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Dr. Sakar Dhahir Omar Amen
Assistant Professor, Technical Institute of Kirkuk, Northern Technical University, Iraq

Corresponding Author:
Dr. Sakar Dhahir Omar Amen
Assistant Professor, Technical Institute of Kirkuk, Northern Technical University, Iraq

The implications of artificial intelligence on the accounting profession - A study of the opinions of a sample of accountants in the central organization of accountants

Sakar Dhahir Omar Amen

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Abstract
Recent years have witnessed remarkable developments in the fields of technology and technology, which in turn have been influenced by various sectors and specializations. Our current era is characterized by new scientific and technical innovations, and the economic sector is one of the fields most up to date with these developments. Among these innovations, the science of artificial intelligence stands out, which appeared in the 1950s. It is considered a major turning point in human history due to its contribution to developing new and modern methods for managing and conducting operations in various fields and specializations. For the purpose of explaining the importance of this study and solving its problem The study deals with the theoretical foundation of artificial intelligence in general and its repercussions on the accounting profession in particular. It includes a study of the opinions of a selected sample of accountants in the Central Auditing Organization through the analysis of a questionnaire distributed to members of the selected sample. The research ends with a presentation of a number of important conclusions and recommendations, including: Artificial intelligence contributes to the automation of many repetitive manual tasks in accounting, which enhances work efficiency and saves time and effort for accountants. It also improves the quality of financial reports and provides valuable analyzes and advice that help in making effective strategic decisions.

Keywords: Artificial intelligence, accounting profession, central auditing organization

Introduction
The science of artificial intelligence emerged as a result of research, experiments, and discoveries conducted by numerous scientists and researchers. This science primarily aims to provide advanced information and programs that help individuals achieve outstanding work in various fields. This represents a quantum leap in the world of technology, as institutional management methods have shifted from traditional methods to the use of the latest programs and advanced technologies with the aim of improving institutional performance and striving to develop them. The accounting profession has recently faced numerous challenges as a result of the rapid changes in the international business environment. These changes include global economic transformations and the emergence and spread of advanced information and communications technology across various fields, including accounting. These developments have created an imperative for accounting firms to adapt to them and accommodate the requirements of the modern era. Consequently, these firms worldwide have turned to the use of advanced information technology in the accounting process. Therefore, this study addresses the impact of artificial intelligence on the accounting profession, with the aim of understanding this science and analyzing the reality of the profession following its significant impact. Based on this, the following main question arises: What are the implications of artificial intelligence for the accounting profession in the Central Auditing Organization? From the main question above, several sub-questions arise: What is the definition of artificial intelligence? What are the main implications of artificial intelligence for the accounting profession?

Literature Review of Accounting Thought

The advancements in artificial intelligence (AI) technologies have garnered significant interest from researchers across various fields, including accounting. Numerous previous studies have examined the impact of these technologies on the accounting profession, with diversity in both Arab and foreign studies.

The researcher indicates that the studies to be reviewed encompass a variety of temporal and geographical diversities, allowing for a comprehensive view of the impact of artificial intelligence on the accounting profession worldwide. For instance, a study by Zhang & Li (2018) [12] confirmed that AI assists accountants and auditors in saving time, effort, and money. Another study by Madina (2021) [10] pointed out that AI contributes to improving information quality and avoiding accounting fraud. The mentioned studies unanimously agree that artificial intelligence has a positive impact on the accounting profession, through: time, effort, and cost savings, improving information quality, avoiding accounting fraud, reducing errors, increasing productivity and efficiency, faster document processing, enhancing internal accounting processes, supporting accounting operations, and ensuring compliance with laws and regulations.

In addition to the aforementioned studies, subsequent studies also concurred on the common objective, which is that the use of artificial intelligence significantly impacts the improvement and development of the auditing and accounting profession. Previous studies in their samples, applied on a sample consisting of accountants and auditors from accounting firms, financiers, heads of accounting departments, internal auditors, and accounting and auditing personnel, except for the study by Ghadeer Mohammed Awad Al-Jaber and the study by Bnina Sabrina, which were applied on a simple random sample. Surveys were used as a data collection tool in the studies, except for the study by Ammar Essam Al-Sammarai and Andia Abdul Jabbar Al-Sharida, which used interviews for data collection. The previous studies utilized the descriptive method, except for the study by Abdul Rahman Rashwan and I'tidal Al-Hilu, which used the analytical method, and the study by Ghadeer Mohammed Awad Al-Jaber, which used the inductive method. The study stands out from others on the same topic and has a proposed concept in its theoretical aspect, and it used content analysis method. Steve Jacob, Sima Al-Sweissi, and Jean Simon Tro Del's research differed from other studies through the viewing of the problem on a theoretical side. Here, content analysis method was used.

The study "The Usefulness of AI Apps in Accounting Profession amidst COVID-19 Pandemic" by Rashwan and Al-Hilu (2020) [5] investigated the relevance of such applications in the accounting profession during the COVID-19 pandemic. This research demonstrated that AI technologies have a powerful role in the enhanced and development of the performance quality of accounting and auditing professionals. It provides a comprehensive view into the complex accounting tasks, contributes to the efficiency in accounting, and develops the whole discipline itself. The report suggested that the accounting firms in Gaza apply the AI applications in their work in light of the fact that the AI plays a significant role in increasing accounting efficiency.

The study, which was done by Steve Jacob, Sima Souissi, and Jean-Simon Trudel (2020) [11], titled “Artificial Intelligence and Transformation of Accounting and Financial Audit Professions 2020” was focused on the review of using artificial intelligence in the accounting and financial audit professions. There are no doubts that AI is used to make the job market more effective. Besides time saving, this technology provides more accurate information which, in turn, improves analysis processes and decision making. AI applications are in fact going to solve different accounting problems and future of the profession is able to be developed by using such complex AI applications. It seems smart technologies will extend to include the use of more improved decision-making tools, and quite soon machine learning can be used to monitor financial transactions.

The study by Elias, Ar'ara, Khaled, Rabei, and Abdelnour (2022) [3], titled "Implications of Artificial Intelligence on the Professions of Auditing and Accounting: A Survey Study," aimed to understand the impact of AI applications on the auditing and accounting professions and their role in improving the performance of Algerian economic institutions. This study focused on three main AI applications: expert systems, neural networks, and cloud computing, highlighting their role in developing services in economic institutions and attempting to apply them to Algerian enterprises through a survey distributed to a sample of 15 individuals. Data analysis was conducted using various statistical methods and IBM SPSS Statistics 24 software.

The study by Rashwan and El-Hallou (2020) [5] examined the impact of using artificial intelligence applications on the accounting profession amidst the COVID-19 pandemic. The study revealed that the utilization of AI technologies significantly enhances and develops the professional performance quality of accountants and auditors. The accuracy and efficiency of accounting is improved greatly by this technology, it particularly allows better processing of complex accounting tasks. The proposed assessment highlighted the importance of Gaza accounting offices adopting AI by considering the frontier efficiency in accounting processes.

Steven Jacob, Sima Souissis, and Jae-Simon Trudel’s study (2020) [11] from Québec, “The Impact of AI in the Accounting and Financial Audit Professions 2020,” had the purpose of reviewing the importance of using artificial intelligence in accounting and financial auditing. The report pointed to the growing exposure of AI in the job market, which will enable its deployment for time saving and making the information more accurate for accountants, as a result enhancing the quality of analysis and decision making. Consequently, the research resulted in a finding that adopting sophisticated AI apps can be regarded as a major factor in developing the profession of accountants by solving a wide range of accounting problems. With the advancement of smart technologies which will likely have even more powerful decision-making capabilities, there may be a near future where AI will be used to entirely review all financial transactions.

The study by Elias, Arara, Rabie, and Karmite (2022) [3], titled "Implications of Artificial Intelligence on the Audit and Accounting Profession: An Exploratory Study," aimed to understand the impact of AI applications on the audit and accounting profession and their role in enhancing the performance of Algerian economic institutions. This study focused on three main AI applications: expert systems,

neural networks, and cloud computing, highlighting their role in service development in economic institutions and attempting to apply them to Algerian enterprises through a survey distributed to a sample of 15 individuals. Data analysis was conducted using various statistical methods and the IBM SPSS Statistics 24 software.

The study reached several conclusions, including: the current application of AI systems in Algerian institutions, at their current level, does not contribute to enhancing audit quality or improving the accounting profession in general. This is attributed to these institutions' weak implementation of research and information systems and the lag in technology despite state efforts to support this general trend and enhance contribution to this field's development. Progress in these institutions requires elevating both auditing and accounting functions from traditional to digital, increasing the ability to detect fraud, and moving away from sample inspection by focusing on overall data.

In their "The Impact of Artificial Intelligence Application on the Future Accounting Field: A Field Study" study, Amirhham and Jihan Adel (2022) sought to examine the influence of AI applications on the accounting profession. The research focused primarily on three main axes: the interpretive comprehension of AI and its impact on the accounting profession, as well as the views of stakeholders towards the accounting profession of the future. To reach the research results, the following methodological steps were followed: carrying out surveys, acquiring data from accountants and auditors, applying statistical and analysis methods, and assessing the accuracy of hypotheses through this information.

The research findings included: the relationship between AI and accounting strategies and techniques, the reality of AI impacting accounting strategies and techniques, AI technology has an impact on jobs, and stakeholders' opinions on the developments. The survey showed that a great number of accountants and auditors acknowledge the effect of AI on their occupation and understand that these advanced technologies have to be adopted to be on the same level with the competition.

The research recommended incentivizing accountants and auditors to use AI, issuing guidelines on AI technology use, and keeping accountants informed of modern developments in AI and their impact on their profession.

Study Objectives

The current study aims to

- Explore the nature of artificial intelligence and its various applications in the field of accounting.
- Raise awareness among institutions about the necessity of development and reliance on modern technologies in the accounting profession.
- Evaluate the impact of artificial intelligence on the future of the profession.
- Analyze the fears and threats to the human element.

Importance of the Study

The importance of using artificial intelligence applications is highlighted in the following points

- Utilizing human experience and transferring it to intelligent systems to maximize its benefits and leverage it anytime and anywhere.
- The significant and growing adoption of artificial intelligence applications in institutions, where these applications are characterized by speed, accuracy, and flexibility in work, and their ability to detect and overcome many risks.
- The ability to use these applications in areas that involve complex details and require mental focus, continuous presence, and making sensitive and quickly implementable decisions, where delay or error is not permissible.

Study Limitations

To clarify the aspects of our topic and define it in a way that allows addressing the main problem, the study limitations have been defined as follows

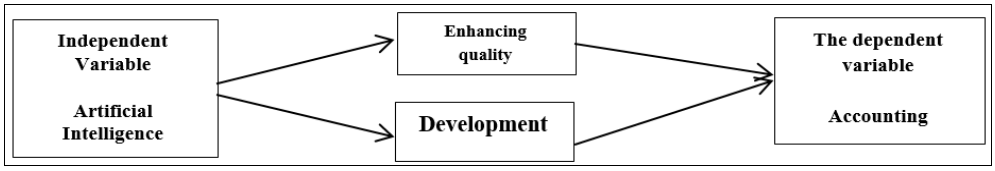
- **Time Limitation:** This research is confined to the period from January 2024 to April 2024, during which information will be collected and analyzed within this specified timeframe.
- **Institutional Scope:** This research revolves around artificial intelligence applications in specific institutions. The study focuses on selected institutions where such applications are employed.
- **Geographic Scope:** This research is limited to the Egyptian context and does not address the use of artificial intelligence applications in contexts outside Egypt.

Study Methodology: This study adopts both the inductive and deductive approaches. The inductive method is realistically used to describe and infer the current status of artificial intelligence introduction, and analyze the potential benefits of its applications. A hypothesis will be formulated and attempted to be proven in reality. Additionally, the study relies on survey techniques and data collection from selected economic institutions to test the study hypotheses and provide recommendations and suggestions. This will be achieved through distributing questionnaires to a sample of economic institutions. The collected data will be processed and analyzed to test the hypotheses proposed in the study and to reach actionable results and recommendations.

Study Model and Variables

Variables are fundamental in scientific research, especially the independent and dependent variables, in all aspects and types of research. For our study, the following variables were analyzed and tested

- **Independent Variable:** This variable is observed and measured for its positive or negative impact on the dependent variable. Our research analysis is fully focused on "Artificial Intelligence" which is considered the most fundamental principle and the driving force underlying innovation and development in the professional fields.
- **Dependent Variable:** This feature is centered on the alteration of the dependent variable in response to the independent variable. In our study, this is illustrated by the fact that the "accounting profession" means the science of summarizing and recording the financial aspects of transactions or those transactions which contain a money component in any form. This artwork comprises of monitoring and reporting of the results emanating out of the operations in an orderly way which provides a uniform financial statement description of the financial variables that have been included in the study.



The concept of Artificial Intelligence (AI)

The notion of Artificial Intelligence (AI) is concerned with the area in computer science which enables creation of systems and programs that can imitate or mimic the way humans think, learn, rank choices, and solve problems. The purpose of AI is to design machines that can undertake assignments identical to those that humans perform and in a manner similar to how humans would think. The techniques used in artificial intelligence rely on data utilization and analysis, as well as the development of models and algorithms that enable computer devices to learn and improve their performance autonomously (Aldalahmeh, 2019: 177) [1].

Artificial Intelligence consists of two main words: "intelligence" and "artificial." The meaning of the word "intelligence" relates to the ability to understand and comprehend new and changing circumstances, i.e., the ability to perceive, understand, and learn from new situations or conditions (Akinadewo, 2021: 40) [8]. On the other hand, the word "artificial" refers to the process of manufacture or creation, indicating all things that arise as a result of human intervention and shaping, meaning they do not occur naturally without human intervention. Therefore, Artificial Intelligence is generally defined as intelligence that is created or manufactured by humans in a machine or computer device (Chowdhary, 2021: 18) [13]. Artificial Intelligence derives from the original intelligence granted by humans to the machine or computer. In general, Artificial Intelligence is defined based on its main goal, which is to develop advanced methods for task performance and derive results similar to those attributed by humans to intelligence.

The theoretical grounding of Artificial Intelligence (AI) in the field of accounting is based on principles and concepts that integrate computer science with accounting. Its aim is to develop models and systems capable of simulating and enhancing accounting and auditing processes in more efficient and accurate ways. The application of AI in accounting can encompass a range of ideas and techniques, including

1. **Machine Learning:** AI enables accounting systems to analyze financial and accounting data autonomously, extracting patterns and forecasts. Systems can learn from historical data and develop predictive models for future financial trends and financial analysis.
2. **Natural Language Processing:** Using natural language processing techniques to analyze and understand accounting documents and financial reports. AI systems can read and comprehend accounting texts, verify compliance with accounting standards, and analyze financial disclosures (Madina, 2021: 29) [10].
3. **Data Analytics:** AI can assist in analyzing large financial datasets and extracting important results and analyses. AI enables accounting systems to detect potential violations of accounting standards and verify the accuracy of financial operations.
4. **Smart Robots:** Using smart robots in accounting operations to execute repetitive and matching tasks accurately and quickly. Robots can prepare financial reports, review accounts, and execute accounting operations based on predefined rules (Osman, 2021: 82) [7].

By utilizing AI techniques in accounting, the accuracy of financial data can be improved, audit processes can be expedited, and financial decision-making can be enhanced. Financial predictions and analysis of future financial scenarios can be improved as well.

The artificial intelligence revolution in the accounting profession has transformed the way accountants work. They can now accomplish tasks that used to take a long time, such as writing reports, entering data, and recording general ledgers, more easily and quickly using software such as Excel, Xero, Intuit, and Sage. As a result, the accounting profession has undergone significant changes in recent years.

A) Key Impacts

1. **Automation:** Estimates suggest that robots and automation have eliminated nearly 40% of the work previously done by accountants (Steve, 2020: 162) [11].
2. **New Tasks:** New tasks have emerged with the use of artificial intelligence in accounting practices, such as data analysis, building predictive models, and providing financial consulting (Elias, 2022: 28) [3].
3. **Smart Accounting Systems:** Significant efforts have been made in recent years to develop complex systems based on artificial intelligence (AI) aimed at increasing the performance of internal accountants and auditors, creating greater value for organizations, improving business quality, and investment decisions, aligning with the main mission of the accounting profession (Zhang, 2018: 39) [12].

B) Advantages of Using Artificial Intelligence in Accounting

Artificial intelligence is revolutionizing various fields, including the financial sector. With technological advancements, AI systems can automate many financial tasks, saving time and effort while improving efficiency.

- **Payment Processing (Receipt):** These systems assist in tracking customers and efficiently processing invoices. AI powered digital systems learn account codes that match each invoice, reducing errors and speeding up verification processes. The digital transformation in accounting and finance enables electronic invoice processing without the need for physical paperwork (Al-Samarrai, 2020: 17) [2].
- **Purchasing:** Application Programming Interfaces (APIs) enable AI systems to process unstructured data from various systems and records, automating the purchasing process. Many companies now offer online purchasing and selling methods, reducing the need for paperwork and facilitating the purchasing process. AI systems help improve the efficiency of the purchasing process by reducing errors and speeding up processing (Elias, 2022: 39) [3].

- **Supplier Management:** AI systems assist in verifying supplier details such as tax data and credit scores, ensuring the selection of reliable suppliers. AI technology automatically assigns new suppliers in the system without the need for human intervention. Query gateways allow users to easily access supplier-related data (Rashwan, 2020: 78) [5].
- **Audit Processes:** Digital auditing enhances security levels by tracking all accessed files, facilitating the audit process, and reducing the need to search through paper documents. Digital auditing ensures higher accuracy in auditing processes, contributing to ensuring the accuracy of the company's financial data. AI in accounting helps record all financial transactions for the company, facilitating the audit process and enabling better data analysis. AI systems make audit processes more efficient and effective by automating many tasks (Aldalahmeh, 2019: 197) [1].
- **Monthly (Quarterly) Cash Flows:** AI techniques enable the collection of data from multiple sources and easy integration, facilitating the analysis of cash flows. AI tools ensure the accuracy and security of financial data, enhancing the reliability of financial reports. AI techniques easily unify monthly, quarterly, or yearly cash flow data, facilitating their analysis and comparison (Osman, 2021: 82) [7].

Expense Management: Automating expense review and approval tasks saves time and effort for the workforce. AI systems help review expenses with greater accuracy and efficiency than humans, reducing errors and improving the accuracy of financial data. Reading receipts and reviewing costs automatically saves time. Additionally, AI systems alert human labor forces when any breaches or oversights occur in the expense budget (Al-Samarrai, 2020: 21) [2].

Field Study

In this part of the study, the researcher conducted a survey questionnaire consisting of three dimensions and containing a total of 38 questions, aiming to survey the opinions of the participants according to the study sample categories. The questionnaire was designed by the researcher using statistical methods to verify the validity and reliability of the questions. A closed questionnaire system was used, where answers are predefined options. This type of questionnaire enjoys the advantage of facilitating coding and relying on it more, as the answers are predefined, making it easier for participants to manage and understand these questions.

A five-point Likert scale was used to determine the responses of the sample individuals, enabling us to obtain quantitative data and achieve a normal distribution of these data before applying statistical methods to them. The following table illustrates the relative weights of the five-point Likert scale (5 strongly Agree, 4 Agree, 3 Neutral, 2 Disagree, 1 strongly Disagree).

Study Population

The study population consists of accounting offices and accountants in the Central Agency for Accounting in Egypt.

Study Sample

The study sample and participant categories consisted of a group of accountants in accounting offices, and a group of accounting officials in the Central Agency for Accounting in Egypt. The researcher used Proportion Allocation technique to distribute the study sample across different study categories. 180 questionnaires were distributed to collect data, according to the pre-estimated sample size. The questionnaires were distributed according to the following table

Table 1: Survey Investment

Category	Distributed investments	Received investments		Analyzable forms	
		Number	The proportion	Number	The proportion
Group of accountants in accounting offices	80	77	96,2	77	96,2
Group of accounting officials at the Central Accounting Authority	100	91	91	88	88
Total	180	168	93,3	165	91,6

The demographic characteristics of the study sample

Table 2: Demographic Characteristics of the Study Sampl

The variable	The categories	The frequency	%
Educational qualification	Bachelor's degree	29	17.5
	"Postgraduate diploma"	48	29.1
	"Master's degree"	56	34.0
	"Ph.D."	32	19.4
Occupation	"Accounting Office Manager"	12	7.2
	"Accountant at an Accounting Office"	65	39.4
	"Accountant at the Central Accounting Authority"	88	53.4
Years of experience	"Less than 5 years"	14	8.5
	"5 - 10 years"	33	20
	"10 - 15 years"	83	50.3
	"More than 12 years"	35	21.2

From the previous table, the following conclusions can be drawn: Regarding occupations, accountants in the central accounting agency obtained the highest percentage at 53.4%, followed by accountants in accounting offices, and finally office managers. This aligns with the distribution of survey forms.

Regarding educational qualifications, 17.5% of the study sample holds a "high" academic qualification, 29.1% hold a "diploma of higher studies" qualification, 34% hold a "master's" degree, and 19.4% hold a "doctorate" degree. This confirms the availability of academic competencies in the study sample, qualifying them to accurately understand and comprehend the survey items.

Regarding the experience of the sample, the results of the previous table demonstrate the participants' ability to understand and comprehend the research topic and their practical background, qualifying them to understand and comprehend the survey items and answer them accurately.

From the above information, it is evident that the study sample is large and specialized in the field of study, and specialized results derived from the field study can be relied upon.

The psychometric properties of the survey instrument (validity, reliability)

Address the reliability and validity of research tools and measures in research studies. It can be rephrased as follows:

Psychometric properties encompass a set of indicators that reflect the confidence, stability, and consistency of test results, including validity and reliability. Validity refers to the appropriateness of the research instrument or measure for measuring the phenomenon under study and its ability to provide the required information. Reliability, on the other hand, refers to the accuracy and comprehensiveness of the research instrument or measure, where it is expected to yield approximately consistent results when applied to two separate groups of individuals under different conditions. Reliability of the measure is typically understood as the extent to which the measure yields consistent readings each time it is used and is considered an indicator of the degree of accuracy and consistency of the data provided by the measure regarding the studied variable.

Table 3: Measures of Validity and Reliability for Different Survey Dimensions According to Cronbach's Alpha Test

The Dimensions	N	Cronbach's alpha	The reliability percentage
The first dimension	10	0.731	85.4
The second dimension	16	0.769	87.7
The third dimension	12	0.801	89.4
Total	38	0.767	87.5

The stability equals the square root of reliability multiplied by 100. From the above table, it is evident that the values of both reliability and stability coefficients for the different survey axes are 0.767 (87.5%) respectively, which is a high percentage. This confirms the reliability of statistical analysis results and the possibility of applying them to the study population.

Descriptive statistics for the study axes will be analyzed in this section, extracting measures of central tendency, measures of dispersion, coefficient of variation, and relative ranking of survey axes. The following table illustrates the descriptive statistics set.

Table 4: Descriptive Statistics for Study Axes

The Dimensions	The median	The standard deviation	The coefficient of variation
The first dimension	4.60	0.807	0.758
The second dimension	4.06	0.793	0.626
The third dimension	4.26	0.879	0.769

From the previous table, it is evident that the first axis, "Determinants and Dimensions of Artificial Intelligence Systems Applications," obtained the highest mean value of 4.60, followed by the third axis, "Impact of Artificial Intelligence Applications on Accounting Profession Functions," with a value of 4.26. The lowest mean value among the study axes was for the second axis, "The Role of Artificial Intelligence Applications in Supporting Accounting Profession Strategies and Techniques," with a value of 4.06.

The third axis, "Impact of Artificial Intelligence Applications on Accounting Profession Functions," had the highest standard deviation with a value of 0.879 and the highest coefficient of variation of 0.769. This indicates that the respondents' opinions regarding this axis varied and diverged to a greater extent than their opinions on other axes. This provides justification for conducting this study.

The second axis, "The Role of Artificial Intelligence Applications in Supporting Accounting Profession Strategies and Techniques," had the lowest standard deviation with a value of 0.793 and the lowest coefficient of variation of 0.626. This means that the respondents' opinions regarding this axis were largely consistent and did not vary to the same extent as their opinions on other axes.

Normality Test

To determine whether the data follows a normal distribution and thus whether parametric tests should be used in the study, the Kolmogorov-Smirnov test is applied.

The data is considered normally distributed according to the Kolmogorov-Smirnov test if the significance level (sig) is greater than 0.05. If the significance level is less than 0.05, it indicates that the data does not follow a normal distribution.

Table 5: Tests of Normality (Kolmogorov-Smirnov Z)

The Dimensions	Z	Sig
The first dimension	1.168	0.063
The second dimension	1.101	0.078
The third dimension	1.103	0.085

Parametric tests were used in this study to check whether the data followed a normal distribution. If the data followed a normal distribution, it would be appropriate to use

parametric tests. However, if the data did not follow a normal distribution, nonparametric tests would be used instead.

Statistical hypotheses for the field study
For the field study, hypotheses were formulated as follows:

First null hypothesis: H0
"There is no statistically significant relationship between the use of artificial intelligence applications and the strategy and techniques of the accounting profession."

First alternative hypothesis: H1
"There is a statistically significant relationship between the use of artificial intelligence applications and the strategy and techniques of the accounting profession."

Second null hypothesis: H0
"There is no statistically significant relationship between the use of artificial intelligence applications and the elimination of some functions in the accounting profession."

Second alternative hypothesis: H1
"There is a statistically significant relationship between the use of artificial intelligence applications and the elimination of some functions in the accounting profession."

Statistical methods used in the study
1. Reliability and validity measures were used to test the validity of the research tools used in the study.
2. One-sample T-test was used to determine if there were differences between the sample mean and the neutral mean of various questionnaire items and to estimate the relative weight of survey statements in order to measure the degree of positive or negative response to survey statements among respondent categories.
3. The item is classified as positive if the estimated t-value is greater than the critical t-value, which equals 1.98 at a significance level of 0.05, and the relative weight is greater than 60%.
4. The item is negative if the estimated t-value is less than the critical t-value, which equals 1.98 at a significance level of 0.05, and less than 60%.
5. The item's opinions are considered neutral if they are "not significant" at a significance level greater than 0.05, and the relative weight is close to 60%.
6. Correlation analysis using Pearson's correlation coefficient and Spearman's correlation coefficient was used to determine the degree of correlation between the independent variable and the dependent variable.
7. Chi-Square test was used to determine the relationship between the independent variable and the dependent variable. This test is also known as the "independence test.

Results Analysis and Hypothesis Discussion:
Having established the relevant and validity of the questionnaire list, the researcher made the analysis and drew conclusions on the hypotheses. In this section of the research, the researcher explained the types of statistical data analysis that could be used on the research questions and hypotheses to support the hypotheses. The researcher had to flash the questionnaire items axes, and to get to the bottom of the hypotheses trying to prove or disprove them using a computer and the Statistical Package for the Social Sciences (SPSS V26) software.

The first study hypothesis test
In the sphere of statistics, there is no evidence of a direct connection between the adoption of AI implementations and the strategies and practice methods of the accounting profession.

A. T-test On - Simple Test
To test the validity of this hypothesis, the researcher used a T-test. The results of the statistical analysis for the first null hypothesis can be presented and analyzed through the following table

Table 6: Results of t-test at a significance level of 0.05 for testing the first hypothesis

One- simple Test						
Test Value = 0						
Q	T	Dr	Sig	Mean differsnce	95% Confidence Intravel Differsnce	
					Lower	Upper
Q1	39.509	164	0.000	3.500	3.33	3.67
Q2	50.779	164	0.000	3.835	3.69	3.98
Q3	48.336	164	0.001	3.817	3.66	3.97
Q4	48.568	164	0.000	3.819	3.71	4.03
Q5	48.595	164	0.000	3.821	3.65	3.96
Q6	66.209	164	0.002	4.192	4.12	4.26
Q7	56.336	164	0.000	4.134	4.05	4.22
Q8	48.336	164	0.000	3.817	3.66	3.97
Q9	49.068	164	0.001	3.828	3.71	4.03
Q10	69.595	164	0.000	3.830	3.65	3.96
Q11	42.977	164	0.000	3.482	3.32	3.64
Q12	44.200	164	0.000	4.085	3.98	4.19
Q13	54.446	164	0.000	4.127	3.93	4.23
Q14	44.254	164	0.000	3.087	3.57	3.91
Q15	51.770	164	0.000	3.978	3.83	4.13
Q16	48.336	164	0.000	3.790	3.64	4.94

The critical t-value at a significance level of 0.05 with degrees of freedom (164) is 1.98

From the table above, it is evident that the calculated t-value ranges between 39.509 and 66.209, which is greater than the critical t-value (1.98) at a significance level less than 0.05. This indicates that the majority of opinions among the sampled groups support the relationship between the use of artificial intelligence applications and the strategy and techniques of the accounting profession, as statistically demonstrated by the analysis above.

B. Correlation Test

The Pearson correlation coefficient and the Spearman correlation coefficient were used for the correlation test. The following table illustrates the results of this test

Table 7: Correlation Relationship for Testing the First Hypothesis

The use of artificial intelligence applications	Correlation	
0.568	Pearson's correlation coefficient	Accounting profession's strategies and techniques
0.701	Spearman Correlation	
0.000	Approximate Significance	
165	N	

The results shown in the previous table indicate a strong positive relationship between the use of artificial intelligence applications as an independent variable and accounting profession's strategies and techniques as a dependent variable. The Pearson correlation coefficient was 0.698 and the Spearman correlation coefficient was 0.701, with a significance value less than 0.05. Therefore, this means there is a strong relationship between the use of artificial intelligence applications and accounting profession's strategies and techniques.

C. Chi-Square Tests: To clarify the existence of a statistically significant dependency relationship between the independent and dependent variables in the first hypothesis of the study, a chi-square test was used. The following table illustrates the results of this test

Table 8: Chi-Square Test for Hypothesis 1

The use of artificial intelligence applications	Chi- Square	
63.274	Pearson Chi-Square	Strategies and techniques of the accounting profession
0.001	Asymptotic Significance	
3	Df	
165	N	

The critical value of the chi-square statistic at a significance level of ≥ 0.05 and with 3 degrees of freedom is 7.81.

The results from the table indicate that the chi-square value is 63.274, which is greater than the critical chi-square value for 3 degrees of freedom, and the probability value is less than 0.05. Therefore, this result suggests a statistically significant relationship between the use of artificial intelligence applications and the strategies and techniques of the accounting profession.

Based on the results from tables 6, 7, and 8, it is evident that there is a statistically significant relationship between the use of artificial intelligence applications and the strategies and techniques of the accounting profession.

Accordingly, the null hypothesis is rejected, and the alternative hypothesis, which states that "there is a statistically significant relationship between the use of artificial intelligence applications and the strategies and techniques of the accounting profession," is accepted.

Test of Hypothesis Two

"There is no statistically significant relationship between the use of artificial intelligence applications and the elimination of certain tasks in the accounting profession."

A. T-test On - Simple Test

To examine the validity of this hypothesis, the researcher conducted a T-Test. The statistical analysis results for the second null hypothesis can be presented and analyzed through the following table:

Table 9: Results of t-test at a significance level of 0.05 for testing Hypothesis Two

One- simple Test						
Test Value = 0						
Q	T	Dr	Sig	Mean differsnce	95% Confidence Intravel Difference	
					Lower	Upper
Q1	87.534	164	0.000	4.002	4.02	4.20
Q2	73.392	164	0.000	3.865	3.76	3.97
Q3	75.965	164	0.001	4.156	4.05	4.26
Q4	94.558	164	0.000	3.969	3.85	4.09
Q5	68.441	164	0.000	3.951	3.84	4.06
Q6	78.462	164	0.000	4.085	3.98	4.19
Q7	96.477	164	0.000	4.106	4.02	4.19
Q8	84.351	164	0.000	4.054	3.96	4.15
Q9	94.037	164	0.001	4.045	3.96	4.13
Q10	77.424	164	0.000	4.106	4.00	4.21
Q11	70.968	164	0.000	3.991	3.88	4.10
Q12	57.606	164	0.000	3.911	3.78	4.04

The critical value of the chi-square statistic at a significance level of 0.05 with 164 degrees of freedom is 1.98.
From the table above, it is evident that the calculated t-values range between 57.606 and 96.477, which are greater than the critical t-value of 1.98 at a significance level of less than 0.05. Therefore, this indicates that the majority of the categories included in the study perceive the relationship between the use of artificial intelligence applications and the elimination of some functions in the accounting profession.

B. Correlation Test
The researcher relied on Pearson's correlation coefficient and Spearman's correlation coefficient. The following table illustrates the results of this test:

Table 10: Correlation Relationship for Testing the Second Hypothesis

The use of artificial intelligence applications	Correlation	
0.661	Pearson's R	Continuation of some accounting functions
0.523	Spearman Correlation	
0.001	Approximate Significance	
165	N	

The results shown in the table above indicate a strong positive relationship between the use of artificial intelligence applications (as the independent variable) and the discontinuation of some functions in the accounting profession (as the dependent variable). The Pearson correlation coefficient was 0.623, the Spearman correlation coefficient was 0.541, and the p-value was less than 0.05. This result suggests a strong relationship between the use of artificial intelligence applications and the discontinuation of some functions in the accounting profession.

C. Chi-Square Tests
To determine the effect of the independent variable on the dependent variable in the second hypothesis, a chi-square test was used. The following table illustrates the results of this test

Table 11: Correlation Relationship for Testing Hypothesis Two

The use of artificial intelligence applications	Chi-Square	
31.010	Pearson Chi-Square	Continuation of some accounting functions
0.009	Asymptotic Significance	
3	Df	
165	N	

The table with 0.05 significance level and 3 degrees of freedom has a critical Chi-square value of 7.81. The computed Chi-square value in the table is 31.010, which is greater than the critical Chi-square value for 3 degrees of freedom, and the probability value is less than 0.05. This result suggests that some accounting functions become automated and then subside as a result of the use of artificial intelligence applications**.**
The findings of the tables 9, 10, and 11 show that indeed there is a strong support for the second hypothesis which is the claim that the use of artificial intelligence applications and automation could lead to the elimination of some accounting functions. These are measures which show that the effect is important, and is present. This way, it can be inferred that artificial intelligence applications face the risk of ceasing the operation of certain functions in the domain of accounting**.**

Results

- The artificial intelligence (AI) is one of the major dimensions capable of making a qualitative jump in the field of accounting of Egypt. By using its state-of-the-art techniques, it has the capacity for better accountancy accuracy, in depth analytics, and accurate forecasts which are crucial in the process of making good financial decisions.
- Egypt faces some difficulties in integrating artificial intelligence into accounting practices, which require a largely qualified manpower and infrastructure that is logical for such development. Nevertheless, the active participation of the government, finance sector, and learning institutions can be the required support in the realization of the use of these technologies and fully utilizing their huge potential.
- AI helps in automating great number of monotonous manual tasks in accounting, and gives accountants a chance to work more effectively, and to save their time and effort by doing something else. It enhances the overall quality of financial reports, and also provides useful insights and counsel to facilitate relevant policy decisions.
- Research proves the connection between artificial intelligence (AI) and the service delivery of the accounting profession. These applications have indeed been able to keep up with accounting by promoting work quality, productivity and also, facilitating innovation and growth.
- While the adoption of AI applications in accounting is significantly accelerated, the role of protecting financial data and guaranteeing information confidentiality, undoubtedly, becomes of primary concern. Thus, effective strategies and proper controls must be implemented in order to protect data and instruct all the accounting staff on the relevant information security issues as well as the measures to prevent them.
- Artificial intelligence is given as a term to a system that is based on computer science which simulates the human intelligence and behavior and not just on specific algorithms. Artificial intelligence aim to expand human abilities, instead of replacing them. This is done by developing smart tools which are used to do the tasks more efficiently and successfully.
- It is not true that AI technologies will result in accounting professionals being phased out, but rather

they will have to cope with the challenge of remaining abreast of technological innovations. Artificial intelligence will change the skill requirements of accountants, so they need to keep up and develop knowledge in it to ensure they remain relevant in the changing job market.

Recommendations

- Building accounting knowledge and technology competences are the core element to be in a position to appropriately use smart systems.
- Specialized courses and regular expertise updates allow accountants to master AI systems and apply them in the day-to-day activities.
- Significant advances in smart accounting can be made with the increasing communication and collaboration among the major sectors of the economy that include technology companies and the government by the sharing of experiences and skills. Consequently, it fosters a culture of innovation and creates products that meet market demands and, in the end, enhance the effectiveness of accounting processes.
- Before embarking on the widespread application of artificial intelligence technologies, it is important to assess the readiness of the accounting sector for these changes. This can be done by studying the available technological infrastructure, human resource skills, and market acceptance of these technologies.
- Allocating resources by governments and financial institutions is necessary to implement artificial intelligence technologies in the field of accounting through updating systems, programs, and devices used, providing necessary technical support, and financing research and development projects in this field.

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Survey: Implications of Artificial Intelligence on the Accounting Profession, Axis One: Applications of Artificial Intelligence Systems

S	"The phrase"	"Agreed."	"Strongly agreed."	"Neutral."	"Completely disagree."
1	Making computers think and act like humans.				
2	Accurate simulation of reality is a key feature of artificial intelligence systems.				
3	Ultra-fast task execution represents a distinctive feature of artificial intelligence systems.				
4	High accuracy in results ensures the reliability of artificial intelligence systems.				
5	Saving time and effort is the tangible benefit of artificial intelligence systems.				
6	Smart task management in artificial intelligence systems is revolutionizing management.				
7	Smart solutions to complex problems represent a superior capability of artificial intelligence systems.				
8	Understanding user needs is the foundation of artificial intelligence systems.				
9	Learning from the past and leveraging it for the future is the intelligent feature of artificial intelligence systems.				
10	Creativity and understanding the visual world are advanced capabilities of artificial intelligence systems.				

Axis Two: Supporting the Applications of Artificial Intelligence for the Strategy and Techniques of the Accounting Profession

S	"The phrase"	"Agreed."	"Strongly agreed."	"Neutral."	"Disagreed."	"Completely disagree."
1	The result of using artificial intelligence applications increases the confidence level in financial data.					
2	Enhancing investors' confidence in artificial intelligence applications in financial data.					
3	Smart solutions for accounting tasks from artificial intelligence applications expedite and enhance accuracy.					
4	Artificial intelligence applications that improve performance represent a competitive advantage in the business world.					
5	With the use of artificial intelligence applications, repetitive tasks are eliminated, relieving the burden on accountants.					
6	Artificial intelligence applications improve data quality, ensuring reliable data for informed decision-making.					
7	Artificial intelligence applications offer better services for an advanced accounting profession.					
8	The role of artificial intelligence applications revolves around intelligently reviewing accounts, detecting, and analyzing risks.					
9	Standards-compliant auditing: Artificial intelligence applications enhance governance.					
10	Outstanding quality in accounting processes: Artificial intelligence applications improve result accuracy.					
11	Deep understanding of the regulatory environment from artificial intelligence applications aids accountants.					
12	Artificial intelligence applications improve detection of irregularities.					
13	Artificial intelligence applications inform accountants about laws and keep them updated on legal developments.					
14	Smart analysis of financial data through artificial intelligence applications reveals relationships and changes.					
15	Artificial intelligence applications enhance the efficiency of accounting.					
16	Artificial intelligence applications assist accountants.					