



The Impact of the Application of Artificial Intelligence Technologies on the Development of the Accounting Profession

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Abstract: The research aims to measure the impact of the application of artificial intelligence technologies in its dimensions on the development of the accounting profession by analyzing the extent of the effects of these technologies on the quality and efficiency of accounting operations, and the descriptive-analytical method was relied on, where a questionnaire form (35) was distributed to a sample of accountants, auditors, managers, and heads of departments in the departments of accounting and auditing at the University of Babylon, and the statistical program (SPSS V.27) was used.) and appropriate statistical methods to test research hypotheses, and the results of the research showed that there is a significant correlation between artificial intelligence techniques and the accounting profession.

Keywords: Artificial Intelligence, Machine Learning, Deep Learning, Expert Systems, Robotic Process Automation, Accounting Profession.



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Introduction: Artificial intelligence is an integration between man and machine, as it simulates human consciousness and ways of thinking through computers. A state of cooperation exists between humans and computers, and the world has currently witnessed great progress in the field of technology and artificial intelligence, which in turn has greatly affected various fields and fields, most notably the accounting profession. This development helps in reshaping traditional accounting processes, enhancing speed and efficiency in processing financial statements, reducing human errors, and achieving higher accuracy in financial reporting, and today artificial intelligence has become a powerful tool for analyzing large amounts of information and data in real time, which enables accountants to predict financial trends, relieve them of manual work, detect unusual patterns, and improve strategic decision-making mechanisms. Many routine tasks save the time and effort needed to focus on analytical and advisory aspects, and with this advancement, it has become necessary to study the effects of AI applications on the accounting profession to determine the benefits provided by these technologies.

First Topic / Previous Studies and Scientific Research Methodology

First: Previous Studies

1-).Hussin etal study (2024: The impact of Artificial intelligence on the Accounting Profession.

This study dealt with testing the impact of artificial intelligence on the accounting profession by reviewing the literature and analyzing previous relevant studies to know the impact of artificial intelligence technologies on the profession on the one hand and the roles and responsibilities of accountants on the other hand, the study reached several results, including: artificial intelligence

contributes significantly to increasing the effectiveness of accounting tasks and also contributes to the development of strategic visions and predictability, artificial intelligence helps in scalability in activity and saving effort and costs, it also helps in The study also showed that the integration of artificial intelligence into the work of accountants can enhance their professional abilities and improve performance, as well as help in data analysis, automation of routine work and accounting tasks, and provide relevant data to make the right decisions, leading to increased efficiency and reducing the risk of human errors.

- 2- Najat Ben Turkia's study (2024), entitled: The Integration of Artificial Intelligence Technologies in Accounting and its Impact on the Future of the Accounting Profession in Algeria - An Exploratory Study.

This study aimed to identify the theoretical framework of artificial intelligence and its use in the accounting aspect and the impact of the introduction of artificial intelligence technologies on the accounting profession in Algeria by studying the opinions of a sample of professionals and accountants, and the study concluded that the adoption of artificial intelligence technologies in the accounting field has a great role in improving accounting work procedures and reducing costs, however, it represents a great challenge for accountants and professionals from several aspects, most notably the financial and security challenges related to the use of artificial intelligence. The challenges it poses to professionals and accountants to keep pace with developments in this field and dispel traditional ways of working, and this study also concluded that artificial intelligence will lead to a change in the traditional roles of accountants, but it cannot be a complete substitute for them.

- 3- A study by Kawthar Sakhraoui and Hassiba Elmi (2023), entitled: Artificial Intelligence and its Applications in Accounting and Auditing - Algeria

This study aimed to find out the appropriateness of laws in Algeria for the application of artificial intelligence in accounting, and the descriptive approach was used to define the problem of the study by defining the theoretical framework of artificial intelligence and its effective technologies in accounting and financial reporting. The results showed the need for legal and ethical framing of artificial intelligence systems in all sectors in general, and in the financial and accounting sector in particular, to ensure data integrity and financial information security from hacking and hacking, in addition to the qualitative leap that it will make towards achieving an increase in profits, improving services, and smoothing decision-making.

- 4- A study by Belaid Karim and Ben Hawass Karima (2024), entitled: The most important applications of artificial intelligence used in the accounting and auditing professions - a case study of the reality of the four major companies

The study aimed to shed light on the importance of using artificial intelligence as one of the modern digital technologies that improve and enhance the accounting and auditing professions, by clarifying the most important effective smart platforms and applications adopted by the world's four largest accounting and auditing firms to make the two professions more adaptable to the changes and technological developments taking place in the complex business environment. The study reached several conclusions, perhaps the most important of which is that the adoption of artificial intelligence by the Big Four companies has led to the automation of all tasks, as well as enabling them to provide high-quality services to their customers, and also enable them to improve the quality of financial statements, ensuring their reliability, and increasing their accuracy.

Second: Scientific Research Methodology

Importance of the research: The research acquires great importance as it is one of the important topics in the accounting field, as we are dealing with an important accounting issue, which is the impact of the role that artificial intelligence technologies play in the development of the accounting profession, in addition to the research acquires importance in keeping pace with modern developments, as it contributes to expanding and deepening the knowledge space of smart

technological applications in the development of the accounting profession by providing perceptions of the benefits of artificial intelligence applications and its contribution to finding solutions to various problems facing Accountants.

Research Problem: Today's world is witnessing development in the field of technologies and technology, including artificial intelligence and its applications, which is defined as the human mind that mimics the human mind, contributing to entering the fields of business and other fields to improve processes, increase efficiency, and reduce errors, including accounting. Based on the above, the research problem can be formulated in the following main question: What is the impact of artificial intelligence technologies on the development of the accounting profession?

A- Does machine learning technology, as one of the artificial intelligence technologies, affect the development of the accounting profession?

B- Does deep learning technology, as one of the artificial intelligence technologies, affect the development of the accounting profession?

C- Does expert systems technology, as one of the artificial intelligence technologies, affect the development of the accounting profession?

E- Does robotic process automation technology, as one of the artificial intelligence technologies, affect the development of the accounting profession?

Research Hypothesis: Main Hypothesis: Artificial Intelligence Technologies Positively Affect the Development of the Accounting Profession.

The main hypothesis can be used to formulate the following sub-hypotheses:

A. Machine learning technology, as one of the artificial intelligence technologies, has a positive impact on the development of the accounting profession.

B- Deep learning technology, as one of the artificial intelligence technologies, has a positive impact on the development of the accounting profession.

C- Expert systems technology, as one of the artificial intelligence technologies, has a positive impact on the development of the accounting profession.

D. Robotic process automation technology, as one of the artificial intelligence technologies, has a positive impact on the development of the accounting profession.

Research Objectives: The research aims to identify the following:

1- Review the conceptual framework of artificial intelligence and its technologies.

2- Measuring the impact of the use of artificial intelligence technologies in its dimensions (machine learning, deep learning, expert systems, robotic process automation) on the development of the accounting profession.

Research Sample: A sample of managers, heads of departments, and employees in the Accounts and Auditing Departments at the University of Babylon.

Second Topic / Theoretical Aspect

First: Artificial Intelligence:

The history and origin of artificial intelligence: The beginnings of artificial intelligence were in the 1950s when Alan Torge raised an experiment known as the Torge test, in which he expressed his questions about whether a machine can perform actions and behaviors that indicate the existence of real intelligence and consciousness of its own, i.e. the ability to show it to human intelligence, and also its first beginnings were with the Dartmouth conference in 1956 and its appearance as a term by McCarthy In 1980, the American scientist David Remelhart developed the concept of neural networks, one of the most important artificial intelligence technologies developed, followed by the emergence of practical applications of artificial intelligence such as

machine translation programs and industry control systems. (Masouda & Al-Bashir, 2023: 450). In the early nineties and the beginning of the twenty-first century, artificial intelligence achieved a qualitative leap from its technologies and the emergence of modern technologies that contributed to the technological revolution on a larger scale, including deep learning, which is characterized by capabilities that exceed human capabilities, and the great powers of modern computing, in addition to increasing the focus on specific solutions and creating new relationships. (Abdulmalik, 2021: 16).

The concept of artificial intelligence: It is a comprehensive term for a series of advanced technologies that the world has witnessed, and for this reason there is no unified definition of it, and the term artificial intelligence is defined as a branch of computer science that is concerned with the study and formation of computer systems that show some form of intelligence, and these systems have the ability to draw useful conclusions about the problem at hand, as these technologies are able to understand natural languages or understand living perception (migration, It is also defined as a branch of the computer that deals with the simulation of intelligent behavior in computers and the ability of a machine to mimic human behavior (Sabri, 2021: 273), and (Hasan) believes that artificial intelligence is the ability of a system to accurately understand external data, learn from it, and apply what it has learned to achieve specific goals and tasks through flexible adaptation (Hasan, 2022 :433) .

Types of Artificial Intelligence: Artificial intelligence is divided into:

- 1- Narrow or weak artificial intelligence: This type of artificial intelligence is considered the easiest type of artificial intelligence, as it can only work or perform its tasks and functions within its environment, i.e., it works within a limited framework where it is programmed to perform these specific tasks (Abu Zeina, 2022: 11).
- 2- Strong or General Artificial Intelligence: This type of artificial intelligence is characterized by the ability to collect, analyze, and interpret information and can also think, complete, or accomplish tasks that are characterized by complexity without human intervention and that qualify it to plan and make independent and autonomous decisions.(Takwasht, 2023 : 466).
- 3- Super Artificial Intelligence: This type is characterized by the superiority of robots at the level of human intelligence and they can think like or above a human as a result of the superior intellectual efficiency capabilities of computers, which are models under experience and can also interact socially and predict the feelings of others, which is expected to happen in 2099 (Madahi, 2022: 426).

Characteristics of Artificial Intelligence: Artificial intelligence is characterized by several characteristics, perhaps the most prominent of which are:

- 1- Artificial intelligence technologies have the potential to teach, where the education process is automated and self-contained without being subject to monitoring, supervision, relying on previous experiences, and bending them according to contemporary data that aim at rapid response through trial and error (Osmanieh, 2019: 11).
- 2- Artificial intelligence contributes to dealing with ambiguous and intractable situations that require finding solutions to them as an applied science that seeks to provide solutions to problems through machines.(Bassiouni, 1998 : 11).
- 3- The ability to provide information to support administrative decisions, the ability to think and live perception, and he can process the huge amount of information and data that is presented to him, as well as he can observe and analyze similar patterns in the data more than the human mind, which provides this technology for humans in terms of reducing time and effort (Al-Najjar, 2010: 169).

The importance of artificial intelligence: There is great importance for artificial intelligence, including:

- 1- Artificial intelligence is of great importance in today's time, as it contributes to protecting the accumulated cognitive abilities of humans by transferring them to artificial intelligence machines to preserve this knowledge and experiences gained from one generation to another without losing them over time (Amirhom, 2022: 275)
- 2- Smart systems contribute to the areas in which decisions are made, as these systems enjoy independence, accuracy, and objectivity, and therefore their decisions are far from error, bias, racism, or even external or personal interventions (Salem and Babali, 2023: 39).
- 3- Artificial intelligence is of great importance in sensitive fields such as disease diagnosis, health care, education, translation, legal and security fields, and all areas of life, and facilitating life for people with special needs, commercial uses, and the business field as a whole, as well as helping to provide products that were not previously available such as cars and remotely piloted drones (Saud, 2023: 12).
- 4- These machines contribute to their simulation of humans, as well as human language can be used in dealing with these machines instead of programming language, and this is what makes machines accessible to all segments of society (Mansour, 2021: 27).

Artificial Intelligence Technologies: There is a wide range of artificial intelligence technologies, including the following:

- 1- Machine Learning: It is one of the fields of computer science that studies the learning of computer algorithms that uses statistics to identify patterns in a huge amount of data and make accurate predictions of unknown future events, as machine learning has been used in many fields such as health, education, biology, and others (Dogan & Birant, 2021: 1).
- 2- Deep Learning: It is a branch of machine learning that relies on neural networks to simulate the way human thinking works in data processing and decision-making, as accountants can manage large amounts of data to enhance financial processes (Abed, 2023: 7).
- 3- Expert Systems: It is knowledge-based systems and it has been one of the areas of research in artificial intelligence and can be defined as knowledge-intensive programs that can perform some tasks that usually require human expertise, and expert systems are used to solve problems in certain fields, and each step of thinking for a specific problem is determined by a human expert professionally, also these systems are a field in which artificial intelligence stimulates human behavior, judgment, and ability to acquire relevant knowledge from its knowledge base He interprets it according to the user's problem (Hamdi, 2023: 52).
- 4- Genetic algorithms: They are precise instructions in which there are no errors that tell computers exactly what to do, and the design of algorithms is difficult, time-consuming, and often illogical, and genetic algorithmic systems have been developed to design and propose solutions to problems that deal with several candidate and influential variables, and genetic algorithms are used in the field of financial and banking business in investment applications, as well as used to solve problems of logistical operations and control the movement of materials (Abu Zeina, 2022: 13).
- 5- Neural networks: They are so named because they are inspired by the human nervous system, as they can absorb a huge amount of information, process it smartly, and provide quick reports, which makes them highly efficient in interpreting and analyzing data, as well as the ability to provide solutions and find appropriate alternatives (Ahmed, 2022: 32).
- 6- Fuzzy logic: It is also called ambiguous, confused or fuzzy logic, and it is one of the forms used in expert systems and artificial intelligence applications, where it performs the process of guessing without a mathematical model that shows how the outputs depend on the inputs, it was introduced by Lotfizadeh in 1965 and he worked on developing these systems to process data and address the most complex and ambiguous problems to obtain information that helps decision users to make (optimal) decisions (Al-Masoudi, 2023: 31).

- 7- Robotic Process Automation: It is programs that run other application programs in the same way that people perform their daily work, that is, it mimics human interaction and performs daily repetitive tasks instead of humans, automatically and in the same way as humans, and it can be used to automate predefined business processes, and robotic process automation is an example of processes in which there are many interactions and integration with various other application programs such as preparing audit data, organizing files, and integration. Data from multiple files and performance of basic audit tests, such as Exel (Zemankova, 2019:151).

Second: The Accounting Profession

The concept of accounting: Accounting has evolved over the years, just like other professions such as medicine and law, as these professions have changed continuously with the change of society, as humans throughout history have kept records of their business activities, and some of these records were clay paintings that indicate the payment of wages in the time of the Babylonians around 3600 years BC, as well as accounting was found in the Egyptians, Chinese, Greeks, and Romans, as well as some of the first English accounting records, which were compiled by William the Conqueror in the eleventh century. Known Accounting is defined by the American Accounting Association (AAA, 1966) as the process of diagnosing, measuring, and communicating economic (financial) information in a way that enables the relevant parties to judge the financial affairs of an entity and make appropriate decisions thereon. The American Institute of Accountants (AICPA, 1970) has also defined it as a service activity whose function is to provide information of a financial nature mainly for a particular entity and which is intended to be useful to the stakeholders in making rational decisions. Dahmash et al . 2009: 4-5

Stages of the development of the accounting profession: The historical development of accounting can be addressed through three stages (Sayed Darwish, 2010: 19).

- 1- The first stage (the Middle Ages and the pre-Industrial Revolution): The dominant form of business enterprises was individual projects and companies of people, and therefore, accounting in this stage was a tool to serve entrepreneurs only.
- 2- The second stage (early twentieth century until before this century): where the establishment of the Industrial Revolution resulted in developments in the form of business establishments, so joint stock companies emerged, which are characterized by the separation of ownership from management, and the production process became complicated, and competition between companies increased, which led to difficulty and complexity in administrative processes, so accounting became a means of serving the management along with the project owners.
- 3- The third stage (in the middle of the twentieth century until now): This stage was characterized by an increase in the size of projects, in addition to an increase in the state's intervention in economic activity and an increase in the intensity of competitions between projects, which led to the need for accounting information to serve all segments of society, and this led to the development of accounting, and new branches of it appeared, such as social accounting, environmental accounting, and others, as well as the decisive development in the world of accounting is always linked to what is known as the double entry, which historians associate its invention with the name of the Italian Lucabsio who lived In the fifteenth century.

Users of Accounting Information: There is a group of users of accounting information that can be divided into: (Al-Freijat, 2011: 21)

1. Internal Users: They are the owners of the ownership of any facility, whether it is a country or individuals, through which to identify the results of the activities of the establishment or the managers who carry out the process of planning, control, and organization, and this type includes managers such as marketing managers, production supervisors, and others.

2. External Users: Investors who invest capital, where they use accounting information to make decisions about whether to hold or sell their investments in the entities, and to counter the risks of their investments.

Branches of Accounting: Among the most important branches of accounting are the following (Al-Nafie & Al-Dulaimi, 2018: 10-11)

1. Financial Accounting: Financial accounting is concerned with the registration and classification of operations, the classification of accounts arising from them during a certain financial period, the preparation of final accounts and financial reports of the results of operations during that period, and a statement of financial position.
2. Management Accounting: It is concerned with focusing on the results of the establishment's activity in the past and its relevance to the future by developing or modifying the data extracted from financial accounting records in accordance with the requirements of rationalizing administrative decisions.
3. Cost Accounting: It is concerned with providing a high-quality product at a lower cost that suits the needs of the market and the consumer.
4. Government Accounting: Government accounting is concerned with measuring the results of the operations of government units such as ministries and units whose accounts are linked to the State Treasury.
5. Tax Accounting: It is concerned with calculating taxable income in accordance with Iraqi law, which contributes to achieving revenue for the state.
6. Auditing: Investigates the correctness of the procedures and data in the accounting records in the financial statements and reports during the financial period and works to address and correct errors in the financial position.
7. International Accounting: International Accounting is concerned with the application of generally accepted accounting principles, methods, and rules, and contributes to determining the exchange rates from one country to another through the change in foreign currency transactions.

Accounting Objectives: Accounting aims to provide a set of goals, perhaps the most prominent of which are: (Dahmash et al., 2009, 15-16)

- 1- Providing financial information about the assets owned by the project and the liabilities entailed by it, i.e., a statement of the financial position of the establishment or economic unit on a particular date.
- 2- It contributes to providing information that measures the result of the unit's or entity's business in terms of profit or loss for a particular financial period, i.e., a statement of changes in the entity's net equity as a result of the activity aimed at profit from the sale of goods or the provision of services.
- 3- It contributes to providing financial information related to the financial flows of the entity and its ability to pay obligations and the rights of third parties, as well as providing financial information in financial analysis and estimating the possibility of obtaining revenues in the future, i.e., for the purposes of speculating on the revenue strength of the entity.
- 4- Disclose, as much as possible, information related to the items of the financial statements required by the parties involved in the affairs of the entity, and aims to assist in the control of the operations of the entity by providing those in charge of the management of the entity with the means and procedures that enable them to perform all financial operations properly and to prepare various reports and financial statements that are used as a basis for raising productivity and determining liability.

The use of artificial intelligence in the field of accounting: Practitioners of the accounting profession can use artificial intelligence and take advantage of the advantages it offers to allow it to simplify operations, reduce time, effort, and cost, and improve the abilities of accountants to make optimal decisions.

1. **Automated Data Processing:** AI-powered systems can extract financial data from various sources, such as invoices and bank statements, and automatically fill accounting software. This reduces manual data entry efforts and reduces the risk of errors, leading to time and effort savings.
2. **Financial Data Analysis:** AI can analyze the developed data, allowing accountants to generate valuable insights from large amounts of financial data and enable them to identify trends, exceptional situations, and correlations, and provide inputs for financial forecasting, budgeting, and decision-making processes.
3. **Fraud detection and risk assessment:** AI algorithms can detect patterns that indicate fraudulent activities by analyzing financial transactions, supplier data, and other relevant information.
4. **Preparation and analysis of financial statements:** AI simplifies the process of preparing financial statements and reports by collecting, classifying, and reporting data, ensuring compliance with accounting standards, improving accuracy, and reducing the time required for financial reporting.
5. **Risk Management and Auditing:** AI-based systems can assess financial risks by analyzing historical data and market trends. They also provide auditors with advanced tools to identify areas of internal control and improve the accuracy and effectiveness of risk management practice.

Professional organizations and specialists have opinions on the future of the accounting profession in light of artificial intelligence technologies.

There are many opinions related to professional organizations and specialists regarding the impact of the use of artificial intelligence technology on the future of the accounting profession, including the following: (Amirhom, 2022: 261-262)

1. **The opinion of the Institute of Chartered Accountants of England and Wales (ICAEW):** The Institute of Chartered Accountants of England and Wales (ICAEW) reported that artificial intelligence will radically change the accounting and auditing profession as it must be prepared for this stage, and a report has been issued by this institute, the content of which is that the profession needs to accept that devices will dominate more of the activities related to the decision-making process by humans and think about how to benefit from this, and the report shows that accountants have been using technologies for many years with the aim of The technical director at the same institute stressed that artificial intelligence systems are basically very capable and also develop very quickly, as they provide very accurate results and can replace human efforts if not completely dispense with them, however, the report does not expect a complete replacement of devices instead of humans, explaining that machines and devices, despite their capability, It cannot emulate human intelligence in terms of learning and is surrounded by many limitations.
2. **The Chairman of the Board of Directors of the International Arab Society of Certified Accountants (IASCA)** pointed out that artificial intelligence will impose itself in the coming years, and that in the next twenty years, the auditing profession will move from the audited human to the audited program, and the program will be more accurate, fast, and capable of detecting errors and fraud, as it will be based on international accounting standards, international auditing standards, and financial reporting standards, and the audit program will be Able to detect waste and errors and compare them with standards.

3. Kuwait Association of Accountants and Auditors (KAAA): The President of the Kuwait Association of Accountants and Auditors addressed, through his speech at the opening of the Sixth International Professional Conference for the Accounting and Auditing Profession (Challenges and Aspirations for the Future of the Profession) in 2018, the challenges and obstacles facing the accounting and auditing profession. The development of this science is in line with the successive developments in technologies in our contemporary world, stressing that the science of accounting has become entrusted to be one of the economic decision-making tools of countries and the main contributor to achieving their sustainable development.

Third Topic: The Field Aspect

Description and diagnosis of research variables: This paragraph aims to present, analyze, and interpret the results of the responses of the research sample members regarding the paragraphs contained in the questionnaire form by reviewing the values of the weighted arithmetic mean, relative importance, standard deviations, and coefficients of difference for each of the paragraphs of the research variables. The research determined the level of the answers in light of the arithmetic averages by determining their belonging to any category. Since the research form is based on the five-point Likert scale (strongly agree – strongly disagree), there are five categories to which the arithmetic averages belong, and the category is determined by finding the length of the range ($4-5 = 5$), and then dividing the range by the number of categories (5) ($4 \div 5 = 0.80$).

Table (3-1) Weighted arithmetic averages and their response levels

Level of Answer	Weighted Average
Very low	1 to 1.80
low	1.81 to 2.60
Mild	2.61 to 3.40
High	3.41 to 4.20
Very high	4.21 to 5

Source: Dewberry, Chris (2004). Statistical Methods for Organizational Research: Theory and Practice. First published, Published in the Taylor & Francis, p. 15.

Presentation, analysis and interpretation of the responses of the research sample members regarding the research variables Artificial Intelligence Techniques and the Accounting Profession: The paragraphs of the variables and their dimensions will be addressed by extracting the values of the weighted arithmetic media, relative importance, standard deviations, and the coefficients of difference calculated whether at the micro or macro level, as shown in the following:

Table (3) Descriptive statistics of research variables, artificial intelligence techniques, and the accounting profession

n=30

Relative Importance %	Variance Factor %	Standard deviation	Weighted mean	Dimensions
72	27.90	1.01	3.62	Artificial Intelligence Technologies
75	28.64	1.07	3.75	Machine Learning
69	34.90	1.20	3.45	Deep Learning
70	32.59	1.14	3.51	Robotic Process Automation

73	33.42	1.18	3.62	Expert Systems
71	56.26	1.19	3.56	Accounting Profession

Source: SPSS V.27 Program Outputs

First: Artificial Intelligence Technologies: The variable of artificial intelligence technologies achieved a weighted mean of (3.62), meaning that it falls within the category of (high), while the relative importance was (72%), while the value of the standard deviation was (1.01), while the percentage of the coefficient of difference was about (27.90%). It is a strategic necessity to keep pace with the accelerated digital transformations and build sustainable knowledge societies.

When observing the results in Table 3, we note the following:

1. Machine Learning: The dimension achieved a weighted mean of (3.75), meaning that it falls within the category of (high), while the relative importance was (75%), the value of the standard deviation was (1.07), and the percentage of the coefficient of difference was about (28.64%). From the above, it is clear that machine learning is one of the main pillars in the architecture of modern artificial intelligence. By developing algorithms capable of learning from data and improving their performance, machine learning opens wide horizons for smart applications in various fields. Therefore, understanding its theoretical and practical foundations is central to the study of artificial intelligence.
2. Deep Learning: The dimension achieved a weighted mean of (3.45), meaning that it falls within the category of (high), while the relative importance was (69%), while the value of the standard deviation was (1.20), while the percentage of the coefficient of difference was (34.90%), which from the above results, it is clear to us that the organization seeks to consolidate the principle of deep learning among individuals.
3. Robotic Process Automation: At the macro level, the dimension achieved a weighted mean of (3.51), meaning that it falls within the category of (high), while the relative importance was (70%), while the value of the standard deviation was (1.14), while the percentage of the coefficient of difference was (32.59%). Automation is done through "software robots" or "smart software" that mimic human interactions with user interfaces, Graphical User Interfaces (GUIs), to perform required actions on different applications..
4. Expert Systems: At the macro level, the dimension achieved a weighted mean of (3.62), meaning that it falls within the category of (high), while the relative importance was (73%), the value of the standard deviation was (1.18), and the percentage of the coefficient of difference was (33.42%). It is also important to note that the system also contributes to speeding up audits and financial analysis, saving accountants significant time and effort, especially in companies that handle a large amount of accounting data.

Second: The accounting profession: The accounting profession variable achieved a weighted mean of (3.56), meaning that it falls within the category of (high), while the relative importance was (71%), the value of the standard deviation was (1.19), and the percentage of the coefficient of difference was (33.42%). From the above, it is clear to us that the accounting profession represents an indispensable strategic element in the modern economic system. It goes beyond the limits of financial documentation to become a tool for analysis, accountability, guidance, and control, which makes it possible to develop and enhance the efficiency of employees. It has a national and institutional goal at the same time.

Testing the correlation and impact hypotheses between the research variables: It aims to test the correlation and impact relationships between the research variables, where the correlation and impact relationships will be tested at the level of the sub-hypotheses that emerged from the main hypotheses, as well as testing the correlation and impact relationships at the macro level through the use of the simple correlation coefficient (Pearson) and the simple linear regression coefficient.

First: Testing the first main hypothesis related to the relationship between artificial intelligence technologies and the accounting profession

(There is a significant correlation between artificial intelligence technologies and the accounting profession.)

Table (3-2) shows the Pearson coefficient matrix between these variables and their dimensions. Before entering into the test of this hypothesis, Table 3-2 also indicates the sample size (30) and the type of test (2-tailed). The summary (Sig.) in the table refers to the correlation coefficient significance test. On the correlation coefficient, which means that the correlation is significant at the level of 5%, while if there is a sign (**) on the correlation coefficient, it means that the correlation is significant at the level of 1%. The strength of the correlation coefficient is judged in the light of the rule (Cohen, 1977:79-81), as follows:

✓	Correlation is low: If the correlation coefficient value ranges between 0.10 to 0.29.
✓	Mean correlation: If the correlation coefficient value ranges between 0.30 to 0.49.
✓	Correlation is strong: if the value of the correlation coefficient ranges between 0.5 to 1

Source: Cohen, J. (1977), " Statistical power analysis for the behavioral sciences", New York: Academic Press.

Table (3-3) Test the First Main Hypothesis (Correlation Hypothesis)

		Machine Learning	Deep Learning	Robotic Process Automation	Expert Systems	Artificial Intelligence Technologies
Accounting Profession	Pearson Correlation	**0.53	**0.53	**0.60	**0.64	**0.63
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000
	N	30	30	30	30	30

****.** Correlation is significant at the 0.01 level (2-tailed)

Source: SPSS V.27 Program Outputs

Table (3-3) of the correlation matrix that tested the first main hypothesis and its sub-hypotheses shows that there are strong and moderate, significant positive correlations at the level of (1%) between the accounting profession and the variable of artificial intelligence technologies, as the values of the correlation coefficient between artificial intelligence technologies and the accounting profession reached a value of (0.63) at the level of significance of (1%) and is considered a strong relationship with the light of the (Cohen rule)). AI technologies are revolutionizing the world of accounting, redefining traditional tasks and developing more efficient and efficient business models. Despite the challenges, the smart integration of accounting knowledge and technical expertise will be the key to success in the future career of accountants and, hence, the relationship between the use of AI technologies and the accounting profession, as the accounting profession is expected to shift from a focus on manual data processing to a focus on financial analysis, strategic guidance, and risk assessment. An accountant will become more than just a data recorder to the role of a "smart financial analyst" who uses AI tools to support management decisions. At the dimensional level, the strongest correlation between both expert systems and the accounting profession was (0.64) at the significance level of (1%), and it is considered a strong direct relationship in light of the (Cohen) rule. While the weakest correlation between the expert systems and the accounting profession was (0.35) at the significance level of (1%), which is considered a moderate correlation in light of the (Cohen rule). The results obtained from Table (3-3) indicate the acceptance of the existence hypothesis for the first main hypothesis and its sub-hypotheses,

which states that "there is a significant correlation between artificial intelligence techniques and the accounting profession."

Second: Testing the second main hypothesis related to the impact relationship between artificial intelligence technologies and the accounting profession (there is a significant impact of artificial intelligence technologies on the accounting profession).

Table (3-4) Estimating the Relationship between Artificial Intelligence Technologies and the Accounting Profession

Accounting Profession						Dependent variable
F Tabular1%	F	T Tabular1%	T	R2	B	Independent variable
7.31	86.21	2.70	9.28	0.40	0.63	Artificial Intelligence Technologies

Source: SPSS V.27 Program Outputs

It is clear from the results of Table (3-4) that the regression coefficient of the variable of artificial intelligence technologies on the accounting profession reached (0.63), which means that if the artificial intelligence technologies change by one unit, the accounting profession will increase by (63%), noting that the effect is significant because the calculated value of (t) of (9.28) is greater than its tabular counterpart of (2.70) at the level of (1%). It is also noted that artificial intelligence techniques explain (40%) of the changes in the accounting profession, and the remaining percentage (60%) refers to other variables outside the current research model. Note that the estimated model is significant in general because the calculated value of (f) is greater than its tabular counterpart, which is (7.31) at the level of significance (1%).

Conclusions:

- 1- Artificial intelligence technologies have shown a direct impact in reshaping the traditional tasks of accountants, as the focus has shifted to data analysis and decision-making rather than manual data entry.
- 2- The use of artificial intelligence technologies has improved the level of accuracy and reduced human errors in accounting processes, especially in the areas of auditing and fraud detection.
- 3- Despite the advantages of the technology, the introduction of artificial intelligence into accounting raises ethical and professional questions related to legal liability for errors resulting from algorithms.
- 4- The use of smart systems has reduced the need for repetitive manual work, and this contributes to reducing human material costs in the long run.
- 5- Promote culture and control through the ability of these systems to detect anomalous patterns and fraud faster than traditional methods.
- 6- The results of the research proved that artificial intelligence contributed to reducing the time and effort spent on preparing financial reports.
- 7- The next stage requires accountants to possess data analysis skills and an understanding of AI algorithms, along with traditional accounting knowledge.
- 8- The results of the research showed that there is a significant correlation between artificial intelligence technologies and the accounting profession.

Recommendations:

- 1- Educational institutions should integrate the concepts of artificial intelligence and data analysis into accounting curricula to prepare graduates who can keep pace with technological changes.
- 2- Accounting organizations need to develop sustainable training programs that enable accountants to use AI tools effectively and efficiently.
- 3- Professional legislation and standards should be developed that regulate the use of AI in accounting and define ethical and professional responsibilities in cases of error or algorithmic bias.
- 4- It is important to open channels of cooperation between universities and the labor market so that research and projects are closer to the practical reality.
- 5- Encouraging organizations to adopt smart systems gradually and deliberately.
- 6- The need to provide an advanced technological environment within accounting institutions.
- 7- Promoting awareness of the importance of artificial intelligence among undergraduate accounting students.

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