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THE REALITY OF USING ARTIFICIAL INTELLIGENCE IN THE ACCOUNTING FIELD IN ALGERIA

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Abstract

This study aims to evaluate the use of artificial intelligence technologies in the accounting field, emphasizing its importance in enhancing work quality and thoroughly examining the most significant impacts of this technology on the Algerian environment. To achieve the desired objectives, professionals were interviewed through a structured questionnaire distributed to 50 individuals. The obtained opinions were carefully analyzed, and the study hypotheses were tested using the SPSS V23 statistical package. Several key conclusions were yielded in the study, the most notable being that artificial intelligence (AI) technology provides essential support to accountants and external auditors, enabling them to transition away from routine tasks. Furthermore, AI significantly contributes to professional development by facilitating new experiences and skills acquisition that expedite the efficient completion of duties and functions. Compared to traditional methodologies, AI-enhanced accounting and auditing software also facilitates the detection of significant risks by enabling AI technology to process and analyze substantial volumes of complex financial data.

Keywords: *Technology, Artificial intelligence, Accounting, Financial data, Algerian environment.*

1 INTRODUCTION

Scientific and technological progress has led institutions to adopt scientific methods, especially considering the increasing competition among institutions, where time has become one of the most significant elements that control and determine their profits, and accordingly, keeping pace with the rapid and successive development in the business environment. It has become an imperative necessity to maintain their position. Maintaining their position is essential. Given the vast volume of data and information, organizations must leverage technology to ensure efficient processing and rapid results. No doubt, relying on traditional management does not achieve this goal. This has led institutions to rely on information

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and communications technology by turning to electronic management or digitization. Consequently, reliance on traditional management has diminished. Electronic information has become an effective tool for building an information society, as electronic circulation of information has been credited with achieving speed and avoiding errors.

Digitization has impacted all aspects of life, including health, journalism, and education. Naturally, the economic sector is among those adapting to these advancements. During the technological revolution in information and communications, digital technology has led to artificial intelligence, which serves to help administrators with their management. The latter plays a vital role in digital transformation and adds additional value by reducing the burden of repetitive tasks and simulating the activities performed by intelligent beings (humans), such as the ability to think and learn from the experiences of the previous stage. It also helps to achieve operational efficiency, reducing costs through its ability to process vast amounts of data and information, and provide users with various services characterized by accuracy and speed of completion, which also helps in the decision-making process.

We also find that the accounting and auditing professions were not immune to these developments in the Algerian environment. This progress has led to an increase in the interest of accountants and auditors in adopting artificial intelligence techniques. It has revolutionized the way they work. It has also led to many positive changes, including but not limited to: improving accounting and auditing procedures and methods, tracking all files without relying on paper documents, enhancing the quality of professional judgment, etc. It also enables AI to complete all accounting stages for an entire year, aligning them with approved standards, preparing necessary reports, and suggesting solutions that benefit the institution.

Despite significant technological advancements worldwide, the integration of AI in the accounting and auditing professions has not yet been adequately monitored. AI serves as an alternative that ensures business continuity and prevents disruptions in emergencies and uncertain circumstances, such as the spread of the COVID-19 pandemic, while also helping to mitigate economic and human losses.

Since accounting and auditing are among the professions most impacted by AI, its adoption is expected to enhance the ability to handle complex tasks, improve professional performance, and increase practitioners' efficiency.

1.1 Problematic of the Study

Accordingly, the research idea has emerged and can be formulated with the following main research question:

RQ1 – What is the reality of adopting artificial intelligence in accounting and auditing professions in the Algerian environment?

The following sub-questions arise from the main research question:

RQ1.1 – Do accounting and auditing offices in Algeria have the technical qualifications to utilise AI?

RQ1.2 – To what extent does AI enhance the quality of work in Algeria's accounting sector?

RQ1.3 – Does using artificial intelligence impact the auditing and accounting profession?

1.2 Hypotheses of the Study

Based on the sub-questions, the study hypotheses were formulated as follows:

H_{01}: Accounting and auditing offices in Algeria do not have the technical qualifications to enable them to use artificial intelligence.

H_{02}: Artificial intelligence does not improve the quality of work in the accounting field in Algeria.

H_{03}: Artificial intelligence use does not impact auditing and accounting professions in Algeria.

1.3 Importance of the Study

It has become more and more necessary to pay attention to modern digitization techniques because of their importance and its connection to public service, especially in light of the services it provides to project management, as the importance of the research is evident in the fact that it addresses a newly emerging topic of AI as one of the emerging technologies of digital technology and its impact on the accounting and

auditing professions, while seeking its importance in achieving efficiency and effectiveness in the accounting environment.

1.4 Objectives of the Study

This study aims to:

- Analyze the accounting and auditing professions depending on artificial intelligence techniques.
- Recognize the significant contribution of artificial intelligence in developing the practices of the accounting and auditing professions;
- Detail the crucial importance of artificial intelligence and its contribution towards improving services in the accounting and auditing domains.
- Examine the multifaceted implications of artificial intelligence techniques in the accounting environment.

1.5 Methodology of the Study

This research relies on the descriptive and analytical approach to accurately describe scientific problems and reach positive conclusions. The nature of the research topic requires collecting and summarizing data and facts related to the newly emerging scientific field of artificial intelligence, which has developed through digitization.

This study will analyze various concepts and information obtained from the Algerian environment. The authors will use suitable statistical analysis tools to process the research data.

Finally, the authors will identify key findings and propose appropriate solutions for the research.

2 IMPORTANCE OF ACCOUNTING AND AUDITING PROFESSION

2.1 Concept of Accounting Profession

The accounting profession is one of the essential functions in any company. Accountants' jobs include recording economic events, preparing company accounts, and summarizing information in financial statements to determine the company's financial position. (Patra & Panda, 2006, p. 1).

The accounting function will transform with the advent of artificial intelligence. Through this technology, an accountant may input digital representations of invoices, leading to the automated recording of transactions. Furthermore, the accounting function will increasingly emphasize financial forecasting and risk management.

2.2 Importance of the Accounting Profession

The importance and role of the accounting profession lie in providing comprehensive accounting information about a company's activities, which aids in financial planning and strategic decisions. The quality of accounting information also determines the level of transparency in corporate governance and management. (The fundamental significance and objective of the accounting profession revolve around offering comprehensive accounting information concerning a company's business activities.) Thereby facilitating financial planning and strategic decision-making. Furthermore, the quality of accounting information is a key determinant of transparency in corporate governance and management. High-quality financial reports are essential to ensuring transparency, facilitating the attraction of local and international investments, and creating a sound investment environment, which enhances investor confidence and, consequently, promotes financial stability (High-quality financial reports are paramount for ensuring transparency, facilitating the attraction of both domestic and international investments, and establishing a robust investment environment, thereby enhancing investor confidence and, as a consequence, promoting financial stability) (Dauda, Ombugadu, & Aku, 2015).

2.3 Definitions of Auditing Profession

The auditing profession is carried out by a competent, independent, and impartial professional who evaluates financial statements, internal controls, organizational structures, procedures, and company processes based on a standardized quality framework. (The auditing profession is conducted by a competent, independent, and impartial professional who issues an opinion on financial statements, internal

controls, organizational structures, procedures, or any company process, based on established quality frameworks.)

There are many definitions of the auditing profession, the most important of which are listed below:

The American Accounting Association (AAA) defines the auditing profession as "a systematic and objective process of obtaining and evaluating evidence concerning facts and economic events to verify the degree of conformity between those facts and the specific criteria and to communicate the results to users of information interested in the investigation in this regard" (Zaaich & Khelaifia, 2024).

Ayachi (2019) defined the auditing profession as the systematic examination of a particular situation by an independent and competent person to ascertain the validity of the items to be audited and to verify compliance with standards.

The auditing profession is also known as one of the most important professions in the business environment, as it is concerned with reviewing and examining a firm's financial statements to provide an opinion on the validity and integrity of those financial statements (Al-Dalabih, 2018).

2.4 Importance of *the* Auditing Profession

The importance of auditing profession lies in the fact that it is a tool that aims to serve the users of audited financial statements, who are represented by (managers, current and future investors, financial institutions, various governmental organisations, trade unions, etc.) so that they can rely on them in making diverse decisions, imposing taxes and formulating various policies (Hayder & Abdulkareem, 2022).

2.5 Accounting and Auditing Profession Integration

Accounting and auditing are two significant processes related to financial activities. Accounting is considered a mirror that reflects economic events and financial transactions, as it ensures the preparation and disclosure of financial statements.

Auditing is also considered a part of the world of accounting, which in turn contributes to ensuring the accuracy and reliability of accounting.

Unlike internal audit, which is considered an operational audit that touches all aspects of the organization's activity.

The key aspects of the relationship between accounting and auditing are as follows:

- *Interdependence.* Accounting and auditing are interrelated processes. Accounting forms the foundation of finance, ensuring the precise recording and systematic aggregation of financial transactions. In contrast, auditing provides an independent certification of the accuracy and reliability of financial statements, ensuring they adhere to established accounting procedures.
- *Verification and Assurance***.** The audit process constitutes an independent attestation, affording stakeholders a degree of confidence in the dependability of financial information. It assures that financial statements, constructed by accountants, are materially accurate, free from significant errors, and comply with accounting principles and statutory requirements.
- *Dependency*. The auditor's work is typically performed upon the completion of accounting procedures.
- *Compliance and Regulation***.** The functions of accounting and auditing are closely tied to the imperative of compliance with accounting standards, statutory regulations, and legal obligations. To precisely record and report financial transactions, accountants apply established accounting principles and standards. Auditors subsequently examine the degree of adherence of financial statements to these principles and regulatory stipulations.
- *Feedback period***.** The conclusions and proposals derived from the audit function provide substantive feedback to accountants. Through the audit process, accountants gain insights into areas where financial reporting procedures, internal controls, and overall financial governance can be improved. This knowledge helps them implement necessary refinements to enhance accuracy and compliance.

- *Inputs and outputs*. Accounting inputs are the documents and data supporting the operations, and their outputs are the financial statements. A sequential relationship exists whereby the accounting outputs are utilized as the inputs for auditing.
- *Stakeholder Trust***.** The interconnectedness of accounting and auditing is essential for building and maintaining stakeholder trust. Dependable financial reporting, substantiated by independent audits, enhances the credibility of financial information. Consequently, this heightened credibility fosters trust among investors, lenders, regulatory bodies, and other relevant stakeholders. *(Abdimusoyevich, 2023)*.

3 APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN ACCOUNTING

3.1 Definition of Artificial Intelligence

There are many definitions of artificial intelligence by academics and technical experts, the most important of which are:

John McCarthy defined artificial intelligence (AI) as a “science and engineering of creating intelligent machines" (Owonifari, Igbekoyi, Awotomilusi, & Dagunduro, 2023).

Deloitte defined Artificial Intelligence in 2017 as "the application of a set of computerised tools to perform tasks that require imitation of human intelligence", and in 2018 PwC defined artificial intelligence as "an automated system that can perceive its environment through reasoning and learning to take appropriate actions" (Dibiaggio, Nesta, & Keita, 2022).

The OECD defined artificial intelligence in 2019 as a "machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations or decisions influencing real or virtual environments." (Fedyk, Hodson, Khimich, & Fedyk, 2022, p. 943).

From the above definitions, artificial intelligence can be defined as a field of machine science concerned with the creation of intelligent programmes and systems that simulate human mental abilities to achieve certain goals, such as solving complex problems.

3.2 Objectives of AI

Artificial Intelligence is one of the most prominent modern technologies that has invaded many fields of life and work, so it seeks to achieve many goals, the most important of which are:

- Understanding the nature of human intelligence by creating intelligent computer programs capable of simulating human behavior;
- Develop and enhance the computer's ability to perform new functions such as solving complex problems, diagnosing issues, and making decisions; and
- Access to systems that are intelligent and behave like humans in terms of understanding and learning.

3.3 AI’s Influence on Accounting and Auditing Professions

The impact of artificial intelligence, through its many branches, on the field of accounting can be explained through the following points:

- The use of *Expert Systems (ES)* in accounting and auditing has proven beneficial. Findings indicate that expert systems enhance various aspects of accounting practice, including cash flow appraisal and investment evaluation.

  Additionally, they assist in determining financial status by interpreting financial ratios and returns and analyzing financial reports. Specialized systems are also used in taxation. Expert systems assist auditors in planning and evaluating internal controls and identifying audit risks. Detecting fraud risks and recognizing errors are crucial. Equally important is their ability to process vast, complex data, enabling external auditors to complete their work more efficiently and accurately.

- *Use of Optical Character Recognition (OCR) in accounting and auditing***.** The OCR, as previously defined, finds application within accounting to automate the character recognition process involved in the digital entry and processing of invoices. This is achieved through the invoice scanning, followed by system-based analysis to identify and interpret the data. Thanks to intelligent data mining and machine learning techniques,

OCR can also find various information in the invoice and perform accounting translation, which allows the data to be processed promptly. Optical character recognition (OCR) improves image quality, allowing the auditor to read it and allowing information to be easily indexed and retrieved.

- *Use of Robotic Process Automation (RPA) in accounting***.** Robotic Process Automation (RPA) is a valuable tool for automating various accounting procedures, including reconciling information from heterogeneous systems such as QuickBooks, electronic spreadsheets (e.g., Excel), and client invoices. To illustrate, an accounting reconciliation functionary can deploy a software agent to autonomously compare these three data origins and ascertain discrepancies with notable rapidity, frequently within a minute's timeframe. Additionally, RPA is capable of discerning irregularities and outliers, which human auditors can then investigate.
- *Use of Machine Learning (ML) in Accounting and Auditing*. Machine learning finds application in accounting for model analysis and the generation of prognostications. Software leverages machine learning techniques on an entity's historical financial disclosures, allowing the predictive model to assimilate key features and attributes of the entity's financial and non-financial datasets.

Moreover, machine learning technologies automate the entry of transactions into accounting ledgers, streamlining one of the most monotonous and labor-intensive tasks in accounting.

The implemented system permits the granular coding of accounting entries. Complex business transactions are readily susceptible to disaggregation, described through established accounting terminology, and recorded within the framework of general ledgers. (Rachid, 2024)

- *Neural Network***.** It is the field that uses neuroscience by simulating the neural networks of the human brain, so that neural networks can learn and improve performance without being explicitly instructed on how to do something (Boughazela & Ould Bahammou, 2024).
- *Deep Learning***.** Deep learning is the second generation of machine learning. It offers multiple layers of learning from the big data sets it processes, refining the decisions and data classifications in each layer to produce an accurate and clear vision (Farahani & Esfahani, 2022).
- *Continuous Auditing***.** It is indicated that Continuous Auditing is a thorough electronic auditing method allowing auditors to provide some level of assurance on continuous data during or shortly after its disclosure, highlighting its association with paperless accounting information systems, significant technical hurdles, lack of standards and guidance, increased value of real-time financial information, and timely audit reports.
- *Decision Support* Systems. A Decision Support System (DSS) is defined as a computerized system engineered to automate aspects of the decision-making process. This multi-disciplinary system is engineered to address unstructured management problems and enhance the efficacy of decision-making processes. Its principal objective is the generation of diverse alternatives and potential outcomes to facilitate informed decision-making, thereby reducing reliance on purely manual human judgment. Decision Support Systems find application in numerous unstructured tasks within the domains of accounting and auditing.
- *Hybrid Systems*. Audit tasks exhibit heterogeneity in their nature, with specific tasks necessitating quantitative analysis, while others demand qualitative assessment, and a subset requiring an integrated approach encompassing both methodologies. Under such circumstances, a hybrid system integrating diverse AI technologies proves more efficacious. (Hasan, 2022)

3.4 Developing the accounting and auditing professions by using artificial intelligence

The use of artificial intelligence can contribute to the development of the accounting and auditing professions through several factors, the most important of which are:

- *Automate various tasks*. Various AI branches can be used to perform repetitive, rule-based tasks more efficiently and with fewer errors. By incorporating these automated tasks into the accounting and auditing processes, it is

possible to achieve reliable results. Automation enhances the efficiency of auditing and accounting but also offers the possibility of obtaining equally reliable results when combined with human control.

- *Reduce time and improve accuracy.* Leveraging traditional statistical techniques to analyse large amounts of data requires a significant investment of time from accountants and auditors to perform the necessary tests. By using artificial intelligence to analyse big data, accountants and auditors can reduce the time spent on auditing and accounting, thereby reducing costs and enhancing efficiency (Aitkazinov, 2023).
- *Reduce sampling risk.* Auditors use audit sampling techniques, which carry the risk of not detecting material misstatements in untested items. With the help of artificial intelligence systems, external auditors can examine an entire population, reducing the risk of overlooking material misstatements to verify the completeness and accuracy of the firm's transactions.
- *Fraud detection capability*. Artificial Intelligence and machine learning (ML) are used to infer fraud in financial statements by enhancing the efficiency of data analysis models and by studying financial statements and recognizing underlying patterns that indicate fraudulent activity. These techniques can effectively detect signs of fraudulent activity. (Ramzan, 2023).

Artificial Intelligence also offers numerous opportunities for the accounting sector. AI allows software to learn through experience and perform tasks. It has become a powerful tool for analyzing and automating the Accounting Function. (Dongre, Pandey, & Gupta, 2021).

3.5 Challenges facing AI technology in the accounting field

Despite its benefits, implementing AI in bookkeeping and financial reporting comes with challenges. Integrating AI with existing frameworks presents a significant obstacle. Many organizations employ legacy systems that necessitate costly and laborious modifications due to their incompatibility with contemporary AI innovations. Furthermore, a notable deficit in staff capabilities exists, and to effectively leverage AI innovations, the World Economic Forum has emphasized the necessity of upskilling bookkeepers and financial professionals.

This encompasses specialized guidance and a more profound understanding of artificial intelligence and data analytics. Information assurance and security also present critical impediments. Robust network security safeguards are essential, given that AI frameworks handle sensitive financial information. Organizations express concern regarding the potential for breaches to impede the adoption of AI innovation and the subsequent economic and reputational risks (Pandey & Rana, 2024).

4 THE EXPLORATORY STUDY

4.1 Methodology and Study Population

This study relied on the descriptive and content analysis method, where data were collected through a questionnaire and analysed using the SPSS program.

The study population consisted of accounting professionals in the Algerian environment, including accounting experts, external auditors, and certified public accountants.

Regarding the sample, it was not predetermined due to the low response rate from professionals, either due to refusal or procrastination. Instead, we aimed to align the number of returned questionnaires with an acceptable percentage. A total of 50 questionnaires were distributed, and Table 1 presents the approved questionnaire statistics.

Table 1. Questionnaire Statistics

Type of questionnaires	Distributed questionnaires	Unreturned questionnaires	Cancelled questionnaires	Analysable questionnaires
Repetition	50	5	5	40
Ratios	100 %	12.5 %	12.5 %	75%

Source: Table created by the researchers based on the questionnaire responses.

The questionnaire consists of two main sections:

- The first section includes demographic data (educational qualification, job title, and work experience).
- The second section includes three axes that will answer the study's hypotheses.

4.2 Measuring the Stability of the Study Tool

Cronbach's alpha coefficient was used to verify the reliability of the study tool (questionnaire), as represented in the following table:

Table 2. Cronbach's alpha stability coefficient results for the three axes

Questionnaire axes	Number of phrases	Cronbach's alpha value
The first axis	8	0.912
The second axis	6	0.899
The third axis	6	0.794
All Axes	**20**	**0.941**

Source: Researchers' elaboration based on SPSS V23 results.

Table 2 represents the Cronbach's alpha reliability coefficient for all the questionnaire axes reached (0.941), which is a very high value and indicates the reliability and stability of the questionnaire.

4.3 Analyzes the Results of the Study

4.3.1 Descriptive analysis of the personal variables of the study sample:

Table 3 highlights the scientific degree of the study sample:

Table 3. Scientific degree of the study sample

Educational qualification	Number	The ratio %
Baccalaureate	10	25
Master	22	55
PhD	8	20
Total	**40**	**100**

Source: Researchers' elaboration based on SPSS V23 results.

Table 3 demonstrates that the greater part of the respondents have a master's and bachelor's degrees, representing 55% and 25% respectively. It indicates that the respondents have an educational level that is useful in relying on their opinions.

Table 4 highlights the professional experience of the study sample:

Table 4. Professional experience of the study sample

Professional experience	Number	The ratio %
Less than 10 years	17	42.5
Between 10 and 20 years	14	35.0
Over 20 years	9	22.5
Total	**40**	**100**

Source: Researchers' elaboration based on SPSS V23 results.

Table 4 illustrates that the respondents representing 42.5% of the total sample have less than 10 years of work experience, which is the largest percentage of the study sample, followed by the 10 to 20 years category representing 35% of the total sample, while more than 20 years of professional experience group was of 22.5%. This explains that there is diversity in the gained professional experience among the respondents.

Table 5 highlights the professional practice of the study sample.

Table 5. Professional practice of the study sample

Professional practice	Number	The ratio %
External auditors	17	42.5
Accounting experts	15	37.5
Certified accountants	8	20
Total	**40**	**100**

Source: Researchers' elaboration based on SPSS V23 results.

Table 5 shows that most of the sample members were external auditors, who accounted for 42.5%, and concerning accounting experts, their percentage was 37.5%, while 20% were in the category of legal accountants.

4.3.2 Presentation and Analysis of Study Results

The results of the *first axis*, regarding the technical qualifications of professionals in the Algerian environment, were compiled as represented in the following table:

Table 6. Sample members' answers related to the first axis

Nº	Phrase	Arithmetic mean	Standard deviation	Rank	Trend
1	Your office uses some artificial intelligence techniques in accounting and auditing.	3.15	1.282	8	Neutral
2	Your office is interested in introducing advanced artificial intelligence software to improve accounting and auditing services.	3.20	1.322	7	Neutral
3	Your office constantly conducts training courses to keep up to date with artificial intelligence technology.	3.29	1.401	5	Neutral
4	Your office provides many experts to develop accounting and auditing information systems into smart systems.	3.32	1.356	4	Neutral
5	Artificial intelligence in your office is compatible with the requirements of the digital infrastructure in the Algerian environment.	3.27	1.283	6	Neutral
6	Artificial Intelligence technology provides the necessary assistance to accountants and external auditors.	3.63	0.982	1	Agree
7	Artificial Intelligence applications accurately provide accountants and external auditors with the necessary information.	3.60	1.007	2	Agree
8	Guided by artificial intelligence in accounting and auditing saves time and reduces effort.	3.43	1.124	3	Agree

Source: Researchers' elaboration based on SPSS V23 results.

We note from Table 6, which represents the opinions of professionals about the first axis, that a general neutral arithmetic mean of 3.36 and standard deviation of 1.219 was recorded, which indicates to some extent the respondents neutral on the accounting and auditing offices in the Algeria possess technical qualifications that allow them to apply artificial intelligence.

Concerning the order of the phrases, the sixth phrase “Artificial Intelligence technology provides the necessary assistance to accountants and external auditors” ranked first with a arithmetic mean of 3.63 and a high level of agreement, followed by the seventh “Artificial Intelligence applications provide accountants and external auditors with the necessary information accurately” which ranked second with a arithmetic mean of 3.60 and a high level of agreement, and the first phrase “Your office use some artificial intelligence techniques in accounting and auditing” ranked last with a arithmetic mean of 3.15. This indicates that accounting and auditing firms favor the use of artificial intelligence due to the benefits that artificial intelligence brings to these professions. To fully adopt and benefit from it, some obstacles must be removed.

The results of the *second axis*, which examined the contribution of artificial intelligence in improving the quality of the accounting and auditing professions, can also be summarized and illustrated in Table 7.

Table 7 presents professionals' opinions on the second axis, showing a high arithmetic mean of 3.61 and a standard deviation of 1.028. These values suggest a general agreement among respondents with the included statements.

Table 7. Sample members' answers related to the second axis

Nº	Phrase	Arithmetic mean	Standard deviation	Rank	Trend
9	Artificial intelligence enhances the professional growth of accountants and external auditors by enabling them to acquire new expertise and skills.	3.93	0.547	1	**Agree**
10	Artificial intelligence-powered accounting and auditing programs help identify various material risks.	3.17	1.523	6	**Neutral**
11	Artificial intelligence contributes to solving complex accounting and auditing issues promptly.	3.73	0.892	2	**Agree**
12	Artificial intelligence efficiently analyzes large financial datasets in a short time.	3.43	1.633	5	**Agree**
13	Artificial intelligence enables the shift from traditional auditing to modern continuous auditing.	3.70	0.493	3	**Agree**
14	Accountants and external auditors perform their work with the skill and care necessary for artificial intelligence use.	3.50	1.086	4	**Agree**

Source: Researchers' elaboration based on SPSS V23 results.

Concerning the order of the phrases, the ninth phrase “Artificial intelligence contributes to the professional development of accountants and external auditors through the acquisition of new expertise and skills” ranked first with an arithmetic mean of 3.93 and a high level of agreement, followed by the eleventh “Artificial intelligence contributes to solving complex accounting and auditing issues in time” which ranked second with an arithmetic mean of 3.73 and a high level of agreement. This explains that all respondents are convinced that AI has the potential to improve the quality of accounting and auditing through automation, which has become a convenient way to perform all their tasks.

And the tenth phrase “Artificial Intelligence-powered accounting and auditing programmes allow for the detection of various material risks” ranked last with a arithmetic mean of 3.17, so this explains the neutrality of the respondents to this phrase, as they recognise that (AI) can detect various intrinsic risks, But the area of professional doubt for the individual remains the fundamental difference with artificial intelligence technology The individual's capacity for professional doubt remains the fundamental difference compared to artificial intelligence technology.

The results of the third axis, which highlighted the most prominent risks related to artificial intelligence in accounting, can be summarized in Table 8.

We note from Table 8, which shows the opinions of professionals about the third axis, that it recorded a high arithmetic mean of 3.45 and a standard deviation of 1.243.

This suggests, to some extent, that participants agree AI in the accounting field entails many risks, such as inadequate protection of digital financial data.

Table 8. Sample members' answers related to the third axis

N°	Phrase	Arithmetic mean	Standard deviation	Rank	Trend
15	Artificial intelligence systems used in accounting and auditing are vulnerable to security and privacy threats.	3.80	1.085	1	**Agree**
16	Artificial intelligence could replace accountants and external auditors.	2.90	1.390	6	**Neutral**
17	The use of artificial intelligence has negative repercussions on the future of the accounting profession.	3.30	1.114	5	**Neutral**
18	The collection and storage of financial data by artificial intelligence leads to ethical violations.	3.63	1.292	2	**Agree**
19	The use of artificial intelligence in accounting and auditing is leading to increased reliance on digital decisions.	3.52	1.499	4	**Agree**
20	Using artificial intelligence in accounting may impact on the decisions of financial data users.	3.56	1.079	3	**Agree**

Source: Researchers' elaboration based on SPSS V23 results.

The fifteenth statement, "AI systems used in accounting and auditing are vulnerable to security and privacy threats," ranked first with an arithmetic mean of 3.80, and a high level of agreement, followed by the eighteenth "The collection and storage of financial data by artificial intelligence leads to ethical violations" which ranked second with an arithmetic mean of 3.63 and a high level of agreement, and the sixteenth phrase "Artificial intelligence could replace accountants and external auditors" ranked last with a arithmetic mean of 2.90.

4.3.3 Distributional Normality Test

To ensure that the data follow a normal distribution, we performed the Kolmogorov-Smirnov test to verify that the data follow a normal distribution, as shown in Table 9.

Table 9. Normal distribution test

All Axes	Kolmogorov-Smirnov Test	
	Statistics	Sig
	0.112	0.161

Source: Researchers' elaboration based on SPSS V23 results.

Table 9 shows that all study axes obtained a Sig value greater than the significance level (0.05). Therefore, it is concluded that the study sample data is subject to normal distribution.

4.4 Testing the Study Hypotheses

We chose a one-sample t-test at a significance level of 0.05, which is the appropriate test for the study hypotheses, so the theoretical t-value was estimated at 2.021.

4.4.1 Testing the First Main Hypothesis

The null hypothesis, H_0 and the alternative hypothesis H_1, were formulated as follows:

H_0: Accounting and auditing offices in Algeria do not have the technical qualifications to enable them to use artificial intelligence.

H_1: Accounting and auditing offices in Algeria have technical qualifications that enable them to use artificial intelligence.

According to Table 10, the alternative hypothesis was rejected. Consequently, the null hypothesis, which states that accounting and auditing offices in Algeria do not have the technical qualifications to enable them to use artificial intelligence, was accepted.

Table 10. T-test results for the first main hypothesis

The Axis	T theoretical	T calculated	Df	Sig
Technical qualifications of professionals in Algeria.	2.021	0.216	39	**0.653**

Source: Researchers' elaboration based on SPSS V23 results.

This acceptance is attributed to the calculated p-value of 0.216, which exceeds the conventional significance level (e.g., α = 0.05), indicating insufficient statistical evidence to reject the null hypothesis. The theoretical t-value of 2.021 from the Student's t-test is relevant for determining the critical region, but is not directly compared to the t-value for the acceptance/rejection decision in this manner.)

4.4.2 Testing the Second Main Hypothesis

The null hypothesis, $H_{0,2}$ and the alternative hypothesis $H_{1,2}$, were formulated as follows:

$H_{0,2}$: Artificial intelligence does not improve the quality of work in the accounting field in Algeria.

$H_{1,2}$: Artificial intelligence does improve the quality of work in the accounting field in Algeria.

Table 11. T-test results for the second main hypothesis

The Axis	T theoretical	T calculated	Df	Sig
Enhancing the quality of accounting and auditing professions using artificial intelligence in Algeria.	2.021	3.669	39	**0.000**

Source: Researchers' elaboration based on SPSS V23 results.

According to Table 11, the null hypothesis was rejected due to the calculated t-statistic of 3.669, which exceeded the critical t-value of 2.021. Therefore, the alternative hypothesis, asserting that artificial intelligence enhances the quality of work within the accounting field in Algeria, is accepted.

4.4.3 Testing the Third Main Hypothesis

The third hypothesis, H_{03} and the alternative hypothesis $H_{1,3}$, were formulated as follows:

$H_{0,3}$: The use of artificial intelligence does not impact on the auditing and accounting professions in Algeria.

$H_{1,3}$: The use of artificial intelligence impacts the auditing and accounting professions in Algeria.

Table 12. T-test results for the third main hypothesis

The Axis	T theoretical	T calculated	Df	Sig
The risks resulting from the use of artificial intelligence in accounting and auditing professions in Algeria.	2.021	2.27	39	**0.001**

Source: Researchers' elaboration based on SPSS V23 results.

According to Table 12, it can be said that the hypothesis stating that the use of artificial intelligence has repercussions on the accounting and auditing professions in Algeria, based on the calculated *t* results that were greater than the theoretical *t*, as follows: 2.27 and 2.021, respectively.

5 CONCLUSIONS

The study concluded that the adoption of artificial intelligence within the accounting field results in enhanced professional performance, consequently yielding work outputs of elevated quality, thereby fostering confidence in their professional contributions, while it was found that there are not enough technical qualifications for the adoption of artificial intelligence by accounting and auditing offices in Algeria due to the absence of a digital structure prepared to apply this technology, The main findings of this study can be summarised as follows:

- Compared to traditional methods, artificial intelligence in accounting helps complete duties and tasks quickly.
- Artificial Intelligence can process and analyse vast amounts of financial data.
- Artificial Intelligence provides accountants and auditors with the opportunity to move away from repetitive tasks and focus on delivering more value-added services.
- Lack of technical qualifications to allow accounting and auditing offices to adopt artificial intelligence technology in the Algerian environment.
- The two professions also face many risks that hinder their application, such as not protecting financial data and ensuring its security.

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