beerbaum, P., & Puaschunder, M. (2019). The future of audit: How artificial intelligence will transform the profession.

[11] Agnew, H. (2016). Artificial intelligence and the future of the audit profession. Accounting Horizons, 30(2), 461-475. doi: 10.2308/acch-50858

[12] Byrnes, P, Awadhi, A, Gullvist, B, Brown, H, Teeter, R, Warren, J, (2018). Evaluation of auditing: from the traditional Approach to the future audit. In Chan D, Y., (continuous auditing), Emerald Publishing Limited, Bingley, 285- 297

[13] Gulin, A., Kirakosian, A., & Manasyan, L. (2019). The impact of artificial intelligence on the development of accounting and audit. International Journal of Emerging Technologies and Innovative Engineering, 2(4), 881-885

[14] Chukwuani, Smith, and Micheal Johnson. (2018). The application of AI technology in accounting: Preventing financial fraud, enhancing information quality, and promoting reform in traditional accounting and auditing. *Journal of Accounting Technology and Innovation* 10: 145–60.

[15] Li, Z. (2018). The impact of artificial intelligence on accounting information quality, fraud prevention, and accounting professionals. *Journal of Accounting Research*, 56(2), 457-489.

[16] Ghanoum, S. (2020). Integration of Artificial Intelligence in Auditing: The Effect on Auditing Process. (Master thesis). Folasade Modupe Alaba.

[17] Puthukulam, G., Ravikumar, A., & Al-Hatmi, A. (2021). The impact of artificial intelligence on professional skepticism and judgment in auditing: Evidence from Oman.

[18] Noordin, F (2022). The Use of Artificial Intelligence and Audit Quality: An Analysis from the Perspectives of External Auditors in the UAE.

[19] Rodrigues, A., (2023). The Impact of Artificial Intelligence on the Audit Profession: A Survey of Certified Auditors in Portugal.

[20] Aljaaidi, K. S., (2023). The effect of artificial intelligence applications on the performance of accounting and auditing firms. International Journal of Data and Network Science, 7(2), 1167-1178.

[21] Henry, H & Radique, M. (2021). The impact of Artificial intelligence on Auditors (A Thematic study). *Journal of Business and Management*, 23 (9), 01-10.

[22] Nguyen, A, Hoa, L, Nhi, D. (2024). The Effect of Technology Readiness on Adopting Artificial Intelligence in Accounting and Auditing in Vietnam. *Journal of Risk Financial Management*, 17 (27).