

Challenges Associated with the Adoption of Artificial Intelligence Technologies in the Accounting Profession: The Case of Algeria

Dr. Bouabdellah Abdelouahab

University of Djelfa (Algeria)

Email: a.bouabdellah@univ-djelfa.dz; Orcid: <https://orcid.org/0009-0007-8726-1260>

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Abstract:

This research aims to examine the applications of artificial intelligence (AI) that have a direct impact on accounting practices and to assess their effectiveness in enhancing the professional efficiency of accountants, while also highlighting the key challenges hindering their adoption within the Algerian accounting environment. To achieve these objectives, the descriptive-analytical method was employed, as it is the most suitable for the nature of the study.

The findings revealed that the shift toward digital technologies has become both a strategic option and an urgent necessity across various financial transactions, particularly in accounting activities. This trend has led many major global corporations to rapidly integrate AI solutions into their operations. In this context, Algeria, like other countries, is required to follow these developments and align with the latest advancements in the financial and business world. However, the national legal and accounting frameworks remain insufficiently prepared to meet the requirements of AI integration.

Therefore, the current reality underscores the need to adapt economic and accounting legislation to digital and technological transformations in order to ensure the protection of databases and systems against risks of hacking and cyberattacks on the one hand, and to enhance efficiency and effectiveness on the other.

Ke words: Artificial Intelligence, Accounting, Algeria

Introduction

In recent years, the accounting profession has undergone profound transformations as a result of rapid technological developments, most notably artificial intelligence (AI) technologies, which have become a strategic tool for improving the quality of financial information, facilitating auditing processes, and supporting decision-making. However, the adoption of these technologies in the accounting environment is not without multiple challenges, particularly in developing countries such as Algeria, where the integration of AI raises issues related to the readiness of digital infrastructure, the adaptation of legal and regulatory frameworks, as well as the potential impacts on accountants' professional skills and the labor market in general. In this context, studying the case of Algeria gains special importance, as it reflects a reality that combines the urgent need to keep pace with digital transformations on the one hand, and the institutional and legislative constraints that hinder this path on the other. Accordingly, this article aims to shed light on the main challenges associated with the adoption of AI technologies in the accounting profession, while attempting to explore the means of preparing the national environment to cope with these transformations.

Research Problem

Based on the above, the following question must be raised:

To what extent can artificial intelligence technologies contribute to the development of accounting practice and enhance its efficiency, and what are the main challenges that hinder their adoption in light of the specific characteristics of the Algerian accounting environment?

Sub-questions

- What are the most important AI applications used in accounting practice?
- How can these applications enhance the accuracy of financial information and improve the quality of accounting reports?
- What is the impact of AI technologies on the professional competence of accountants and their role within institutions?

Sub-hypotheses

- AI applications are expected to contribute to the development of accounting practice by increasing the accuracy and speed of data processing.
- The adoption of AI is likely to significantly improve the quality of financial information and accounting reports.
- It is assumed that the use of AI will reshape the role of the accountant, shifting from traditional tasks to more analytical and strategic functions.

Significance of the Study

Artificial intelligence has attracted wide interest from researchers and institutions, especially following the digital revolution triggered by its various technologies, which have become an indispensable element in many transactions, particularly financial ones. Major global companies have rushed to employ and benefit from these technologies, especially in the fields of accounting and auditing. Building on this reality, the purpose of this research is to examine the impact of AI technologies on accounting practitioners, with a focus on highlighting the main challenges that hinder their effective adoption.

Research Objectives

This research aims to achieve a set of scientific and professional objectives, summarized as follows:

- To clarify the basic concepts related to artificial intelligence and the accounting profession.
- To highlight the role played by AI technologies in developing and enhancing accounting practices.
- To review the most relevant professional publications and recommendations on the subject.
- To provide a theoretical analysis of the main challenges and gaps that may hinder the use of modern technologies in the Algerian accounting environment.

Structure of the Study

- **Chapter One:** The conceptual framework of artificial intelligence;
- **Chapter Two:** Artificial intelligence in accounting: technologies, stages, and areas of use;

- **Chapter Three:** Challenges and difficulties associated with the application of AI technologies in the accounting field.

Chapter One: The Conceptual Framework Of Artificial Intelligence

1. Conceptual Framework of Artificial Intelligence

Over the past decades, the technology industry has witnessed rapid development, one of its most prominent outcomes being the employment of artificial intelligence (AI) in various fields. This orientation has been linked to a recently popular saying: “Work smart, not hard.” This expression truly embodies the core objective that AI seeks to achieve—enhancing efficiency and simplifying human effort.

1.2 The Emergence and Development of Artificial Intelligence

Researchers interested in the field of AI differ in identifying its historical beginnings. Some trace its earliest evidence to two years after General Electric (GE) introduced the first computer designed for business purposes. However, the concept was formally associated with John McCarthy in 1956, when the topic of artificial intelligence was presented at a conference held at Dartmouth College. Since then, AI has come to be regarded as a promising technological future for humanity.

This field has witnessed remarkable expansion in recent years, particularly since 2015, thanks to the rapid development of graphics processing units (GPUs), which provided greater capacity for parallel processing with higher efficiency and lower costs. In addition, the availability of nearly unlimited storage and the massive flow of diverse data sources—such as images, financial transactions, and mapping data, among others—has further accelerated its growth (Moussa & Ahmed Habib, 2019, p. 33).

Table (01): The Historical Development Stages of Artificial Intelligence

Historical Stage	Key Features
Early Enthusiasm Phase (First Spring of AI) 1956–1975	Researchers in artificial intelligence developed tools with human-like capabilities in narrow domains such as geometric proofs and simple games. This period is considered the <i>golden age of AI</i> and marked the beginning of erasing the long-standing belief that machines could not achieve such feats.
Big Goals Phase (First Winter of AI) 1976–1980	AI then began moving toward its <i>first winter</i> in the early 1970s, as the pace of progress slowed and AI systems remained far more limited in capability than expected.
Expert Systems Phase (Second Spring of AI) 1981–1987	The <i>second wave</i> emerged in the 1980s with the advent of so-called <i>expert systems</i> —rule-based programs designed to answer questions and solve problems within a restricted field of knowledge. These programs simulated decision-making processes on computers.
Opposition Phase (Second Winter of AI) 1988–1993	However, this prosperity turned into decline. Both the United States and Europe failed to achieve their ambitious objectives, and many AI companies collapsed after 1987.
Third and Lasting Spring of	During this stage, attention shifted toward fragmented

AI 1994–2011	subfields that focused on solving specific problems or precise applications. The traditional model had relied on logic, but renewed interest arose in <i>neural networks</i> and <i>genetic algorithms</i> .
Big Data, Deep Learning, and AI Revolution 2011–Present	The <i>third generation</i> of AI reached a turning point, as researchers benefited from a tremendous surge in scale, diversity, and sources of funding—including leading companies such as Google and Microsoft, which placed AI at the core of their business models.

Source: (Belaid & Belhouas, 2024, p. 1035)

2. The Concept of Artificial Intelligence

Artificial intelligence (AI) is considered one of the most significant achievements of the Fourth Industrial Revolution due to the diversity of its applications across various fields. It is based on the creation of intelligent systems and machines capable of simulating human behavior in thinking and decision-making by adopting approaches similar to human methods of problem-solving, handling hypotheses simultaneously, and achieving high levels of accuracy and speed in performance.

Before addressing the concept of AI, it is worth presenting a simplified definition of intelligence. Intelligence is viewed as a set of mental abilities that an individual employs to face new situations, relying on organized thinking in the process of inquiry, which leads to the production of inferential knowledge (Qasem, 2011, p. 11).

AI is defined as a scientific field that aims to enable computers to perform tasks typically carried out by humans, but with a higher degree of efficiency and accuracy. Mark Fox, however, offered another definition, considering AI as a theory concerned with understanding and simulating the functioning of the human mind (Mahdi Al-Khaffaf & Ahmed Al-Otaibi, 2021, p. 166).

AI is also defined as the ability of machines to perform cognitive functions typically associated with the human mind, such as perception, reasoning, learning, interaction with the environment, problem-solving, and even demonstrating aspects of creativity. At its core, it is seen as a combination of advanced computational techniques that vary in their degree of maturity and development (Gheetha, 2021, p. 110).

In short, AI is a multidisciplinary science and technology drawing on fields such as computer science, psychology, linguistics, mathematics, and engineering. It helps reduce burdens and risks for decision-makers, enabling them to focus on the most important issues and their strategic dimensions.

Based on the definitions provided, the following key characteristics of AI can be identified:

- **Machine Learning:** the ability to improve system performance over time by learning from experience and data.
- **Big Data Processing:** the capacity to handle massive volumes of data and extract useful information.
- **Intelligent Interaction:** the ability to interact intelligently with environments and users.
- **Recognition and Classification:** distinguishing specific patterns and classifying data and information.

- **Creative Thinking:** the ability of intelligent systems to demonstrate new patterns and generate solutions to complex problems.

Benefits of Using AI Technologies in Business

The technology industry has witnessed rapid development in recent decades, and one of the most prominent of these developments is the use of AI across different fields. Recently, we have heard the advice “Work smart, not hard,” which literally reflects the core purpose that AI seeks to achieve (Al-Suheiti, p. 06):

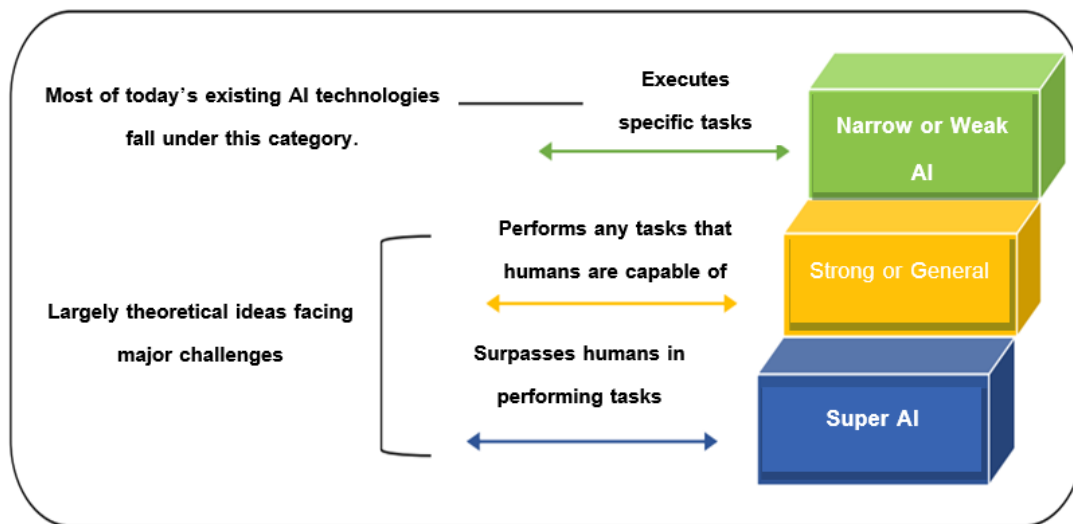
- Accurate and rapid analysis of financial data;
- Improvement of forecasting models and making informed investment decisions;
- Enhancing public financial management and achieving a balance between risks and expected returns;
- Improving financial operations while reducing errors and costs.

Types of Artificial Intelligence and Its Main Techniques

Types of Artificial Intelligence:

The types of artificial intelligence can be summarized in the following figure:

Figure (02): Types of Artificial Intelligence



Source: (Belaid & Belhouas, 2024, p. 1037)

Types of Artificial Intelligence and Its Main Techniques

Types of Artificial Intelligence

From the figure above, we can distinguish three forms of artificial intelligence:

- **Narrow AI or Weak AI**

This type is widely used in many contemporary digital applications. It is characterized by its focus on performing specific tasks with accuracy and efficiency. Compared to humans in terms of execution speed, it can accomplish tasks much faster. It also has a high capacity to process massive amounts of data at great speed, which gives it significant value in the business world and enhances its effectiveness.

- **Strong AI or General AI**

The aim of this approach is to develop an intelligent robotic system capable of thinking and performing a wide variety of tasks. The ultimate goal is to create a robot endowed with mental abilities similar to those of the human mind (Senchea & Coman, 2023, p. 74).

- **Super AI**

Super artificial intelligence represents an advanced level that surpasses human cognitive capabilities. It can perform tasks more efficiently than even specialized human experts. It is distinguished by several essential features, including continuous learning, planning, self-communication, decision-making, and judgment. Although this concept remains experimental, research efforts strive to simulate human abilities through different models—some with limited social interaction, while others exhibit greater ability to predict human emotions and interact with them effectively.

Techniques of Artificial Intelligence

AI techniques represent a set of integrated tools and mechanisms that contribute to building and activating this field, each playing a pivotal role in embodying its capabilities and expanding its areas of use. The following are the key foundational elements of these technologies (Sharif & Boumediene, 2024, p. 58):

- **Machine Learning (ML)**

Machine learning is one of the core branches of AI. It focuses on developing applications capable of learning from data and gradually improving performance over time without the need for direct programming to execute tasks.

- **Deep Learning (DL)**

This is a model of AI based on the use of multi-layered computational networks to process data. It enables systems to learn complex representations and large data structures. This approach relies on advanced algorithms that allow machines to interact with these representations and effectively extract knowledge from them.

- **Natural Language Processing (NLP)**

One of the most important AI techniques, NLP enables computers to process, understand, and use human language. Its applications are evident in voice recognition technologies, intelligent software capable of analyzing texts, and systems that interact with users in natural language.

- **Robotic Process Automation (RPA)**

RPA is a modern technology that enables individuals and organizations to create software robots capable of imitating human activities within digital systems. These robots execute repetitive processes automatically, which helps increase efficiency, reduce errors, and accelerate task completion.

RPA robots operate through the user interface to capture data and interact with applications in the same way as humans. They interpret information, trigger appropriate responses, and interact with different digital systems to accomplish a wide range of repetitive tasks. This technology is highly accurate, avoiding the errors that humans may commit, and its operating cost is far lower compared to hiring employees to perform the same tasks.

Other Complementary Technologies

In addition to the core components of AI mentioned earlier, other technologies have emerged within the tools of the Fourth Industrial Revolution, working in an integrated and overlapping

manner with AI to enhance its efficiency and broaden its scope of applications. Among the most notable are:

- Blockchain,
- Big Data,
- Machine Learning,
- Cloud Computing,
- Quantum Statistics,
- Robotics.

3. The Contribution of Artificial Intelligence Technologies to Enhancing the Accounting Profession

Artificial intelligence has begun to perform many tasks that humans traditionally carried out, in fields such as translation, manufacturing, customer service, as well as finance and business. The accounting and auditing profession has not been isolated from these developments; rather, it has recently faced a series of challenges that imposed the necessity of adapting to the wave of change and keeping pace with the accelerating technological transformation.

Accordingly, many companies and accounting sectors have turned to the use of AI tools and techniques, leading to significant changes in working methods and approaches across all sectors.

3.1 Artificial Intelligence in the Accounting Profession

The accounting profession has evolved alongside the development of business, shifting from traditional paper-based methods to reliance on computers and software, and later to complex programs capable of conducting operations and providing more precise data analysis. The move toward AI has opened the door to major transformations in data processing, obliging accounting practitioners to adapt their skills to modern technologies.

Definition of the Accounting Profession

The accounting profession is defined as the cornerstone of companies, and it is not a newly established profession. Today, it both influences and is influenced by all changes and developments in the business environment—whether political, social, or technological. Without it, no activity can continue, as it constitutes an open system aimed at collecting and analyzing a company's financial information. This task is carried out by accountants, whether internal or external, whose role is to prepare various financial statements and reports based on the collected data.

The accounting profession is also defined as a discipline that encompasses several important and challenging functions, such as preparing and revising different budgets, providing estimates of the impact of future cash flows, assisting in risk management and the optimal investment of resources, reviewing all related logistical services, and ensuring access to reliable and credible information about a company's status for use by multiple stakeholders (Belaid & Belhouas, 2024, p. 1040).

The Importance and Role of the Accounting Profession

The importance of the accounting profession lies in providing comprehensive, high-quality accounting information. Such information has a fundamental impact on economic development.

The quality of accounting information determines the level of transparency in the sound governance of companies. High-quality financial reports are the key to improving transparency, facilitating the mobilization of domestic and international investments, and creating a healthy investment environment. This, in turn, enhances investor confidence and thereby strengthens financial stability.

Chapter Two: Artificial Intelligence In Accounting – Techniques, Stages, And Areas Of Use

Artificial intelligence has been integrated into the field of accounting for more than 25 years, particularly in financial reporting and auditing. Today, AI is used in all accounting and auditing processes, which has led to a reduced need for human accountants within organizations, and perhaps even the potential elimination of their role in the future.

Thus, AI in accounting can be defined as the ability of computers and their programs to perform numerous accounting tasks, accomplish repetitive manual functions, and reduce the rate of human error. This enhances the accuracy and speed of analyzing accounting reports and information compared to traditional accounting methods.

Key Characteristics of AI in Accounting:

- The ability to handle difficult and complex processes, even when not all necessary information is available.
- The ability to process and analyze both numerical and non-numerical data.
- Supporting human expertise and providing multiple alternatives to the system, thereby assisting experts in decision-making.
- Applying a problem-solving method similar to that of the human mind.
- Autonomy and predictive capability.
- Monitoring and control abilities.

1. Motivations for Adopting AI in Accounting

(Sokhraoui & Alimi, 2023, p. 7)

In this regard, Deloitte conducted interviews with more than 1,200 government entities worldwide and identified the four most important drivers of transformation toward adopting AI technologies in the financial and accounting sector:

• Costs and Budget Pressures

Most oil-rich countries are resorting to reducing their government spending on assets and operations as a response to the significant decline in revenues. Therefore, cost-saving measures and the implementation of efficient government operations are among the primary drivers of this transformation.

• Customer and Citizen Demands

Social media has gained great popularity among the public, providing them with a new communication channel and enabling opportunities for collaboration between institutions and citizens. Governments soon took advantage of this to gauge citizens' opinions, who in turn began demanding higher levels of service.

• Government Directives

Governments rely on a top-down planning approach to make decisions, which helps accelerate the pace of implementing AI programs.

• Rapid Decision-Making

AI allows government bodies to activate national transformation plans quickly and effectively. Accordingly, reliance on AI has become a strategic approach to leading organizations, after previously being viewed merely as an IT tool, due to the extensive benefits it provides.

2. Professional Publications on Artificial Intelligence in Accounting

(Al-Qadi, 2023, p. 1014)

- A **joint report** by the Institute of Management Accountants (IMA) and the Association of Chartered Certified Accountants (ACCA) concluded that the ten most important technologies that will reshape the accounting profession are: big data, cloud and mobile computing, artificial intelligence and robotics, cybersecurity and electronic payment systems, virtual reality, digital service delivery, and social networking. The report also recommended that accountants eliminate their digital illiteracy and enhance their technological skills.
- The **Institute of Chartered Accountants in England and Wales (ICAEW)** indicated that digital transformation technologies are essentially accounting technologies concerned with asset ownership transfer, preserving financial information, and enhancing transparency.
- The **ICAEW** further stated that artificial intelligence will radically change the accounting and auditing profession. A report published by the Institute stressed that the profession must accept that machines will take over activities related to data recording and processing. It also emphasized that AI systems are inherently characterized by superior capabilities that evolve rapidly and yield more accurate results.
- The **American Institute of Certified Public Accountants (AICPA)** confirmed that AI technologies have successfully eliminated many traditional accounting methods and much of the manual work in preparing financial reports, while building more secure, transparent, and credible frameworks for asset recording.
- The **International Federation of Accountants (IFAC)** pointed out that AI technologies, as part of digital transformation, can offer many benefits in accounting, including: cost reduction, focus on value-added activities, minimizing fraud, eliminating the need for reconciliations, reducing errors, and shortening audit time.

3. Influential Applications of AI in Accounting and Key Implementation Steps

Over the years, accounting has witnessed significant developments: from paper-and-pencil work, to computers, then to software capable of reducing time and minimizing errors. Today, AI is reshaping the future of the profession. Below are the key steps for implementing AI technologies in accounting practice.

3.1 Steps for Implementing AI Technologies in Accounting

In this regard, Amazon Web Services (AWS), a leader in cloud computing, provided a checklist for building strategies that allow freedom of innovation and the development of new work methods to achieve successful digital transformation. These strategies are based on (Sokhraoui & Alimi, 2023, p. 8):

- **Vision:** Adopting AI technologies requires a clear vision as a starting point for transformation. It involves rethinking the approach and how new technologies can help achieve it. In this context, Algeria has since 2013 issued several laws to legally support this transformation, such as the E-commerce Law and the law on the protection of individuals regarding the automated processing of personal data.

- **Adopting a Culture of Change:** This means transforming the organizational structure from traditional hierarchy into smaller, empowered teams capable of decision-making. Collaboration between development staff, technology teams, and strategic units can thus be translated into improved services. Therefore, integrating AI technologies into corporate culture and the work environment at the initial stage of transformation is a positive step toward the success of digital transformation.
- **Changing the Cost Model:** Smaller budgets can drive innovation, as teams are encouraged to take creative steps to develop new processes that help address challenges.
- **Starting Operations in the Cloud:** Some institutions and companies prefer transferring licenses and individual projects to the cloud, while others choose to start operations directly in the cloud.
- **Tracking Progress:** When the adoption of AI applications in financial and business activities is carried out carefully and in line with essential steps, it contributes to enhancing and increasing company profits. Specific metrics have been developed to track and measure progress achieved.

Chapter Three: Challenges and Difficulties Associated with Applying AI Technologies in Accounting

AI systems have become capable of performing many accounting tasks with high efficiency, such as bank reconciliations, auditing procedures, tax collection, as well as predicting and assessing financial risks. This offers accounting practitioners wide opportunities to leverage these technologies to improve the quality of their work and accelerate its performance.

1. Automation of Routine Accounting Tasks

One of the most important impacts of AI on the accounting profession is the automation of routine accounting tasks, including data entry, processing of basic numbers, and even certain aspects of financial reporting. This automation has enhanced efficiency and accuracy at a rapid pace, reducing the need for human input and allowing accountants to focus on other tasks.

2. Providing Predictive Analytical Insights

The ability of AI to handle large amounts of data enables accountants to gain deeper insights into financial information. Advanced AI algorithms can detect patterns in financial data and provide predictive insights on cash flow trends, budget variances, and potential financial risks.

3. Automation and Analysis of Tax Processes

AI systems analyze various financial statements to identify tax deductions, saving time and helping companies reduce tax liabilities. They also detect errors and fraudulent activities in tax returns to ensure compliance with regulations and achieve maximum tax savings.

4. Fraudulent Transaction Detection

AI-powered fraud detection systems are capable of analyzing vast amounts of records and financial data to identify irregular patterns and unusual cases that may indicate fraudulent activity.

3.3 Difficulties of Applying AI in the Accounting Profession

The accounting sector has become subject to the ongoing digital transformation experienced worldwide. With the help of AI technologies, computers can automate all routine accounting operations, analyze massive volumes of data, and ensure accuracy and efficiency. However, this

is not an easy process, as several challenges hinder its smooth implementation. The most significant difficulties include:

- **High Cost of Equipment:**

AI tools and technologies require large-scale hardware and computer systems to process massive amounts of data and build efficient AI systems. Acquiring and financing such resources poses a challenge, especially for small and emerging enterprises. Parallel processing systems and cloud computing have made this somewhat possible, but the financial burden remains considerable.

- **Reliability:**

Few organizations have been willing to invest heavily in AI-based products, and there is still a shortage of professionals skilled in autonomous AI technologies. Consequently, such self-operating systems are not easily accepted, as AI is often regarded as a "black box," raising doubts about whether its outcomes are reliable or ideal.

- **Single-Path Task Design:**

Generally, AI systems are designed to perform a specific task based on inputs, unlike the human brain, which can choose the best outcome for a given task. This means that when designing AI systems, care must be taken to ensure that proposed solutions do not create problems in other areas.

- **Data Security:**

In accounting, vast amounts of data are used, some of which may be sensitive or confidential. If the platform on which AI operates does not clearly define data privacy and usage, there is a risk of breaches. Thus, implementing AI in accounting raises significant concerns regarding data security.

- **Ambiguity of Outputs:**

There may be inconsistencies in how certain inputs are processed, requiring human intervention. It remains difficult to develop AI systems that can handle such situations and generate outputs universally agreed upon.

Challenges of Implementing Smart Accounting Systems in Algeria

The Algerian experience in the digital field is still at its early stages, as digitization carries great importance. It is not merely a transition from a slow, routine system to a modern, technology-based one, nor is it limited to the availability of advanced equipment and devices. Nevertheless, Algeria has shown readiness for years to firmly combat cyber and information crimes.

Below are some of the challenges facing the implementation of smart systems in the accounting and financial field:

- **Policies and Procedures for Documenting Accounting Operations**

This involves separating systems—for example, keeping the accounting system of goods traded through a company's website independent, while temporarily linking it to the main company system at the end of the day. The purpose is to better control operations and prevent potential problems from reaching the company's main system.

- **Recognition of Intangible Assets in Digital Companies**

Under current circumstances, companies increasingly need to invest in intangible assets. As a result, financial statements are becoming less capable of reflecting the true current and future financial position of companies. This highlights the urgent need to revise the traditional accounting model, as it fails to fully express financial standing at fair value.

- **Effectiveness of Financial Data for Digital Companies**

At present, most digital companies face a significant gap between book value and market value due to their inability to recognize intangible assets. This directly affects the reliability of their financial statements.

- **Traditional Financial Performance Indicators**

Key performance indicators (KPIs) are typically important measures of profit, revenue, expenses, or other financial results, focusing mainly on relationships derived from accounting data. However, since financial reports have become less useful for capital market decisions, traditional financial performance indicators are no longer effective in measuring the success of digital businesses.

- **Limiting the Creative Capacity of Accountants**

The adoption of AI systems in accounting may lead to a concentration of expertise and knowledge among a small number of accountants and specialists, thereby limiting opportunities for training a new generation of professionals. Since these systems replace humans in many accounting tasks that require advanced skills, opportunities to acquire practical experience necessary for developing future competencies are weakened.

- **Reducing Constraints on Accounting and Auditing Standards**

The use of AI applications in accounting will inevitably require reconsideration of many accounting standards, particularly those that are difficult to implement, require highly skilled technical staff, or demand significant effort, time, and cost.

- **Changing the Fee Structure of Accounting Services**

The application of smart accounting systems is expected to increase the cost of accounting services, due to the financial investments required to develop or acquire such applications on the one hand, and the concentration and monopolization of the profession within a limited number of accounting firms on the other.

Conclusion

This study shows that artificial intelligence technologies have brought about fundamental transformations in the accounting and auditing profession. They have contributed to the introduction of new models of digital accounting, which in turn enhanced the efficiency and effectiveness of accountants and auditors. These technologies have had a significant impact on improving the quality and speed of processing accounting information. However, their use is not without challenges, including high costs, requirements for digital infrastructure, and concerns related to data security and the excessive reliance on intelligent systems.

Key Findings

- The rapid development of information systems has intensified competition among institutions to keep up with innovation.
- AI systems have demonstrated growing capabilities in executing numerous accounting tasks.
- These technologies have become an effective tool for detecting fraudulent activities and suspicious transactions, reviewing spending reports, and identifying financial irregularities.
- They have contributed to reducing the time and effort required for data entry and processing compared to traditional methods.

- The financial and technical costs of integrating these systems into accounting work remain high.
- Persistent doubts and distrust exist regarding the security of financial information when relying on digital solutions.

Recommendations

- The necessity of adapting economic and accounting laws and regulations to the requirements of digital transformation, ensuring database protection and strengthening cybersecurity.
- Encouraging accountants to develop their technical skills through specialized training programs, enabling them to keep pace with advancements in the field.
- Introducing new accounting specializations that consider automation requirements, transforming the accountant's role from merely performing routine operations into that of a financial and strategic advisor providing value-added services to clients.

References

Arabic References

1. Zohair Sharif & Mohamed Rachid Boumediene. (2024). Artificial Intelligence in Accounting and Auditing for Risk Management and Internal Control Effectiveness. *Al-Miyadin Economic Journal*, Vol. 07, No. 01, pp. 52–76.
2. Souad Harb Qasem. (2011). The Impact of Strategic Intelligence on Decision-Making. Master's Thesis, Gaza.
3. A. Moussa & B. Ahmed Habib. (2019). Artificial Intelligence: A Revolution in Modern Technologies. Cairo: Arab Group for Training and Publishing.
4. Karim Belaid & Karima Belhouas. (2024). Key AI Applications Used in the Accounting Profession. *Tabna Journal for Scientific and Academic Studies*, Vol. 074, No. 1, pp. 1031–1052.
5. Karim Mohamed Hafez Al-Qadi. (2023). The Impact of AI Systems on the Transparency of Reports. *Scientific Journal for Financial and Commercial Studies and Research*, Vol. 4, No. 2, Part 2, pp. 1008–1046.
6. Kawthar Sokhraoui & Hassiba Alimi. (2023). The Legal Protection of AI Applications in Accounting and Financial Reporting Systems. *International Conference (Nov. 29–30): Artificial Intelligence and Its Applications in Accounting and Auditing* (pp. 2–17). Annaba: University of Badji Mokhtar.
7. Maha Mahdi Al-Khaffaf & Ghassan Ahmed Al-Otaibi. (2021). *Decision Support Systems and Intelligent Systems*. Jordan: Dar Hamid Publishing, 1st Edition.
8. Hani Faheem Al-Suheiti. *Artificial Intelligence: Its Concept and Importance*. Dubai: Department of Finance.

Foreign References

1. Gheetha, A. (2021). Study on Artificial Intelligence in Banking and Financial Services. *International Journal of Creative Research Thought*, Vol. 9, Issue 9, pp. 110–114.
2. Senchea, A., & Coman, D. M. (2023). From Big Data to Artificial Intelligence: The Future for the Auditing Profession. *Hyperion Economic Journal*, No. 01, pp. 73–82.