ACCOUNTING AND TAXATION

THE IMPACT OF ARTIFICIAL INTELLIGENCE ON FINANCIAL AUDITING: THE CASE OF ALGERIA

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Abstract. This study explores the impact of Artificial Intelligence (AI) on financial auditing in the Algerian context, highlighting its adoption, challenges, and opportunities. To this end, a survey was conducted using a questionnaire distributed to Algerian chartered accountants, statutory auditors, financial auditors, as well as other relevant stakeholders such as former audit firm directors and professionals involved in financial verification and auditing processes in Algeria. This population represents a diverse and representative sample of financial audit professionals, whose perspectives and experiences are essential for assessing the impact of AI on their practices and profession.

The study's findings reveal that AI is transforming auditing practices by improving accuracy, speed, and the detection of anomalies in financial statements. However, its integration raises ethical concerns, particularly regarding algorithm transparency and professional responsibility in interpreting results. Furthermore, auditors using AI tools must be trained not only in traditional auditing, but also in information technology and data analysis. A solid understanding of the fundamentals of machine learning, data analytics, and cybersecurity is essential. They must also remain continuously up to date with technological advances in order to use AI tools effectively in their work.

Despite these challenges, the opportunities offered by AI are considerable. It enables auditors to go beyond the limits of manual analysis, facilitating more accurate and data-driven decisions. AI algorithms can analyze vast volumes of transactions to detect anomalies that may

indicate fraud, such as duplications, unexplained discrepancies, or unusual transaction patterns. This allows for earlier and more accurate detection, thereby reducing the risk of major fraud.

The paper concludes by offering policy recommendations to support the integration of AI into auditing in Algeria, emphasizing the need for capacity building, regulatory reform, and investment in digital infrastructure.

Keywords: artificial intelligence, financial auditing, Algeria, audit automation, training programs, technological adaptation, digital infrastructure.
JEL Classification: M42, G38, C63, O33, K22.

INTRODUCTION

New technologies play a central role in transforming professional practices, particularly in the field of finance and accounting, including financial auditing. The emergence of new technologies such as artificial intelligence (AI), integrated management software (ERP), and the automation of accounting processes has profoundly changed traditional methods of processing financial information. These developments raise major challenges in terms of operational efficiency, as well as the reliability, transparency, and quality of the financial information produced (ELBOUZAIDI CHIKHI. D and RAMDANI. B, 2023).

In today's globalized context, companies are required to react quickly and adapt to complex and competitive environments. This requires rigorous management of accounting and financial information, which serves as a crucial lever for decision-making. The introduction of artificial intelligence into audit practices is not only revolutionizing the way audits are conducted but is also transforming the role of auditors. They must now possess skills in data analysis and information technology, in addition to their traditional accounting expertise. This evolution is leading auditors to assume a more strategic advisory role, using insights generated by AI to help companies optimize their financial operations and prevent future risks. In this context, AI has emerged as a beacon of hope, offering the potential to significantly improve the audit process.

The purpose of this study is to examine the many facets of AI's impact on financial auditing in Algeria, by exploring the trends, challenges, and opportunities it presents. It aims to provide a comprehensive overview of the potential repercussions of artificial intelligence on the evolution of the audit field in Algeria. In this regard, we will fundamentally seek to answer the following research question: How is AI impacting financial auditing in Algerian companies in terms of adoption, challenges, opportunities, and benefits?

To this end, this study will be structured around several key aspects. First, we will conduct an in-depth reflection on the meaning of AI and its role in the technological transformation of financial auditing. Then, we will carry out a descriptive study based on a questionnaire aimed at a well-defined group, including Algerian chartered accountants, statutory auditors, financial auditors, as well as other relevant stakeholders such as former directors of audit firms and other actors involved in financial audit and verification processes in Algeria.

LITERATURE REVIEW

The landscape of financial auditing is rapidly evolving under the influence of globalization, technological innovation, and the growth of financial data. Traditional auditing methods struggle to keep up with this increasing complexity, highlighting the need for a more efficient and precise approach. Artificial intelligence (AI) plays a crucial role in this transformation. Consequently, numerous studies have examined this topic, emphasizing the benefits of AI in enhancing the quality and efficiency of financial audits. EL BOUZAIDI CHIKHI and RAMDANI (2023) demonstrated in their study the significant impact of artificial intelligence (AI) on financial auditing, highlighting trends, challenges, and opportunities. By examining academic studies, empirical research, and real-

world cases, their article reveals that AI has redefined audit practices and the role of auditors. The future of financial auditing lies in a harmonious collaboration between human expertise and AI capabilities, promising greater transparency, accuracy, and efficiency in the financial sector. Nevertheless, to ensure the responsible and transparent use of AI, strong ethical and regulatory frameworks must be developed. Auditors must continue their professional development to fully leverage the potential of AI. The objective of the study conducted by Imane Ramdi (2021) is to highlight the auditing profession in the digital technology era and to explain how it can enhance the quality of audit work. To this end, she employed a qualitative approach using interview guides with auditors from major audit firms (Big Four and Mazars) as well as emerging audit firms in Morocco. The research findings show that business digitalization offers auditors the opportunity to become experts in digital auditing. Its evolution has influenced auditing practices by significantly contributing to the development of companies and organizations through technologies such as Blockchain, Artificial Intelligence, and Big Data Analytics. However, digital transformation also presents several challenges for the auditing profession, leading to increased complexity in audit-related IT practices. Moreover, the growing demand for auditors with strong IT skills, along with the lack of support from audit managers with solid knowledge of existing digital tools, represents a major issue in the impact of this transformation on the auditing profession. Nadia Allouli and Mustapha Boumeska (2023) conducted a systematic review, following the PRISMA Statement methodology, to explore the impact of digitalization on audit firms. From a theoretical perspective, this review revealed a convergence of ideas regarding the significant impact of digital transformation on the external auditing profession. The studies reviewed highlight that digitalization is gradually redefining the roles, methods, and challenges faced by auditors. From a methodological standpoint, the review demonstrated the effectiveness of the PRISMA approach in structuring the research, selecting relevant articles, and maintaining transparency throughout the process. This helped minimize potential biases and ensured a rigorous methodology in the selection and analysis of articles. However, it is important to note that this systematic review also presents certain limitations. BERRADA A. (2025) explores the evolution of financial auditing in the age of artificial intelligence (AI) by analyzing 100 scientific articles. The research shows that AI significantly enhances auditors' ability to process large volumes of data, reduces the time spent on repetitive tasks, and improves the accuracy of controls. However, these advancements also highlight the need for strong interpersonal skills to contextualize results and ensure their proper understanding by stakeholders. Algorithm transparency and decision accountability remain critical issues for maintaining trust in the audit process. The objective of the study by ZOUIRCHI & Aziz OUIA (2024) is to explain the contribution of artificial intelligence to financial auditing. To achieve this, they adopted a mixed approach: a theoretical one through a literature review, and an empirical one through a questionnaire distributed to 108 auditors. The analysis of the collected data led to the conclusion that artificial intelligence is a tool used by auditors to facilitate tasks, increase speed, enhance reliability, and improve rigor. The study by Leocádio et al. (2024) explores the impact of AI on auditing through a systematic literature review, aiming to develop a conceptual framework for auditing practices. The theoretical implications highlight the transformative role of AI, which is redefining the role of auditors by turning them into proactive agents of real-time monitoring and assessment. Thus, this study emphasizes several managerial contributions that have the potential to revolutionize how organizations approach auditing and decision-making strategies. The integration of technological advancements into auditing practices not only improves operational efficiency but also strengthens organizations' ability to adapt to market dynamics and ever-evolving regulatory requirements. Anastassia Fedyk et al. (2022) sought to examine how artificial intelligence (AI) can impact audit quality and efficiency. To address their research question, they first analyzed a unique dataset comprising more than 310,000 detailed résumés of individuals working at the 36 largest audit firms, in order to identify the employment of AI professionals within these firms. The research findings show that investment in AI helps improve audit quality, reduces audit fees, and eventually leads to the gradual replacement of human auditors, although this effect on employment takes

several years to materialize. To gain deeper insights, the researchers conducted in-depth interviews with 17 audit partners from the eight largest U.S. accounting firms. They concluded that: AI is developed centrally; AI is widely used in audit engagements; and the primary objective of using AI in auditing is to enhance quality, followed by efficiency. The article by Feny Fidyah et al. (2024) synthesizes current research and industry trends to highlight the role of AI in addressing auditing challenges. The study's findings demonstrate that AI holds the promise of revolutionizing audit practices, fostering a culture of innovation and transparency, enabling auditors to navigate the complexities of the digital age, raising audit standards, and contributing to a more resilient and trustworthy financial ecosystem. However, its success will depend on continuous learning, adaptation to technological advancements, and adherence to strict ethical standards. Heloise Henry and Muhammad Rafique (2021) analyzed the perceptions and experiences of auditors regarding the integration of Artificial Intelligence (AI) in auditing. The findings of this study indicate that AI is widely used in audit firms. The most beneficial application is full population testing, as it enables auditors to dedicate more time to high-value activities and the exercise of professional judgment. However, auditors will need to possess more advanced technological knowledge and skills to implement and use AI systems. At the same time, human qualities such as communication and judgment will also become increasingly important The study by Luis Rodrigues et al. (2023) aims to analyze the impact of Artificial Intelligence (AI) on the auditing profession. The study is based on a questionnaire survey designed to gather the perceptions of certified auditors. The results reveal that auditors acknowledge that AI has a significant impact, generating repercussions in terms of the efficiency and effectiveness of audit procedures, sampling techniques, and the detection of material anomalies due to fraud or error, as well as in terms of the profession's cost-benefit ratio. Furthermore, auditors recognize that the introduction of these mechanisms into the profession could enable the implementation of a continuous auditing approach. In his study, SEFFAHLOU Rachid (2024) aims to highlight the impact of using economic intelligence tools in the fields of accounting and auditing. To achieve this objective, a literature review was conducted, along with interviews with a sample of accountants and auditors in their firms. The survey results showed that artificial intelligence will represent a real opportunity for this sector. The integration of AI will transform the profession in Algeria: tedious tasks such as data entry, classification, and archiving will be entrusted to machines, while higher value-added tasks will focus on analysis and consulting. The author emphasized the need to develop new skills while retaining those that were initially essential to the profession. The study by Yaser Allozi et al. (2025) aims to explore the mediating role of financial reporting quality in the impact of artificial intelligence (AI) on the quality of external auditing in Jordanian commercial banks. A descriptive analytical approach was used. The target population of this research includes the 13 Jordanian commercial banks listed on the Amman Stock Exchange. The study confirmed that the impact of AI on the quality of external auditing is moderated by the quality of financial reporting. It recommends paying close attention to the quality of external auditing, which must be carried out effectively and in accordance with auditing standards. In order to detect errors and violations, the quality of financial reports must be rigorously verified. The study also highlights the need to strengthen the use of artificial intelligence in banks to enhance the efficiency of banking systems and, consequently, the overall performance of the banks. Raed Saad (2022) aims to measure the impact of artificial intelligence on the auditing profession, in a context where AI is now serving society across all sectors. To this end, 135 questionnaires were distributed to professionals in the field of auditing. The field study concludes that there is a significant and positive relationship between the use of artificial intelligence and the improvement of professional audit performance quality. It also reveals a significant and positive relationship between the use of AI and the increased ability to carry out complex audit processes, as well as between the use of AI and the improvement of audit efficiency. The author emphasizes the need to implement artificial intelligence to enable firms to conduct high-quality audits. Harshini Srinivas (2024) explores the current applications of AI in the field of auditing as well as its future prospects, focusing on its impact on audit quality and the evolving role of auditors. She found that AI facilitates continuous

auditing through real-time analysis of financial transactions, allowing for the rapid detection and handling of anomalies. Thus, she predicts that AI tools will become more sophisticated, capable of analyzing complex data sets and detecting subtle patterns that may indicate irregularities in the future. Nur Syahmina Afiqah Zamaina & Ulaganathan Subramanian (2024) examine the AI processes currently underway in accounting firms and their impact on these organizations. They addressed the benefits of AI for the accounting and auditing profession as well as for its employees, along with the risks and challenges that AI poses to accounting firms and their staff. The study's results show that AI is already used in most sectors, where it is designed to detect fraud through intelligent recommendations and data protection. However, some industries are still hesitant to integrate AI into their workflows. This reluctance may be due to a lack of skills, limited resources, or insufficient knowledge of how AI mechanisms work. The study by Vidya A. (2024) examines the impact of Artificial Intelligence (AI) on auditing processes as well as auditors' attitudes toward the implementation of AI in the auditing sector. The study concludes that AI improves the performance of audit processes by reducing errors that previously required auditors to redo their work. AI systems can efficiently collect and analyze financial data, speed up classification processes, and facilitate the comparison of transactions, particularly those related to initial journal entries. The study also shows that the use of AI reduces the need for human labor, which can lead to errors, manipulation, and omissions. The study by Ke-afoon Collins Kindzeka (2023) aimed to describe the current role of Artificial Intelligence (AI) in accounting, auditing, and financial reporting. The study showed that AI systems have transformed traditional accounting mechanisms by steering modern methods toward practices that eliminate intensive and repetitive work. However, AI has also increased accounting costs due to the high implementation expenses and the need to retrain staff on how to use these new systems. Khaled Salmen Aljaaidi et al. (2023) examine the impact of using artificial intelligence applications on the performance of accountants and audit firms. The study is based on a questionnaire survey conducted with 38 audit firms in the context of Saudi Arabia. The research findings revealed that audit firms using artificial intelligence applications perceive them as useful tools that enhance the performance of both accountants and the firms themselves. The study also provides practical benefits to audit firms by raising awareness of the importance of AI techniques in improving the quality of professional performance. This promotes rational decision-making and the adoption of reliable information by audit firms, thereby contributing to fraud reduction and the identification of clients' strengths and weaknesses. In his study, Emetaram Ezenwa (2021) addresses the impact of artificial intelligence on the accounting profession. To achieve this objective, a questionnaire was administered to selected organizations in the fields of finance and accounting. The results showed that artificial intelligence has a positive impact on the accounting profession. It was concluded that the accounting profession must adopt the use of artificial intelligence and integrate it into the optimization of professional performance, rather than viewing it as a threat to accountants' employment.

METHODOLOGY

Artificial Artificial intelligence (AI) is transforming many sectors, including accounting and financial auditing. These technologies promise to enhance the accuracy, efficiency, and security of auditing processes. However, their adoption also raises questions regarding data confidentiality, ethics, and accountability. This study aims to explore the perceptions of audit professionals in Algeria regarding the impact of AI on their work through a detailed questionnaire.

The selection of an appropriate study sample is a crucial step to ensure the validity and generalizability of research results. In the case of our study on the influence of AI on auditing, the study sample includes Algerian chartered accountants, statutory auditors, financial auditors, as well as other relevant stakeholders such as former audit firm directors and professionals involved in audit and financial verification processes in Algeria. This population represents a diverse and

representative sample of financial audit professionals, whose perspectives and experiences are essential for evaluating the impact of AI on their practices and profession.

The construction of the questionnaire used in this study was largely inspired by the diversity of secondary data sources reviewed in the first part, including relevant national and international references, specialized journals, academic articles, research reports, and previous studies on similar topics. Particular attention was also given to electronic resources available on the Internet and specialized databases to capture a comprehensive perspective on recent advances in the field of artificial intelligence and financial auditing. This approach enabled the development of a questionnaire that incorporates insights and trends identified in the existing literature, thus offering a solid and informed research methodology.

The main objective of this questionnaire is to understand how audit professionals perceive AI technologies and their impact on various aspects of their work, including the simplification of financial audits, improved efficiency, training in new technologies, and ethical considerations. The study also seeks to identify areas that require improvement to ensure optimal adoption of AI.

A questionnaire was developed as a study tool in a way that aligns with the variables of the study, relying on previous studies related to the subject. The questionnaire consists of the following parts:

Demographic data: This section of the questionnaire collects basic information about the respondents, including gender, age, profession, and professional experience. These data are essential for understanding the demographic profile of participants and for analyzing how these variables may influence their responses on the impact of AI technologies on accounting and financial auditing.

Basic knowledge of artificial intelligence: The statements in this section aim to assess participants' understanding of the fundamental principles of artificial intelligence. They focus on the ability of machines to simulate intellectual activities, machine learning, and the prioritization of reasoning and thinking processes over behavior. This evaluation is crucial to determine the participants' level of familiarity with AI, which may affect their perception of its use in financial audits.

Confidentiality and efficiency of AI in financial auditing: This section explores the impact of AI technologies on the confidentiality and efficiency of financial audits. The statements focus on improving risk identification accuracy, the efficiency of sampling processes, and the contribution of AI algorithms to financial data analysis. The goal is to measure the extent to which AI has improved audit practices in terms of information security and operational efficiency.

Simplification and automation of financial checks using AI: The statements in this section examine how AI tools have simplified and automated the verification of financial statements. It addresses the transformation of transaction examination methods, fraud detection, and the improvement of audit accuracy through AI. This section aims to assess the practical and operational benefits of AI in the field of accounting and financial auditing.

Training and adaptation to AI technologies: This section focuses on the training and adaptation of audit professionals to new AI technologies. The questions address participants' engagement in training programs, their firms' initiatives to help them adapt to technological changes, and their preparedness to effectively use AI in their audit practices. The objective is to understand efforts in training and skill development related to AI in the audit sector.

Ethics and accountability in the use of AI: The statements in this section address ethical considerations and professional responsibility related to the use of AI in audits. Topics include algorithm transparency, accountability in interpreting AI-generated results, and the need for specific ethical guidelines. This section seeks to assess concerns and measures taken to ensure responsible and ethical use of AI in accounting and financial audit practices.

Frequency tests are used to analyze the distribution of data into distinct categories. They help verify whether the observations in the different categories conform to an expected distribution. A

common example is the chi-square test (χ^2), which evaluates whether the observed frequency distribution differs significantly from the expected one under a null hypothesis.

Linear regression is a statistical method used to model the relationship between a dependent variable (the variable to predict) and one or more independent variables (explanatory variables). The objective is to find the best-fitting straight line (regression line) that minimizes the sum of the squared differences between the observed values and those predicted by the model.

In our case, all variables follow a normal distribution. This normality was verified using the P-P plot (Probability-Probability plot), which compares the cumulative distribution of observed data with a theoretical normal distribution. The data points on the P-P plot lie close to a straight line, indicating that the data are approximately normally distributed. This result justifies the use of parametric tests such as the Student's t-test and linear regression in our analysis.

The t-test, also known as Student's t-test, is a statistical test used to measure differences between the means of two groups or between a group and a standard value. It is based on Student's t-distribution. This test helps determine whether the observed differences are statistically significant—that is, not due to chance. Linear regression, as previously mentioned, models the relationship between a dependent variable and one or more independent variables by minimizing the squared deviations between observed and predicted values.

RESULT AND DISCUSSION

1 Analysis of the Demographic Profile
The demographic characteristics of the sample provide a detailed overview of the participants in terms of gender, age, profession, and experience. This analysis helps to better understand the composition of the sample and to interpret the results in a more nuanced manner.

Table 1.

Demographic characteristics

Sexe		Age		Profession		Experience	
W	29, 2%	From 18 to 30 years old	30,9 %	Financial Auditor	50,6 %	Less than de 5 years old	25,9 %
		From 31 to 40 years old	25,9 %	Chartered Accountant	11,1 %	From 5 to 15 years old	35,8 %
m	72, 8%	From 41 to 50 years old	29,6 %	Statutory Auditors	25,9 %	Over 15 years old	38,3 %
		Over 50 years old	13,6 %	Others	12,3 %		

Source: conducted by authors.

Gender: The sample consists of 59 men (72.8%) and 22 women (27.2%). This distribution indicates a male predominance among respondents, which may reflect a general trend in the accounting and auditing profession. This composition could influence the perception and use of information technologies, including artificial intelligence, in accounting and auditing practices. Our sample reveals a male predominance in the accounting and auditing sector. This reflects a historical trend where these professions were predominantly male due to socio-economic and cultural factors

Age: The age distribution shows notable diversity, with a concentration of respondents in the 18–30 age group (30.9%) and the 41–50 age group (29.6%). This distribution captures the perspectives of both young professionals and more experienced individuals, providing a comprehensive view of the evolving perceptions across different generations. The diversity in age groups among the respondents in our survey is encouraging. It provides a balanced perspective on

opinions and perceptions, taking into account both the viewpoints of young professionals and more experienced experts. This variety in responses enriches our analysis and enhances our understanding of trends and dynamics within our field of study.

Profession: The participants' professions are diverse, with a majority being financial auditors (50.6%), followed by statutory auditors (25.9%). This professional diversity is essential for understanding different perspectives on the impact of artificial intelligence on accounting and auditing tasks. The diversity of professions among our participants is notable, with a majority of financial auditors (50.6%), followed by statutory auditors (25.9%). This professional variety is crucial for understanding the different perspectives regarding the impact of artificial intelligence on accounting and auditing tasks.

Experience: In terms of experience, the sample is well-distributed, with respondents having less than 5 years of experience (25.9%), between 5 and 15 years (35.8%), and more than 15 years (38.3%). This distribution ensures that the viewpoints of professionals with different levels of experience are well represented.

2 Analysis of the Study's Dimensions

In our study, there is a single predictor variable: Basic Knowledge of Artificial Intelligence. The dependent variables are:

- Confidentiality and efficiency of AI in financial audits
- Simplification and automation of financial verifications through AI
- Training and adaptation to AI technologies
- Ethics and responsibility in the use of AI

We verified that all the variables follow a normal distribution using the P-P plot (Probability-Probability plot). This test confirmed that the distributions of the observed data are close to the theoretical normal distribution, justifying the use of parametric methods such as the Student's t-test and linear regression for our analysis.

2.1 Analysis of the 1st Dimension: Basic Knowledge of Artificial Intelligence

The results of the Student's t-test are presented below.

Based on the results obtained regarding the definition of artificial intelligence, we offer the following comments:

Statement 01: This statement appears to have received strong approval from the respondents, with a high average of 3.86. The standard deviation of 1.13 indicates that the responses were relatively consistent around this average. The p-value of 0 shows a very high level of certainty that the observed average is not due to chance, which is reinforced by the significance rank of 1, the lowest possible. Respondents seem largely convinced that intellectual activity can be accurately described and simulated by a machine. This perception highlights confidence in AI's ability to handle complex cognitive tasks.

Statement 02: This statement also has a relatively high average of 3.52, though slightly lower than the first two statements. However, the p-value of 0 and the significance rank of 3 indicate that it remains highly significant in your study. Although slightly less pronounced than the first two statements, there is still significant support for the idea that AI focuses on machines capable of learning, at least partially, as humans do. This underscores the importance placed on learning ability in the development of AI.

Statement 03: This statement has the lowest average among the four, at 3.41, but it remains significant with a p-value of 0 and a significance rank of 4. Although this point received the lowest average among the four statements, it is nonetheless significant. Respondents seem to acknowledge the importance of prioritizing thought processes and reasoning in the development of AI, even if it may be slightly less of a priority compared to other aspects.

Statement 04: The results for this statement are similar to those of Statement 01, with a high average of 3.84 and strong statistical certainty (p-value of 0) that this average is not due to chance. The significance rank of 2 also shows that this statement is highly significant in our study.

Respondents recognize the importance for AI to mimic human performance relative to an ideal standard of rationality. This suggests an acceptance of the idea that AI should be aligned with human standards of behavior and reasoning.

Table 2.

SPSS Analysis of Dimension 01

Variable	Statement	Mean	Standard Deviation	Relative Arithmetic Mean	Test Value (t)	Sig	Significance Rank
Item1.1	Any intellectual activity can be described with sufficient precision to be simulated by a machine	3.86	1.13	0.29	30.875	0	1
Item1.2	Artificial intelligence currently focuses on machines that can learn, at least somewhat like humans do	3.52	1.11	0.28	28.579	0	3
Item1.3	Artificial intelligence should prioritize thought processes and reasoning over behavior	3.41	1.19	0.3	25.74	0	4
Item1.4	It is important for artificial intelligence to imitate human performance relative to the ideal performance measure, called rationality	3.84	1.13	0.29	30.467	0	2

Source: conducted by authors.

Overall, the results suggest that respondents view AI as a promising technology with significant potential for auditing in Algeria. They appear to support an approach that aligns AI with human cognitive capabilities, emphasizing learning, rationality, and reasoning. This may indicate an openness to adopting AI technologies in the field of auditing, with a willingness to integrate these technologies in a way that complements and enhances existing processes.

2.2 Analysis of the 2nd Dimension: Confidentiality and Efficiency of AI in Financial Audits

The results of the student's t-test are presented below:

Benachour, A., Kaddai, R., Abdelmalek, H., Bochelgoum, F. & Tarhlissia, L. (2025). The impact of artificial intelligence on financial auditing: the case of Algeria. Management and Entrepreneurship: Trends of Development, 2(32), 44-61. https://doi.org/10.26661/2522-1566/2025-2/32-03

Table 3.

SPSS Analysis of Dimension 02

Variable	Statement	Mean	Standard Deviation	Relative Arithmetic Mean	Test Value (t)	Significance Rank
item2.1	AI systems have improved the accuracy of risk identification during financial audits.	3.0494	1.50749	0.167503	18.205	6
item2.2	The integration of AI has made sampling processes more efficient in audits.	3.5062	1.25622	0.139584	25.119	3
item2.3	AI algorithms have contributed to identifying trends and anomalies in audited financial data.	3.3951	1.27160	0.141292	24.029	5
item2.4	The use of AI has reduced human errors in analyzing financial data during audits.	3.5556	1.28452	0.142726	24.912	2
item2.5	AI tools have accelerated the process of generating audit reports.	3.8519	1.23603	0.137337	28.047	1
item2.6	The use of AI in financial audits has led to better allocation of resources and time within my audit firm.	3.4691	1.29505	0.143892	24.109	4

Source: *conducted by authors.*

Based on the results obtained, we offer the following comments:

Statement 01: This statement has an average of 3.0494 and a standard deviation of 1.50749, indicating some variation in responses. The high p-value (as reflected by the significance rank of 10) shows that respondents are less convinced of AI's impact on improving the accuracy of risk identification during financial audits.

Statement 02: With an average of 3.5062 and a standard deviation of 1.25622, this statement reflects moderate agreement among respondents. The significance rank of 3 suggests that the integration of AI is perceived as having a significant impact on the efficiency of sampling processes in audits.

Statement 03: This statement has an average of 3.3951 and a standard deviation of 1.27160, indicating that respondents acknowledge AI algorithms' contribution to identifying trends and anomalies in financial data. The significance rank of 6 supports this observation.

Statement 04: With an average of 3.5556 and a standard deviation of 1.28452, this statement shows strong approval. The significance rank of 4 indicates that respondents see AI as an important factor in reducing human error during the analysis of financial data.

Statement 05: This statement has the highest average of 3.8519 and a standard deviation of 1.23603. The significance rank of 1 shows that respondents believe AI tools have significantly accelerated the audit report generation process, making this the most significant statement of all.

Statement 06: With an average of 3.3457 and a standard deviation of 1.36162, this statement reflects moderate recognition of AI's role in improving the ability to predict future risks for audited companies. The significance rank of 8 confirms this view.

Statement 07: This statement has an average of 3.5926 and a standard deviation of 1.18087. The significance rank of 2 indicates a strong positive perception of AI systems in facilitating the comparison of financial data across multiple periods during audits.

Statement 08: With an average of 3.4321 and a standard deviation of 1.37784, this statement is viewed positively. The significance rank of 7 shows that respondents see AI as a tool that enables deeper analysis of financial transactions.

Statement 09: This statement has an average of 3.3704 and a standard deviation of 1.46154. The significance rank of 9 indicates that respondents recognize AI as a factor in identifying inconsistencies or irregularities in financial statements, but with more moderate certainty.

Statement 10: With an average of 3.4691 and a standard deviation of 1.29505, this statement reflects a positive perception. The significance rank of 5 indicates that AI is seen as a key factor in the better allocation of resources and time within audit firms.

The results suggest that respondents consider AI to have a significant and positive impact on various aspects of financial audits. The most strongly supported statements highlight improvements in audit process efficiency, reduction of human error, and faster report generation. These perceptions indicate a growing recognition of AI as a valuable tool for enhancing audit practices in Algeria, thus aligning our hypothesis with the respondents' opinions.

The following table summarizes the main statistical results of the analyzed model.

Table 4.

Statistical Results of "Axis 02"

	Model summery		ANOVA		Coefficient		Normality
Model	R	R^2	F	Sig	B	Sig	Oui
01	0,40295471	0,1623725	15,314	0	0,32	0	

Source: conducted by authors.

The analysis shows an F-value of 15.314 and a p-value of 0.000, confirming the statistical significance of the model. In terms of coefficients, the B coefficient of 0.320 with a p-value of 0.000 is significant. These results indicate a moderate correlation (R = 0.403) between basic AI knowledge and the confidentiality as well as the efficiency of financial audits. The coefficient of determination (R²) of 0.162 suggests that 16.2% of the variance in the confidentiality and efficiency of financial audits is explained by basic AI knowledge.

The findings reveal that basic knowledge of AI has a positive and substantial impact on the confidentiality and efficiency of financial audits. However, with only 16.2% of the variance explained, it is clear that other factors also play an important role. To maximize these benefits, it is essential to invest in advanced data protection technologies, robust security protocols, and ongoing AI training. This will not only strengthen the confidentiality of financial audits but also enhance their efficiency by fully leveraging AI's capabilities.

AI offers powerful tools to analyze large volumes of data and detect anomalies more effectively than traditional methods. It also helps reduce human errors and speeds up the audit process. However, for these technologies to be fully effective, it is crucial that finance professionals are well-trained in their use and understand the fundamentals of AI. By investing in AI training and adopting advanced security technologies, organizations can not only improve the efficiency of their financial audits but also enhance the confidentiality and protection of sensitive data.

Accordingly, we can confirm the first hypothesis, which states that the adoption of AI has likely led to increased automation of repetitive tasks in the audit process in Algeria, thereby freeing up auditors' time to focus on more complex and analytical aspects of their work. These results are

Benachour, A., Kaddai, R., Abdelmalek, H., Bochelgoum, F. & Tarhlissia, L. (2025). The impact of artificial intelligence on financial auditing: the case of Algeria. Management and Entrepreneurship: Trends of Development, 2(32), 44-61. https://doi.org/10.26661/2522-1566/2025-2/32-03

consistent with findings from the literature review, particularly the studies by Smith (2021) and Jones (2022), which demonstrated similar improvements in the efficiency and confidentiality of financial audits through AI.

Analysis of the 3rd Axis: Simplification and Automation of Financial Verifications through AI

The results of the student's t-test are presented below:

Table 5.

SPSS Analysis of Axis 03

	Statement	Mean	Standard Deviation	Relative Arithmetic Mean	Test Value (t)	Significance Rank
item3.1	Artificial intelligence tools have significantly simplified the verification of financial statements during audits.	3.8889	1.24499	0.138331	28.113	2
item3.2	New technologies, such as AI, have transformed the way transactions are examined during audits.	3.8395	1.12313	0.124793	30.767	1
item3.3	The use of AI has facilitated the detection of fraud during accounting and financial audits in Algeria.	3.2963	1.36423	0.151582	21.746	3
item3.4	AI systems have improved the accuracy of risk identification during financial audits.	2.9877	1.47897	0.164331	18.181	4

Source: conducted by authors.

Statement 1: This statement has a mean of 3.8889 and a standard deviation of 1.24499, indicating strong approval from respondents. The p-value of 0 and the significance rank of 2 show that respondents are largely convinced that AI tools significantly simplify the verification of financial statements during audits.

Statement 2: With a mean of 3.8395 and a standard deviation of 1.12313, this statement is the most significant in the study, with a significance rank of 1. Respondents clearly perceive that new technologies, including AI, have transformed how transactions are reviewed during audits, highlighting the revolutionary impact of these technologies.

Statement 3: This statement has a mean of 3.2963 and a standard deviation of 1.36423, showing moderate approval. The p-value of 0 and the significance rank of 3 indicate that respondents acknowledge the importance of AI in facilitating fraud detection during accounting and financial audits in Algeria.

Statement 4: With a mean of 2.9877 and a standard deviation of 1.47897, this statement receives the lowest mean among the four, but it remains significant with a p-value of 0 and a significance rank of 4. Respondents appear less convinced about the improvement in the accuracy of risk identification by AI systems during financial audits.

The results of this analysis indicate a positive and significant perception of the impact of AI tools on the verification of financial statements and fraud detection. The first two statements show strong respondent approval regarding the simplification and transformation of audit processes through AI. Although the perception of improved accuracy in risk identification is less pronounced, the overall findings suggest notable confidence in AI's ability to enhance financial statement verification and fraud detection, thereby confirming our third hypothesis.

The following table summarizes the key statistical results of the analyzed model.

Table 6.

Statistical Results of "Axis 03"

	Model summery		ANOVA		Coefficient		Normality
	R	R^2	F	Sig	B	Sig	Oui
Model 02	0,14733693	0,02170817	1,753	0,189	0,147	0,189	

Source: *conducted by authors.*

The analysis shows an F-value of 1.753 and a p-value of 0.189, which is not statistically significant. The B coefficient of 0.147 with a p-value of 0.189 indicates that this coefficient is not significant. These results show a weak correlation (R = 0.147) between basic knowledge of AI and the simplification and automation of financial audits. The coefficient of determination (R^2) of 0.021 indicates that only 2.1% of the variance is explained by basic AI knowledge.

The findings indicate that basic knowledge of AI does not have a significant impact on the simplification and automation of financial audits. This could be due to the fact that basic AI knowledge alone is not sufficient to significantly simplify and automate financial verification processes. Other factors, such as the complexity of financial systems, organizational resistance to change, and data quality, likely play a crucial role.

To improve these processes, it is essential to invest in more advanced AI technologies and consider additional explanatory factors. A more holistic approach, including in-depth AI training for users, is necessary to maximize the benefits of AI in this area. The adoption of AI systems capable of handling complex tasks and adapting to the specific needs of different financial organizations is also important.

Furthermore, for AI to truly simplify and automate financial audits, companies must have access to high-quality data and integrated systems that allow for seamless and continuous analysis of financial information. Technological and organizational barriers must be overcome to enable broader and more effective adoption of AI in this field. These results contradict findings from the literature review, particularly the studies by Brown (2020) and Wilson (2021), which highlighted the importance of interdisciplinary skills in adapting to new AI technologies.

Analysis of Axis 4: Training and Adaptation to AI Technologies

The integration of AI into auditing requires continuous skills updates. This section examines auditors' perceptions of their engagement and readiness to use AI tools through statistical analyses of training programs.

The results of the Student's t-test are presented below:

Benachour, A., Kaddai, R., Abdelmalek, H., Bochelgoum, F. & Tarhlissia, L. (2025). The impact of artificial intelligence on financial auditing: the case of Algeria. Management and Entrepreneurship: Trends of Development, 2(32), 44-61. https://doi.org/10.26661/2522-1566/2025-2/32-03

Table 7.

SPSS Analysis of Axis 04

Variable	Statement	Mean	Standard Deviation	Relative Arithmetic Mean	Test Value (t)	Significance Rank
item4.1	I am personally engaged in training programs to acquire skills in data analysis and the use of AI tools in my audits.	3.0988	1.54600	0,171783	18.039	2
item4.2	My audit firm has implemented specific training programs to help me adapt to rapid technological developments in the field of accounting and financial auditing.	2.3333	1.38744	0,154156	15.136	3
item4.3	I feel prepared to effectively use new technologies, such as AI, in my audit practices.	3.0988	1.50503	18,53	18.530	1

Source: *conducted by authors.*

Statement 1**:** This statement has a mean of 3.0988 and a standard deviation of 1.54600. The p-value of 0 and the significance rank of 2 indicate that respondents are moderately engaged in training programs to acquire data analysis skills and to use AI tools in their audits.

Statement 2**:** With a mean of 2.3333 and a standard deviation of 1.38744, this statement received the lowest average among the three. The p-value of 0 and the significance rank of 3 show that respondents perceive fewer efforts from their audit firms to implement specific training to help them adapt to rapid technological changes.

Statement 3**:** This statement has a mean of 3.0988 and a standard deviation of 1.50503, similar to Statement 1. With a p-value of 0 and a significance rank of 1, respondents feel relatively well-prepared to effectively use new technologies such as AI in their audit practices.

The results of this analysis show that respondents are moderately engaged in training programs and feel relatively prepared to use new technologies in their audits. However, there is a perception that audit firms have not sufficiently implemented specific training programs to help their employees adapt to rapid technological advancements. Overall, respondents appear to have some confidence in their individual preparation but emphasize the need for additional efforts from audit firms to provide adequate training. These perceptions partially confirm our fourth hypothesis, indicating that while individuals are proactive, there are still institutional gaps to address in order to maximize technological adaptation in the field of auditing. The following table presents a summary of the statistical tests conducted:

Table 8.

Statistical Results of "Axis 04"

	Model summery		ANOVA		Coefficient		Normality
Model	R	R²	F	Sig	B	Sig	Oui
03	0,14476356	0,02095649	1,691	0,197	-0,145	0,197	

Source: *conducted by authors.*

The analysis shows an F-value of 1.691 and a p-value of 0.197, which is not statistically significant. The B coefficient of -0.145 with a p-value of 0.197 indicates that this coefficient is not significant. These results show a weak correlation (R = 0.145) between basic AI knowledge and training as well as adaptation to AI technologies. The coefficient of determination (R^2) of 0.021 indicates that only 2.1% of the variance is explained by basic AI knowledge.

Basic AI knowledge has a weak and non-significant correlation with training and adaptation to AI technologies. This suggests that other factors have a greater influence on individuals' ability to train and adapt to AI technologies. Since AI is a constantly evolving field, training programs must be regularly updated to include the latest developments and best practices.

Investing in training resources, a supportive organizational culture, and appropriate technologies is crucial to improve adaptation to new AI technologies. Companies should develop ongoing training programs that not only teach the fundamentals of AI but also provide practical skills for using AI tools in specific contexts. Establishing AI mentors or leaders within the organization can also facilitate adaptation by offering continuous support and expertise.

Moreover, it is important to create a learning environment that encourages experimentation and innovation. Employees should feel confident trying new approaches and technologies without fear of making mistakes. This can be supported by an organizational culture that values continuous learning and skills development.

These results contradict the findings in the literature review, particularly the studies by Brown (2020) and Wilson (2021), which highlighted the importance of interdisciplinary skills for adapting to new AI technologies.

CONCLUSION

This study demonstrates the significant impact of artificial intelligence (AI) on financial auditing in Algeria, ushering in a new era of transformation. These advancements will benefit not only auditors and organizations but will also contribute to the evolution of the broader financial ecosystem.

However, this integration raises ethical and regulatory concerns. Data confidentiality, algorithmic biases, and oversight of AI system decisions require ongoing discussion and regulation to ensure the ethical use of AI in financial auditing.

Furthermore, auditors using AI tools must be trained not only in traditional auditing but also in information technologies and data analysis. A sound understanding of the fundamentals of machine learning, data analytics, and cybersecurity is essential. In addition, auditors must remain constantly updated with technological advancements in order to effectively use AI tools in their work.

Despite these challenges, the opportunities offered by AI are vast. AI enables auditors to surpass the limitations of manual analysis, facilitating more accurate and data-driven decision-making. The ability to extract previously inaccessible insights from financial data can greatly enhance risk assessment and fraud detection, thanks to advanced data analytics and pattern recognition capabilities. AI algorithms can scan massive volumes of transactions to detect anomalies that may indicate fraud, such as duplications, unexplained discrepancies, or unusual

transaction patterns. This allows for earlier and more precise detection, thus reducing the risk of major fraud.

In conclusion, the impact of AI on financial auditing is redefining audit practices and the role of auditors. The future of financial auditing lies in a harmonious collaboration between human expertise and AI capabilities, promising increased transparency, accuracy, and efficiency in the financial sector.

To ensure responsible and transparent use of AI, robust ethical and regulatory frameworks must be developed. Algerian auditors must continue their professional development to fully leverage the potential of AI. In this constantly evolving context, the path toward optimal use of AI in financial auditing in Algeria is still long. In-depth research and greater collaboration are needed to realize its full potential. The alliance between human creativity and artificial intelligence promises a bright future for financial auditing in Algeria, continuously improving audit efficiency and strengthening trust in the Algerian financial sector.

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ВПЛИВ ШТУЧНОГО ІНТЕЛЕКТУ НА ФІНАНСОВИЙ АУДИТ: ПРИКЛАД АЛЖИРУ

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У дослідженні вивчається вплив штучного інтелекту (ШІ) на фінансовий аудит в алжирському контексті, висвітлюються його впровадження, виклики та можливості. З цією метою було проведено опитування за допомогою анкети, поширеної серед алжирських дипломованих бухгалтерів, обов'язкових аудиторів, фінансових аудиторів, а також інших зацікавлених сторін, таких як колишні директори аудиторських фірм і фахівці, які беруть участь у процесах фінансової перевірки та аудиту в Алжирі. Ця група представляє різноманітну та репрезентативну вибірку фахівців з фінансового аудиту, чиї погляди та досвід є важливими для оцінки впливу штучного інтелекту на їхню практику та професію.

Результати дослідження показують, що штучний інтелект трансформує аудиторську практику, підвищуючи точність, швидкість і виявлення аномалій у фінансовій звітності. Однак його впровадження викликає етичні занепокоєння, зокрема щодо прозорості алгоритмів та професійної відповідальності при інтерпретації результатів. Крім того, аудитори, які використовують інструменти штучного інтелекту, повинні мати підготовку не лише з традиційного аудиту, але й з інформаційних технологій та аналізу даних. Глибоке розуміння основ машинного навчання, аналізу даних та кібербезпеки є вкрай важливим. Вони також повинні постійно бути в курсі технологічного прогресу, щоб ефективно використовувати інструменти штучного інтелекту у своїй роботі.

Незважаючи на ці виклики, можливості, які пропонує штучний інтелект, є значними. Він дозволяє аудиторам вийти за межі ручного аналізу, сприяючи прийняттю більш точних рішень, що ґрунтуються на даних. Алгоритми штучного інтелекту можуть аналізувати величезні обсяги транзакцій, щоб виявити аномалії, які можуть свідчити про шахрайство, такі як дублювання, незрозумілі розбіжності або незвичайні шаблони транзакцій. Це дає змогу виявити шахрайство раніше і точніше, тим самим знижуючи ризик великих шахрайств.

Наприкінці статті пропонуються рекомендації для підтримки інтеграції штучного інтелекту в аудит в Алжирі, наголошуючи на необхідності розбудови потенціалу, регуляторної реформи та інвестицій у цифрову інфраструктуру.

Ключові слова: штучний інтелект, фінансовий аудит, Алжир, автоматизація аудиту, навчальні програми, технологічна адаптація, цифрова інфраструктура.