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The impact of using artificial intelligence on the quality of internal auditing

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Abstract
The research aimed to understand and discuss the advantages of integrating artificial intelligence systems and their impact on improving the quality of internal auditing in general and identifying the areas of artificial intelligence, as well as determining which of these areas are most distinguished in improving internal auditing performance, in addition to revealing the level of impact of artificial intelligence in improving internal auditing performance. And shedding light on the importance of artificial intelligence and the need to pay attention to it and strive to use it and benefit from it as much as possible. In addition to presenting a set of proposals for the field under study on the extent of the role that artificial intelligence plays in improving internal auditing performance. It resulted in a set of results, the most important of which is that artificial intelligence helps increase the likelihood of detecting errors and fraud and thus achieving a high level of quality of the auditing process. The most important recommendations emerged: the need for complete guidance for internal auditors on how to use artificial intelligence when studying the risks of fraud and manipulation, and for this guidance to be fruitful, internal auditors must adhere to auditing standards when the auditor discovers cases of fraud and manipulation.

Keyword: Internal auditor, artificial intelligence, internal audit quality

Introduction
The world has recently witnessed modern developments in the technical and technological field, which contribute to serving several fields and specializations, so that all countries of the world are currently seeking scientific development and renewal, and institutions are the first fields that seek to keep pace with innovation and development, with the aim of continuing and improving their performance. Among the new developments is what is known as artificial intelligence, which is considered a major turning point in the world for what it has provided in terms of new and modern methods in operations and management in various fields and areas, as the individual possesses highly advanced information and programs that enable him to achieve the best work, and artificial intelligence is considered a qualitative shift in the field of technology that transforms from traditional methods in managing institutions for their various activities to using the latest programs and advanced technologies in order to improve the level of performance of these organizations and develop them.

In the past decade, prominent financial fraud behaviors have emerged, and this phenomenon has led to an inevitable need for effective fraud detection in management and financial accounting, as the auditing profession recognizes the lack of current auditing methods, and this requires continuous integration between technological progress and institutions to conduct the highest level of technology knowledge to detect fraud, because conducting a normal audit takes a long time, as huge amounts of data need to be analyzed. Therefore, it was necessary to use artificial intelligence in a timely manner and internal review, to create creative ideas for the auditing profession, simplify the approach to managing daily operations, and improve the quality of auditing.

The first topic
Research methodology
The problem of the study
Today, institutions live in a rapidly changing environment due to the rapid and successive

developments in software and electronic computing systems and their software that have surpassed other developments in other sciences with the emergence of new innovations in this field, and this is what high-performance institutions need in practicing their work, and public sector institutions face many risks when practicing their work, which leads to their exposure to many crises, so institutions that wish to develop their work and raise the efficiency and expertise of their employees must look for means that enable them to change their reality, and combining the advantages of technology and administrative skills will enable these professionals to discover valuable ideas hidden in the data and publish them efficiently.

The traditional image of the internal auditor is no longer suitable for the profession, information technology has changed the modern work style in terms of effort and fatigue in addition to the required accuracy and quality.

Among the problems facing Iraqi institutions in general and the auditing profession in particular are the incomplete infrastructure in the field of information technology and artificial intelligence, the lack of a practical legal framework that sets legal controls that facilitate its flow and prevent acts or crimes of hacking, and regulates its work, the incomplete institutional framework, weak control over information security and integrity, and weak awareness of the use of computers, the web, and e-mail and their multiple uses.

Accordingly, artificial intelligence, allows for the creation of predictions for the future using the information contained in current data, analyzing it and benefiting from it, by developing a new framework that defines the characteristics of artificial intelligence systems and explains in what way artificial intelligence and human intelligence can be combined to improve the internal audit process to benefit from the quality of the audit.

Accordingly, artificial intelligence enables the creation of predictions for the future using the information contained in current data, analyzing it and making use of it, by developing a new framework that defines the characteristics of artificial intelligence systems and explains in what way artificial intelligence and human intelligence can be combined to improve the internal audit process to benefit from the quality of the audit.

Therefore, the internal auditor is supposed to move from traditional methods and use artificial intelligence systems that reduce the burden on the auditor as well as increase the quality of the audit, since the use of smart systems saves time and effort and improves the performance of the audit process, in addition to the justifications and motives that were behind enduring the hardships and paths of scientific research.

Importance of the research

The importance of this research comes from the urgent need to develop Iraqi institutions, especially in terms of information auditing, with the great and increasing importance of artificial intelligence applications in institutions, as these applications are characterized by speed, accuracy and flexibility in work, and their ability to discover many violations, reduce them and reveal them when they occur and take corrective and deterrent measures towards them with the required speed. And bypassing many details characterized by complexity that require mental focus and continuous mental presence and sensitive and quick decisions that do not tolerate delay or error.

Research objectives

This research aims to understand and discuss the advantages of integrating artificial intelligence systems and their impact on improving the quality of internal auditing. The objectives of the study are as follows:

1. Identifying the fields of artificial intelligence, as well as determining which of these fields are more distinguished in improving internal audit performance**.**
2. Revealing the level of impact of artificial intelligence in improving internal audit performance
3. Providing a set of proposals for the researched field on the extent of the role provided by artificial intelligence in improving internal audit performance.

Research hypotheses

Main hypothesis

- **H:** There is a statistically significant positive impact relationship between artificial intelligence and improving internal audit performance.
- Subordinate hypotheses branching from the main hypothesis:
- **H1:** There is a statistically significant positive impact relationship between artificial intelligence and rationalizing the internal auditor's judgment.
- **H2:** There is a statistically significant positive impact relationship between artificial intelligence and the strength and reasonableness of the internal auditor's judgment.

Hypothetical research model

The hypothetical study plan was designed according to what came from a survey of the intellectual outputs of the solid scientific literature related to the main and sub-variables of the study. Based on the importance and objectives of the study, a set of hypotheses were formulated, as shown in the hypothetical study plan below, and the study includes.

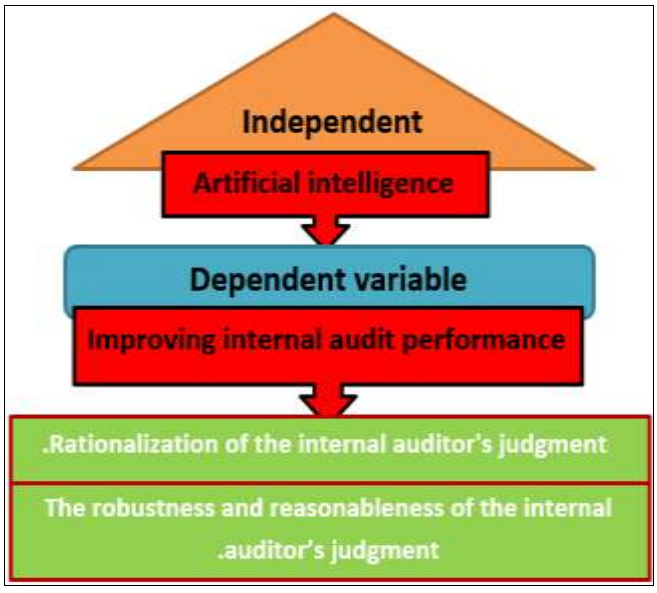

Fig 1: Prepared by the researcher

Second topic
The narrative aspect of research
Artificial intelligence
Definition of artificial intelligence

Researchers have defined artificial intelligence with several definitions, including the definition of (Othman, 2015) [1], who defined it as one of the branches of computer science that is concerned with studying the creation of computer systems that display certain forms of intelligence, i.e. systems that learn new concepts and "tasks, systems that can think and draw useful conclusions about the world in which we live. Systems that understand natural languages and observe and understand visual scenes, and systems that can achieve": work that requires human intelligence) Othman, 2015: 3) [1].

As for (Anbar, 2016: 43) [2], he defined artificial intelligence as one of the computer applications that is concerned with building programs capable of studying and implementing the repetitive activities that humans perform," and aims to understand the complex mental processes that the human mind performs while practicing the thinking process and then translate these mental processes into equivalent accounting processes that increase the computer's ability to solve complex problems".

The historical development of artificial intelligence

"In the mid-twentieth century, some scientists began to explore new ways to build intelligent machines focusing on the latest discoveries in neuroscience, new mathematical theories of information", and developments in cybernetics. Automation Most importantly, with the invention of the digital computer, a machine emerged that could simulate the process of human computational thinking, the foundations of the modern field of artificial intelligence research at a campus conference These attendees became leaders in artificial intelligence research at Dartmouth College in the summer of 1956 Founded by Herbert Simon, Allen Newell, and Marvin Lee Minsky Over the decades, the artificial intelligence laboratories at MIT, Carnegie Mellon, and Stanford, they and their students wrote programs that, have amazed most people. (Raqiq, 2015, 14) [3].

They were computers that solved algebraic problems, proved logical theorems, and spoke English. In the mid-1960s, the US Department of Defense generously funded research. These researchers made the following predictions*:*

1. Machines will be able to do within twenty years any work that a human being can do. Herbert Simon: 1965.
2. Marvin Minsky: 1967 [15]: "Within one generation, the problem of artificial intelligence will be largely solved".

In the early 1980s, we witnessed a new renaissance in artificial intelligence through the commercial "success of expert systems, which are artificial intelligence programs that transfer the knowledge and analytical skills of one or more human experts. A programming language began to flourish after a few years", and its profits reached more than a billion dollars. In 1987, the (Research Lisp Machine) witnessed the collapse of the artificial intelligence machine market again, but this time for a period longer than before*.*

In the 1990s and early 2000s, the field of artificial intelligence has seen greater success in logistics, data mining, medical diagnosis and many other fields, in addition to the entire technology industry, the most important of which is related to the power of computers today, the increase in precise sub-problems and artificial intelligence. (Raqeeq, 2015, 15) [3].

Artificial intelligence design methods

There are two types in the method of artificial intelligence design, which are as follows (Qamora *et al*., 2018, 8) [4].

First: A central form inspired by the nerves of the human brain (Neuromimetism) and in this type of design, the task of the algorithm lies in finding the optimal solution. However, in most cases, the algorithm is obligated to consider all procedures because the number of possible solutions increases exponentially according to the number of elements, which greatly increases the complexity of the self-learning process. This form of artificial intelligence is known as artificial neural networks, especially deep learning networks, which have suffered for many years from the problem of limited automatic computational capabilities due to the incompatibility of electronic development in the design of powerful devices and storage, but the current explosion of big data and the acceleration in creating huge areas of information storage centers have allowed a strong return of this technology recently.

Second: Decentralized form: inspired by nature and biology (Bio inspired intelligence).

Including simple living organisms such as ants, where these very simple organisms, without complex brains, can accomplish very complex tasks such as searching, prospecting, manufacturing and building bridges to bring food, as these systems are based on primary entities that have the ability to pursue one or more individual and common goals, such as multi-unit systems (Agent Systems Multi) based on imitating the social intelligence of ant societies in rapid and automatic adaptation as well as the superior ability to self-organize without central rule. Intelligence comes as a result of sharing and interaction between entities and their environment. Figure No. (2) illustrates these types.

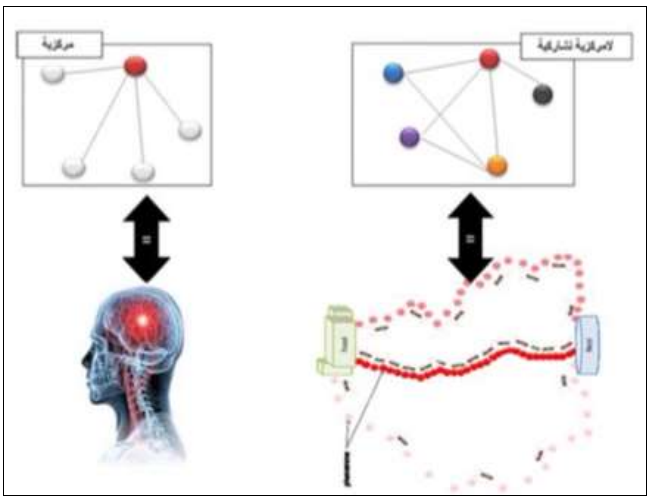

Fig 2: Illustrates the types of artificial intelligence

Artificial Intelligence VS Human Intelligence

There are a number of differences between artificial intelligence and human intelligence, and Table (1) shows these differences:

Table 1: Differences between artificial intelligence and human intelligence

Natural intelligence	Artificial intelligence
It is characterized by the possibility of being forgotten	It is characterized by permanence
Difficulty disseminating and reproducing knowledge	Ease of reproducing and disseminating knowledge
Difficulty in documentation, which requires re-submission every time	The possibility of documentation very easily and quickly
Basic tasks are executed much more slowly than in artificial intelligence	Carrying out basic tasks more quickly than in normal intelligence
Natural intelligence is characterized by being creative and imbued with the human spirit	Artificial intelligence lacks this characteristic
The ability to acquire human knowledge and the ability to solve problems easily	Artificial intelligence cannot achieve this characteristic except under approved programs for this purpose

Source: (Al-Suwailem, 2000: 26) [5].

Internal Audit

Definition of internal audit, its objectives and types

The internal audit system in any institution or company is considered the first line of defense that protects the interests of shareholders in particular and all parties related to the interests of the institution or company, as the internal audit system is the system that provides protection for the process of producing financial information that can be relied upon in making investment and credit decisions. Internal audit is defined as an organizational plan and all the methods and techniques followed by the institution in order to protect its assets and achieve accuracy and reliability of its accounting data and develop operational efficiency and encourage adherence to administrative policies. (Al-Tamimi, 2014: 77) [8].

Accordingly, the goal of internal audit is to ensure the effectiveness and efficiency of operations, the credibility of financial reports, compliance with applicable laws and regulations, and the preservation of assets against misuse or misuse. Through this definition, it becomes clear that internal auditing has a set of objectives, the most important of which are the following: (Shahata, 2014: 35) [9], (Idris, 2012: 28) [7].

1. **Adherence to established legislation, policies and procedures:** Internal auditing in this area aims to verify the extent of compliance with established laws, regulations and policies, both internal and external, and to uncover and clarify any violation or deviation, with a diagnosis and reasons for its occurrence and to develop the necessary recommendations to address and correct it.
2. **Evaluating plans and policies to achieve the objectives and adhere to them:** This results in discovering weaknesses or defects in most of the procedures used by the institution in order to propose the necessary amendments and improvements, and all aspects of the institution or company's activity are examined, thus helping management rationalize its decisions by discovering shortcomings, problems and dangers to which the institution is exposed due to poor coordination between the work of its departments, and thus it is possible to propose the necessary means of correction and then provide management with the necessary information in order to help it improve the efficiency of its achievement in the future.
3. **Operational efficiency and effectiveness:** Efficiency means working to avoid wasteful use of the organization's available resources. This is done through a set of methods and approaches that help in this, such as planning budgets, standard costs, etc., while the element of effectiveness means achieving the organization's or company's goals at the lowest costs while maintaining the same quality. These goals can be achieved in the presence of a high-quality information system. 4. Assets protection: Protecting the company's assets is a major goal of internal auditing. The word protection means protecting assets from losses that may result from fraud, errors, or other undesirable matters. The management bears full responsibility for preserving assets, including fixed assets such as buildings, land, machinery, etc., and circulating assets such as cash, inventory, etc.

The basic components of internal audit systems

The internal audit system, like any other system, has components that are linked to each other and are relied upon to ensure its success and increase its effectiveness and efficiency. The writers and researchers in control and auditing have agreed that the main components must be available in any sound audit system, which are as follows:

1. Efficient organizational structure

The existence of an efficient organizational structure is the starting point for an effective audit system, and its development takes into account the sequence of competencies, and clarifies the main departments with the precise definition of the authorities and responsibilities of these departments. The organizational structure is defined as "the framework that defines the internal structure of the company and clarifies the departments and departments that perform the various tasks and activities necessary to achieve the company's goals, while defining the powers and responsibilities of the departments and departments." (Ahmed, 2018: 61) [10] Accordingly, it can be said that the efficient organizational structure includes the following: (Al-Hadidi, 2012: 48) [12].

a) Internal auditing of operations, so that no single employee or department performs the process from beginning to end.
b) Determine the responsibility for recording and trading data, as well as determining the responsibility for trading and maintaining the assets that are accounted for.
c) Organizational independence, by defining the powers

and responsibilities of each department and organizing the relationship between departments.

2. Sound accounting system

There is no doubt that establishing a good and effective internal audit system requires providing a sound accounting system that ensures accounting for the company's various activities and then preparing its final accounts and financial position statement, in addition to imposing control over operations. (Jamil, 2014: 58) [11].

Auditing Guide No. (4) issued by the Accounting and Auditing Standards Board in Iraq defines the accounting system as "a set of operations and procedures by which the information and data required to achieve management objectives are processed, including keeping records and accounting work procedures followed in preparing, analyzing, calculating, classifying, transferring, summarizing and reporting on information." (Al-Taie, 2018: 22) [13].

The sound accounting system is based on a number of basic pillars that can be summarized as follows: (Schmitz, 2019: 10) [14].

a) Organized and numbered documents covering the company's activities.
b) The existence of an accounting manual that explains the methods of processing operations in accounting.
c) Preparing planning budgets for all operations and verifying their implementation.
d) The existence of an effective cost system to measure actual performance and compare it with the standard.
e) Disclosing the results of operations in an appropriate manner in the financial statements.

3. Employee efficiency

The effectiveness of the internal audit system depends on the efficiency of employees in terms of placing the right employee in the right place, and despite the clarity of the lines of authority and responsibility and the correctness of the distribution of jobs according to the internal audit system, this system may not succeed in achieving its goals due to the inefficiency of the company's employees in performing the responsibilities assigned to them. Therefore, this requires the company's management to follow a sound policy for appointing new employees and promoting its current employees, in addition to developing their skills by following training programs. (Al-Taie, 2018: 24) [13].

4. Detailed procedures for implementing duties

This is done by taking into account the division of duties between the various departments within the company so that one person does not monopolize a process from beginning to end, i.e. keeping assets and accounting for them, as it poses a risk to the company's assets from manipulation or embezzlement. Accordingly, the institution or company must put in place procedures that will show the extent of employees' commitment to the instructions of the internal audit system, as in some large companies there is a special department to follow up on compliance with the internal audit system. (Schmitz, 2019: 7) [14].

The third section

The practical aspect

Designing the questionnaire form

The researcher relied on covering the applied aspect on the questionnaire form as we mentioned previously to obtain data and facts related to the study problem, and its questions were formulated in a clear and understandable manner based on several sources, and the questionnaire was distributed to a sample of internal auditors working in government institutions and private sector companies (Study sample). The questionnaire included the following axes:

- **Section One:** This section includes demographic questions for the research sample.
- **Section Two:** This section expresses artificial intelligence and the number of paragraphs (5) paragraphs.
- **Section Three:** This section shows the quality of internal control and the number of its paragraphs (5) paragraphs. The questionnaire was created according to a five-point Likert scale in the answers of the sample members. The response levels will be limited between (1-5) and will be measured in five levels according to the categories to measure the degree of response, as shown in Table No. (2).

Table 2: Five-point Likert scale

Answer	Category
I don't completely agree	1 – 1.79
I don't agree	1.8 – 2.59
neutral	2.6 – 3.19
I agree	3.4 – 4.19
I completely agree	4.2 – 5

Statistical description of the research variables

This paragraph dealt with presenting the most important results that the researcher reached through the questionnaire form and analyzing them with regard to the research variables in a manner consistent with the hypothesis and objectives of the research. The results were as follows:

Table 3: Statistical analysis of the paragraphs of artificial intelligence

Rank	t-value	Relative Weight	Standard Deviation	Mean	Paragraph	ت
1	13.27	85.2	0.038	4.26	Artificial intelligence increases the effectiveness of coordination, planning and collaboration in the audit process.	1
3	15.41	81.6	0.057	4.08	Intelligent AI supports and enhances the independence of the internal auditor.	2
4	22.37	79.0	0.079	3.95	Artificial intelligence increases the likelihood of detecting errors and fraud, thus achieving a high level of quality in the audit process.	3
2	8.17	82.6	0.076	4.13	Artificial intelligence increases the likelihood of obtaining reasonable assurance that financial reporting is free from material misstatement.	4
5	21.34	77.2	0.079	3.86	Artificial intelligence helps to generate as many ideas as possible about the session topic.	5

The tabular t value at a significance level of 0.05 and a degree of freedom of "74" is equal to 1.995

From Table No. (3), the following is clear:

1. Item (1) (Artificial intelligence increases the effectiveness of coordination, planning and cooperation in performing the audit process) obtained the first rank among the agreement weights, as the arithmetic mean reached (4.26), The responses exhibit strong agreement and demonstrate excellent uniformity through a standard deviation value (0.038) combined with a view Controller weight of 85.2% above the neutral "% 60" threshold. The study used a t value of 13.27 that surpassed the 1.995 tabular t value at a significance level of 0.05 and "74" degree of freedom. The research results demonstrate that artificial intelligence drives substantial advancements in the audit process effectiveness through coordinative operations.
2. Item (2), which is (Artificial intelligence works to support and enhance the independence of the internal auditor.) It obtained the third rank among the agreement weights, as the arithmetic mean reached (4.8), which tends towards (Agreement), Good response consistency emerges from this data set since both the standard deviation rate at 0.057 and response weight percentage standing at 81.6% exceed neutral standards of "%60". Since the calculated t value of 15.41 surpasses the tabular t value at a 0.05 significance level with a freedom value of 1.995 it indicates strong statistical significance. Artificial intelligence functions as a supplement which helps raise the autonomous capabilities of internal auditors.
3. Item (3), which is (Artificial intelligence increases the probability of discovering errors and fraud, thus achieving a high level of quality of the audit process.) The fourth agreement weight position emerged with an arithmetic mean of (3.95) indicating agreement status and strong response uniformity shown by (0.079) standard deviation and 79% relative weight above "60% neutral" rate. The obtained t value of 23.37 exceeds the tabular t value and shows (1.995) as the suitable degree of freedom "74" under 0.05 significance level. Research shows artificial intelligence systems increase error detection capabilities along with fraud discovery which leads to superior audit process outcomes.
4. Item (4), which is (Artificial intelligence increases the probability of obtaining reasonable assurance that financial reports are free from material misstatement.) Second among the agreement weights appeared due to an arithmetic mean of 4.13 indicating agreement while response homogeneity was shown by the standard deviation (0.067) and 82.6% relative weight exceeding neutrality at "60%". Data analysis indicates that the calculated t value (8.17) surmounts the tabular t value corresponding to a significance level of 0.05 with "74" degrees of freedom equal to 1.995. The likelihood of acquiring reasonable assurance about financially correct statements being free from material misstatement rises through the use of artificial intelligence technologies.
5. Item (5), which is (Artificial intelligence helps to present the largest possible number of ideas about the session topic.) Among agreement weights it achieved the lowest ranking because its calculation yielded (3.8) which indicates (agreement) status and responses showed excellent homogeneity through (0.079) standard deviation and (77.2%) relative weight surpassing "60%". Our calculated t value reached 21.34 exceeding the tabular value specified at 0.05 significance level and using 74 degrees of freedom. The company experiences resistance towards cloud accounting implementation because of its technical and monetary security concerns.

Table 4: Statistical analysis of internal audit paragraphs

Rank	t-value	Relative Weight	Standard Deviation	Mean	Paragraph	ت
2	24.17	79.2	0.055	3.96	There is a well-established system of internal auditing bodies in the organization that contributes to activating risk management.	1
1	14.12	81.8	.075	4.09	The internal auditor conducts an independent assessment of the accounting practices and processes contained in the organization's financial reports.	2
4	11.47	78.2	.057	3.91	The internal auditor can communicate his opinion without hindrance through a report submitted to the oversight committee or the board of directors.	3
3	9.37	79.2	.060	3.96	The internal auditor's experience enables him to obtain information about the accuracy of the organization's financial information.	4
3	12.11	79.2	.060	3.96	The internal auditor's professional ability enables him to easily detect fraud and manipulation in the financial statements.	5

The tabular t value at a significance level of 0.05 and a degree of freedom of "74" is equal to 1.995

From Table No. (4), the following is clear

Item (1), which is (There is a tight system for internal audit devices in the organization that contributes to activating risk management) obtained the second rank among the agreement weights, as the arithmetic mean reached (3.96), which tends towards (Agreement), and there is very good homogeneity in the responses, as is evident from the standard deviation value (0.055) and the relative weight of 79.2%, higher than the neutral relative weight "60%". The obtained t value (24.17) is greater than the tabular t value at a significance level of 0.05 and the degree of freedom "74" is 1.995. This indicates the existence of a somewhat tight system for internal audit devices in the organization that contributes to activating risk management. Item (2), which is (the internal auditor conducts an independent assessment of the accounting practices and processes found in the organization's financial reports) obtained the first rank among the agreement weights, as the arithmetic mean reached (4.9), which tends towards (agreement), and there is very good homogeneity in the responses, as is evident from

the standard deviation value (0.057) and the relative weight of 81.8%, higher than the neutral relative weight of “60%”. The obtained t value (14.12) is greater than the tabular t value at a significance level of 0.05 and the degree of freedom “74” is 1.995. This indicates that the internal auditor conducts an independent assessment of the accounting practices and processes found in the organization’s financial reports. 3- Item (3), which is (the internal auditor can convey his opinion without obstacles through a report submitted to the oversight committee or the board of directors.) It obtained the fourth and last rank among the agreement weights, as the arithmetic mean reached (3.91), which tends towards (Agreement), and there is very good homogeneity in the responses, as is evident from the standard deviation value (0.057) and the relative weight of 78.2%, higher than the neutral relative weight "60%". The obtained t value (11.47) is greater than the tabular t value at a significance level of 0.05 and the degree of freedom "74" is 1.995. This indicates the internal auditor's limited ability to convey his opinion without obstacles through a report submitted to the oversight committee or the board of directors. 4- Items (4) and (5), which are (The internal auditor's experience enables him to obtain information about the accuracy of the organization's financial information.) and (The internal auditor's professional ability enables him to easily detect fraud and manipulation in the financial statements) obtained the third rank among the agreement weights, as the arithmetic mean reached (3.96), which tends towards (Agreement), and there is very good homogeneity in the responses, as is evident from the standard deviation value (0.060) and the relative weight of 79.2%, higher than the neutral relative weight "60%". The obtained t value (21.34) is greater than the tabular t value at a significance level of 0.05 and the degree of freedom "74" is 1.995. This indicates that. The internal auditor's professional experience and ability enables him to easily detect fraud and manipulation in the financial statements and obtain information about the accuracy of the organization's financial information. This proves the role of brainstorming in enhancing these capabilities to reduce cases of fraud and manipulation.

Testing research hypotheses

This axis seeks to examine the influence relationships between the independent variable (artificial intelligence) and the dependent variable (internal auditing), based on the primary hypothesis asserting a statistically significant positive influence of artificial intelligence on the enhancement of internal auditing performance. From this, two sub-hypotheses were derived, employing a simple linear regression model. The analysis levels were categorized into sub-levels and total levels to ascertain the significance of the influence of each sub-variable of the independent variables on each sub-variable of the dependent variables. The dimensions of the hypothesis are evaluated by comparing the calculated (F) value with the tabulated (F) value at a significance level of (0.05) as follows:

The primary hypothesis of the research posits a statistically significant positive correlation between artificial intelligence and the enhancement of internal auditing performance. Two sub-hypotheses emerged from this hypothesis, as seen in Table (5).

Table 5: It shows the impact of artificial intelligence in improving internal auditing performance

Decision	Significance	Calculated F-Value	Coefficient of Determination R2	Beta Coefficient β	Performance Constant (a)	Artificial Intelligence Internal Auditor
There is an effect	.642	4.981	.645	.228	2.775	Rationalization of internal auditor judgment
There is an effect	.312	9.994	.714	.461	1.756	Robustness and reasonableness of the internal auditor's judgment

*Table (F) value at level 0.05 = (3.89)

1-Analysis of the impact of artificial intelligence in rationalizing the internal auditor's judgment: It is clear from Table (5) that the calculated (F) value reached (4.981), which is greater than the table (F) value of (3.89) at a significance level of (0.05), and at a significance level of (.642). This means that there is an impact of artificial intelligence on the dependent variable rationalizing the internal auditor's judgment. Through the same table, the value of the constant (a = 2.775) can be observed. This means that there is an presence of artificial intelligence of (2.775) even if the amount of rationalizing the internal auditor's judgment is equal to zero. As for the value (228. = □), it means that a change of one unit in artificial intelligence will lead to a change in rationalizing the internal auditor's judgment of (228.). As for the value of the coefficient of determination (R2), its value was (.645). This means that artificial intelligence explains 64% of the variance in rationalizing internal auditor judgment.

2- Analysis of the impact of artificial intelligence on the robustness and reasonableness of the internal auditor’s judgment: It is clear from Table (5) that the calculated (F) value reached (9.994), which is greater than the tabular (F) value of (3.89) at a significance level of (0.05), and at a significance level of (.312), which means that there is an impact of artificial intelligence on the dependent variable, the robustness and reasonableness of the internal auditor’s judgment. Through the same table, the value of the constant (1.756=a) can be observed, which means that there is an presence of artificial intelligence of (1.756) even if the robustness and reasonableness of the internal auditor’s judgment is equal to zero. As for the value (461.= β), it means that a change of one unit in artificial intelligence will lead to a change in the robustness and reasonableness of the internal auditor’s judgment of (461.). As for the value of the coefficient of determination (R2), its value was (714.), which means that artificial intelligence explains the percentage of (0.71%) of the variance in the strength and reasonableness of the internal auditor's judgment.

Based on the above results, and considering the acceptance of the two sub-hypotheses, we conclude that the main hypothesis (there is a statistically significant positive impact relationship between artificial intelligence and improving

internal audit performance).

Section Four
Conclusions and Recommendations
Conclusions

1. Artificial intelligence helps increase the likelihood of detecting errors and fraud, thus achieving a high level of quality in the audit process.
2. Artificial intelligence increases the rationalization of internal auditors' mental judgment by 64%.
3. Artificial intelligence increases the strength and robustness of internal auditors' judgment on the validity of financial statements by 71%.

Recommendations

1. The need for comprehensive guidance for internal auditors on how to use artificial intelligence when studying fraud and manipulation risks, and for this guidance to be fruitful, internal auditors must adhere to auditing standards when the auditor discovers cases of fraud and manipulation**.**
2. Urging accounting and auditing professionals to practice artificial intelligence when performing auditing operations at all stages (Planning, implementation, reporting).
3. The need for researchers to pay attention to the subject of artificial intelligence with its concept, rules and requirements due to its great importance to the profession of auditing and control, whether external or internal.

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