International Journal on Economics, Finance and Sustainable Development (IJEFSD)

e-ISSN: 2620 – 6269
p-ISSN: 2615 - 4021

Volume: 8 Issue: 2 | June 2026

https://journals.researchparks.org/index.php/IJEFSD

Article

The Role of Artificial Intelligence in Reducing The Risks of Cloud Accounting

Hussien Sabea Khamees[1]

1. Technical Institute of Baqubah, Middle Technical University, Diyala, Iraq

* Correspondence: -

Abstract: This study aimed to examine the impact of artificial intelligence in reducing the risks of cloud accounting. The study addressed artificial intelligence in terms of its advantages, limitations, and objectives, as well as a comparison between human intelligence and artificial intelligence. It also explained cloud computing and its risks, and the extent to which artificial intelligence can be utilized to mitigate these risks. The most important risks that can be addressed using artificial intelligence include (human errors, financial manipulation, and cyber manipulation). The study found that artificial intelligence has an effect in reducing risks associated with cloud computing. The study recommended that companies should pay attention to artificial intelligence as an important tool for enhancing security levels in accounting.

Keywords: Artificial intelligence, cloud computing, cloud computing risks

1. Introduction

Industrial companies have been affected by technology, to the extent that even individuals who are not specialists in information technology now discuss information systems, devices, and technological advancements. As a result of this technological influence, their operations have become closely linked to innovative technological systems.

It is worth noting that industrial company management uses information in various types of planning, including strategic and operational planning. Information is also used to guide and implement decisions, identify organizational problems, and develop appropriate solutions. Information systems are considered the fundamental building block for developing models and programs based on artificial intelligence. Artificial intelligence represents a set of specialized methods and techniques used to develop systems that simulate certain aspects of human intelligence, enabling inferential processes that facilitate alternative selection and decision-making.

Cloud accounting refers to the use of information technology that relies on transferring accounting processing and storage capacity from local computers to what is known as "the cloud," which is accessed through technological networks and browsers. Thus, accounting software is transformed from a product into a service. When industrial companies use cloud accounting, they do not need to purchase servers, operating system licenses, power backup systems, backup devices, antivirus software, or other security programs. This results in cost reduction.

Research Problem: The research problem can be formulated through the following main question: *Is there an impact of artificial intelligence in reducing the risks of cloud accounting?*

Research Objective: This study aims to identify the impact of artificial intelligence in reducing the risks of cloud accounting. It also aims to explain what artificial intelligence is and what cloud accounting is.

Citation: Khamees, H. S. The Role of Artificial Intelligence in Reducing The Risks of Cloud Accounting. International Journal on Economics, Finance and Sustainable Development (IJEFSD) 2026, 8(2), 180-199.

Received: 10th Mar 2026
Revised: 21th Apr 2026
Accepted: 08th May 2026
Published: 11th June 2026

Copyright: © 2026 by the authors. Submitted for open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/)

Importance of the Research: The importance of this research stems from the significance of artificial intelligence and its role in the accounting field. It also highlights artificial intelligence and cloud accounting, their associated risks, and the impact of artificial intelligence in reducing the risks of cloud accounting.

Research Hypothesis: Based on the research problem, the hypothesis can be formulated as follows: *(There is an impact of artificial intelligence in reducing the risks of cloud accounting).*

2. Materials and Method

Chapter One: Artificial Intelligence

Introduction

Intelligence is one of the personal attributes with which God has honored human beings over all other creatures. Over time, humans realized that intelligence is the source of their strength and uniqueness, enabling its utilization in computers. Accordingly, many scientists attempted to study the concept of intelligence in humans and other organisms, and worked on finding a way to transfer intelligence to machines after confirming that machines do not naturally possess this trait.

Artificial intelligence aims to make technological machines simulate human intelligence so that machines can solve problems and make decisions in a scientific manner similar to human thinking [1].

Artificial intelligence is based on the assumption that human intelligence can be described and simulated through systems and technical devices. It is defined as the study and design of systems and devices that perceive their surrounding environment and perform behaviors that mimic human actions [2].

Concept of Artificial Intelligence

Artificial intelligence can be defined as a machine that perceives and understands sounds and languages, interprets them, solves problems, diagnoses diseases, controls vehicles on roads, and imitates images. It is a system capable of performing tasks related to living organisms [3].

It is also defined by Poola (2017: 10) as "the development of more advanced complex systems that have the ability to outperform humans in multiple ways."

The concept of intelligence refers to the ability to plan, reason, learn, feel, build awareness of knowledge, and communicate using natural language. Artificial intelligence is also defined as the science of thinking (i.e., algorithms) about how to make computers solve problems. AI programs and systems can be implemented in any programming language; however, there are also programming languages specifically designed for writing AI systems, as they provide convenience for programmers [4].

Advantages of Artificial Intelligence

Artificial intelligence has several advantages, including the following (Aishaoui & Bakri, 2021: 45):

1. **Knowledge representation capability:** Knowledge is represented using a special structure that describes facts, the relationships between these facts, and the rules connecting them.
2. **Use of heuristic methods:** This means that the program does not necessarily follow sequential steps leading to a correct solution. Instead, it retains flexibility to change its approach if the initial choice does not lead to a quick solution, rather than strictly determining the optimal or exact solution.
3. **Ability to handle incomplete information:** AI programs can find solutions even when complete information is not available at the time of problem-solving. However, incomplete information may lead to less efficient or less accurate conclusions, although the result may still be correct.
4. **Learning capability:** One of the most important features of artificial intelligence is the ability to learn from experience and past practices, as well as improve

performance by considering previous errors. This capability is linked to generalizing information, identifying similar cases, and ignoring irrelevant data.

5. **Reasoning capability:** This refers to the ability to derive possible solutions to a given problem based on known data and prior experience, especially in problems that cannot be solved using traditional methods. This capability is achieved through storing possible solutions and applying inference and logical rules [5], [6].

Objectives and Functions of Artificial Intelligence:

Artificial intelligence aims to understand the essence of human intelligence and design intelligent systems that share the same characteristics of human behavior and intelligence. It seeks to develop systems capable of simulating human intelligence processes, solving problems, and making decisions in a rational and logical manner similar to human thinking. It also works on developing computer technologies so that they can learn and benefit from past experiences in problem-solving [7].

Additionally, one of the functions of artificial intelligence is to create new knowledge and activate it electronically so that it can be used in decision-making and solving management problems, particularly strategic issues. It also involves storing methodological rules to communicate with stored knowledge and identify optimal utilization as well as scientific and procedural expertise [8].

In this regard, Afifi (2015: 12) identified the objectives of artificial intelligence as follows:

1. Assisting machines in processing data simultaneously, similar to human problem-solving. This parallel processing allows multiple instructions to be executed at the same time, resembling the way humans solve problems.
2. Providing a better understanding of human intelligence through the brain, in order to comprehend and imitate it, as the nervous system and brain are among the most complex organs, working in an interconnected manner to understand things.

Yassin (2018: 157) further stated that the objectives of artificial intelligence include:

1. Storing, interpreting, and preserving knowledge in systematic databases to reach results.
2. Acquiring accumulated human knowledge and benefiting from it in problem-solving.
3. Preserving knowledge, scientific expertise, and experience, and preventing its loss or deterioration.
4. Developing new expertise and using computed knowledge in decision-making processes.

Importance of Artificial Intelligence:

There is no doubt that artificial intelligence has played an important role in human life, as technology has entered all fields of life and knowledge. It now performs many tasks with high accuracy and speed, including highly dangerous activities. Artificial intelligence helps preserve the experience and knowledge accumulated by humans over the years and transfer it to intelligent machines. It also enables humans to use their natural language instead of complex programming languages in computers, making machines accessible to everyone, including people with special needs, after previously being limited to experts and specialists.

Artificial intelligence is linked to many fields such as disease diagnosis, prescription of medicines, legal and professional consultations, interactive education, as well as security and military applications. It also supports decision-making processes, as these systems are independent, accurate, and objective, producing decisions free from errors, bias, discrimination, and external interference. Intelligent machines also help relieve humans from many risks and psychological pressures, allowing them to focus on more important tasks [9].

Components of Artificial Intelligence:

Artificial intelligence consists of several components, as follows:

1. **User Interface:** It is the main factor in achieving user satisfaction when using a computer. It includes both hardware and software, and plays a major role in the effort required by the user to input data into the system and interpret its outputs [10], [11].
2. **Search Engine:** It is a program that determines the location of required information within a database. It also integrates new data and information through consistent analysis and processing strategies [12].
3. **Knowledge Base:** It includes internal memory (data storage), analytical processing through the internet, and integrated management information system operations related to customer service and preparing data for storage.

Methods of Artificial Intelligence:

Artificial intelligence aims to simulate human behavior and thinking through advanced programs. It is capable of learning many languages efficiently and performing tasks that are equivalent to or even exceed human intelligence. The main methods used in artificial intelligence include the following [13], [14]:

1. **Rule-Based Method:** This method relies on a set of rules for controlling a specific situation. A model is prepared that stores facts and information related to the subject of research. It can be used to analyze situations and derive new results. This method is widely used due to its simplicity, but it cannot always represent all models or produce all possible conclusions.
2. **Semantic Networks Method:** This method involves designing a network of relationships between the elements of a model and is widely used in model representation.
3. **Frame Representation Method:** It is considered a type of semantic network representation.
4. **Machine Vision Method:** This method converts electronic images into connected lines that form a visual representation, which is then compared with stored patterns in the computer. Examples include identifying an aircraft through its shape, wings, or tail, and recognizing mosques through domes and minarets.

Human Intelligence vs Artificial Intelligence:

The relationship between human intelligence and artificial intelligence is reflected in the simulation of human intelligent methods and presenting them in the form of systems that enable computers to search within intelligent domains and reach solutions. These systems are known as artificial intelligence systems. This relationship between human intelligence and artificial intelligence can be summarized as follows [15]:

1. Simulation of certain aspects of human intelligence through the use of symbols to recognize objects, search, and process information. It also involves utilizing knowledge gained from the experience of human experts and transferring it to computers in the form of systems. This has contributed to the development of symbolic processing, knowledge processing, problem-solving, expert systems, and various methods of human behavior modeling.
2. Following methods related to human comprehension, speech, perception, and understanding, which has led to the development of natural language processing systems.
3. Applying methods that control the brain and senses in relation to motor functions, which has contributed to the development of robotics programs.
4. Imitating the human sense of vision, which has led to the development of vision systems that enable image processing and shape recognition.
5. Simulating the functioning of neurons in the human brain, which has resulted in the development of cognitive simulation systems and neural computing systems capable of modeling human learning and recognition processes.

Chapter Two: Risks of Cloud Accounting

Introduction

Accounting, like other fields, is continuously evolving due to the significant technological and scientific advancements of the modern era. Therefore, there has been a growing need to integrate accounting with modern technologies in order to achieve better advantages in the global financial environment, especially in light of technological and informational innovations that add value to business activities.

It is worth noting that accounting software has existed for a long time and has undergone continuous development over many years. This development is still ongoing and has a clear impact on accounting transactions. Due to the large volume of data and the time required for processing it, accounting programs have become highly important for accountants, enabling them to perform their tasks faster, more accurately, and more efficiently [16].

One of the most important recent developments is the concept of cloud accounting, which is defined as a model that enables ubiquitous and convenient network-based access to a shared pool of configurable computing resources such as networks, servers, storage, applications, and services. These resources can be rapidly provisioned and released with minimal management effort or service provider interaction.

Cloud computing has proven its effectiveness not only in the information technology industry but also in accounting, as it is based on cloud infrastructure. Through this service-based model, companies can access their financial data via the internet using a web browser, since data is not stored on the user's device but rather on remote storage systems [17].

Definition of Cloud Accounting:

The term cloud accounting refers to the use of information technology that is based on transferring computer storage and processing to what is known as "the cloud." The cloud is a server that can be accessed via the internet and is located outside the user's premises, whereby accounting software is transformed from products into services [18].

The term cloud accounting became prominent in 2013 and is considered one of the applications of cloud computing. It is used for a specific purpose, namely processing accounting data and storing and transferring accounting-related information through servers managed by the organization to remotely managed network servers, known as the cloud network.

In this context, the National Institute of Standards and Technology defines cloud computing as a model that enables ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (such as networks, servers, storage, applications, and services), which can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model consists of five essential characteristics, three service models, and four deployment models.

Cloud accounting is also defined as a set of accounting services provided through the internet. Compared to traditional accounting information systems, it has an absolute advantage in input costs, maintenance costs, data reliability, and ease of use within companies [19].

Abdul Ghaffar (2019) stated that cloud accounting is the utilization of information technology based on transferring accounting processing to the cloud and shifting storage space from local computers to the cloud, allowing access through web browsers.

It has also been defined as the process of utilizing services without the need to install any software, as cloud accounting relies on accounting programs hosted on internet servers. This facilitates organizational work, reduces financial costs, and ensures compliance with international laws and regulations [20].

From a technical perspective, performance in cloud services refers to the availability of IT infrastructure, software, and services for companies and end users on demand via the internet and remotely. Thus, the cloud appears as a platform that enables access to

data and programs through the internet at any time and from anywhere. It also contributes to mobility, increased productivity, and allows users to complete tasks and enter data in less time [21].

Characteristics of Cloud Accounting:

Cloud accounting is distinguished by several characteristics and features that set it apart from other systems. It enables users to automatically allocate accounting resources according to their needs without interacting with the service provider, meaning on-demand resources. It also provides broad network access, as cloud accounting resources are available through the network and can be accessed via standard mechanisms, enhancing their use through various devices, including portable ones such as laptops and smartphones.

In addition, IT resources are pooled by the cloud accounting provider to serve multiple clients using a multi-tenant model. These physical or virtual resources are dynamically allocated and released according to customer demand. Generally, the user does not have control over or knowledge of the exact location of the allocated resources. Resources are provisioned and released flexibly, automatically, and optimally to quickly adapt to increases or decreases in demand. Furthermore, all allocated resources can be monitored and controlled to measure their consumption at an appropriate level of abstraction depending on the type of service, such as storage, computing time, and bandwidth [22].

Benefits of Cloud Accounting:

The benefits of implementing cloud accounting from both the service provider's and user's perspectives are as follows [23]:

1. **Cost reduction:** Cloud accounting does not require a large number of computers, which leads to reduced costs within the economic unit, as well as lower maintenance costs. It also eliminates the need for expensive software that requires continuous development, updates, and backups.
2. **Ease of access:** Cloud accounting applications allow access to financial data anytime and anywhere without the need to install software on a computer, as is traditionally required. It also allows access from any smart device and eliminates complexities in data processing units.
3. **Flexibility:** Cloud accounting provides accurate financial information at the required time with continuous updates. It responds to any possible changes and allows flexibility in working either from the workplace or home, regardless of user location, which has contributed to better information delivery for accountants and organizational managers.
4. **Time reduction:** Cloud accounting systems automatically and accurately record and process transactions instead of manual entry, which leads to automated processing and efficient time utilization.
5. **Data security:** Protecting financial data is essential in any organization. Cloud accounting systems provide secure data storage and ensure that data cannot be accessed without logging into the authorized account via the internet.
6. **Improved business performance:** Cloud accounting has contributed to generating financial reports in a timely manner, increasing flexibility and adaptability to changes in business operations. This has led to faster execution and better decision-making.
7. **Unlimited backup:** Cloud accounting enables the creation of backup copies of financial data regardless of size, preventing data loss by storing it on service provider servers.

Risks of Cloud Accounting:

Despite the benefits and advantages provided by cloud accounting and its impact on companies, it is necessary to focus on the risks that organizations may face in order to avoid them and maximize possible benefits. These risks include the following:

1. **Data loss:** This is one of the risks that may have a negative impact and cause significant damage to the service provider company. This is because the client stores their information with the service provider without keeping a copy on their personal device. Therefore, the service provider must maintain backup copies of client data to protect information that may be accidentally deleted by the user.
2. **Storage:** Storage is one of the most important risks faced by cloud service providers. Each company ultimately has a limited storage capacity, which must not be exceeded in order to maintain the integrity of the cloud storing client data and information. Therefore, each cloud system must have a backup server to store additional copies of data and information in case of failure in the main server, ensuring business continuity until the issue is resolved.
3. **Natural disasters:** Natural disasters are serious disruptions in the functioning of society that result in environmental, economic, human, or material losses exceeding the society's ability to cope with them. These disasters include several types: climatic hazards such as hurricanes, heat waves, and fires; hydrological hazards such as floods, tsunamis, and storms; geological hazards such as earthquakes, volcanoes, and landslides; biological hazards such as epidemics and outbreaks; and human-related hazards such as wars, pollution, and terrorism.
4. **Hacking:** Hacking is considered one of the cybercrimes governed by the United Nations Convention against Crime, which obligates countries to confront it, track offenders, and impose penalties on them, with the state bearing full international legal responsibility. It refers to the intentional attempt to illegally access any website, system, information network, or information technology resource, either partially or completely, as well as unauthorized access beyond permitted limits while being aware of it.

Suitability of Cloud Accounting for Companies

There are many institutions and companies for which cloud accounting is suitable. These include companies with limited or modest budgets, as accounting software offered through cloud systems is less costly compared to traditional systems.

It is also suitable for companies engaged in commercial activities that include employees working remotely, as well as small-sized companies that do not provide sufficient security. Cloud accounting systems are capable of storing information securely. In addition, it is appropriate for organizations that wish to avoid potential risks and incidents such as theft and floods.

On the other hand, there are several organizations that consider cloud accounting unsuitable for their needs. These include institutions that handle highly sensitive data and do not wish third parties to access it, such as banks. It is also considered unsuitable for organizations with uncertain future operations, as cloud accounting systems require service agreements, which impose contractual obligations. Moreover, institutions that prefer to maintain full control over their accounting data may find cloud accounting systems inappropriate for their needs.

Chapter Three: The Relationship Between Artificial Intelligence and Reducing Cloud Accounting Risks

Introduction

Artificial intelligence (AI) technology has created a significant revolution in the field of information technology. AI is a subfield of computer science that involves the creation of intelligent machines and systems that operate and interact in a human-like manner.

Regarding financial data in particular, AI technology has brought major changes to all accounting functions, with significant improvements in quality and efficiency, while simultaneously protecting data from fraud and errors and ensuring the accuracy of accounting information. While manual data entry and comparison takes a lot of time, using modern technology, it is now possible to scan and process a lot of data using automatic scanning or voice input. This also saves time and manpower efforts in

accounting processes and helps to achieve more efficient and effective outputs. Besides, technology helps to automate various activities. AI is also playing a crucial role in aiding economic decision making.

It has also been applied to the field of forecasting market trends in the stock market, for it is able to deal intelligently with vast quantities of financial information, and to generate rapid and precise reports. It is very useful in the economics and accounting sector as it is very efficient. It also has the ability to build decision-support systems and store large amounts of financial data for later use in similar cases. Furthermore, it is used in industrial applications for production management, quality control, product design, and predicting economic variables that affect the economic environment of organizations.

Companies can easily develop by adopting cloud accounting and adapting to the dynamic and continuously challenging economic environment. Cloud accounting helps companies scale their financial applications according to service needs or workload. It also assists users in performing repetitive tasks automatically, improving workflow efficiency.

Cloud accounting is characterized by simplicity in design and usability, allowing its applications to be used by financial experts such as auditors and accountants, as well as non-financial professionals such as business owners and business partners. Cloud service providers usually offer a trial version of cloud accounting services so that users can evaluate whether the model is suitable before committing to a long-term contract.

Cloud accounting also enables communication between authorized users accessing financial information accurately and simultaneously, even across different geographical locations. It significantly contributes to improving financial visibility and allows timely intervention when necessary.

Artificial Intelligence and Reducing Cloud Accounting Risks:

Cloud computing has demonstrated its importance in the field of accounting. Cloud accounting relies on cloud computing, and by using a service-based model, companies are able to access their financial data via the internet through a web browser. Accountants and business owners can collaborate and share financial data in a paperless environment, regardless of their physical location, as a tool for improving accounting practices, professional performance, and business efficiency.

In this context, accounting firms place great emphasis on data security in key areas, including risks of intellectual property theft, data loss, privacy risks, general security risks, system availability, business continuity, and compliance with legal regulations. Some consider that simply transferring information through internet-based systems increases vulnerabilities, as some users may intentionally or unintentionally breach the cloud system and access sensitive data.

Artificial intelligence has been introduced into the accounting industry to improve the efficiency and effectiveness of accounting activities and to facilitate access to information through electronic and computerized administrative services. As a result, external users are able to perform transactions more easily, including settlement processes, tax payments, insurance payments, and others. Traditional tasks have become easier to perform.

It can be said that artificial intelligence will create a promising future for the accounting industry. One of its most important characteristics is that it mimics human problem-solving methods when dealing with complex issues. It is characterized by parallel processing, high accuracy, rapid reception and processing of hypotheses, the ability to find solutions to problems, and the ability to handle non-numerical data such as symbolic characters [24], [25], [26].

Chapter Four: Applied Aspect and Statistical Analysis of the Questionnaire

First: Introduction

This chapter addresses the applied framework of the study titled *"The Role of Artificial Intelligence in Reducing the Risks of Cloud Accounting."* The field study was completed using a questionnaire distributed to a sample of (40) individuals specializing in Iraqi industrial

companies. The questionnaire data were analyzed using IBM SPSS Statistics v.27, which is one of the most commonly used statistical programs in administrative and accounting research. This was done in order to test the main hypothesis of the study and measure the strength of the relationship and the magnitude of the effect between the independent variable (Artificial Intelligence) and the dependent variable (Reducing Cloud Accounting Risks).

The study is based on a main hypothesis stating that *"There is a statistically significant effect of artificial intelligence in reducing cloud accounting risks in industrial companies."* A five-point Likert scale was used in formulating the questionnaire items, where level (1) represents "Strongly Disagree" and level (5) represents "Strongly Agree."

A traditional statistical analysis method that is often employed in administrative research was used to scientifically validate the data and respond to the research question. In this approach, the sample's description, validity and reliability testing, descriptive statistics for the questionnaire items and the average of the questionnaire items were carried out and then the correlation relationship between variables was performed and then the effect was measured using simple linear regression analysis to determine the validity of the main hypothesis.

Second: Demographic Analysis of the Study Sample

Personal and occupational details of the respondents were presented using descriptive statistics in the form of frequencies and percentages for the following characteristics: gender, age, academic qualification, years of experience, job title and familiarity with artificial intelligence applications. The results of this analysis are shown in Table (1).

Table 1. Frequency Distribution of the Demographic Characteristics of the Study Sample (n = 40)

Variable	Category	Frequency	Percentage (%)
Gender	Male	28	70.0
	Female	12	30.0
Age	20 years and below	5	12.5
	21–30 years	12	30.0
	31–40 years	15	37.5
	41 years and above	8	20.0
Academic Qualification	Diploma	4	10.0
	Bachelor's degree	14	35.0
	Master's degree	14	35.0
	PhD	8	20.0
Years of Experience	5 years and below	6	15.0
	6–10 years	14	35.0
	11–15 years	12	30.0
	16 years and above	8	20.0
Job Title	University Professor	8	20.0
	Financial/Administrative Employee	18	45.0
	IT Specialist	10	25.0
	Other	4	10.0
Familiarity with AI	Weak	3	7.5
	Moderate	15	37.5
	Good	16	40.0
	Expert	6	15.0

Source: Prepared by the researcher based on SPSS v.27

Table (1) shows that the vast majority of the study sample were male (70.0%) and females (30.0%). This distribution corresponds with financial and technical positions in the industrial sector in Iraq. On the age front, it was predominantly in the two highest professional working age groups (21-40 years), accounting for (67.5%) which means that most respondents are active in operating and managing cloud accounting systems.

Academic qualification of the respondents shows that master's and doctoral degrees combined account for (55.0%) of the respondents therefore, the respondents have sufficient academic background to give questionnaire responses a good depth of academic qualifications, thereby enhancing the reliability of the responses. Moreover, the percentage of respondents who had over six years' experience went up to (85.0%) and those who described their current Artificial Intelligence knowledge at "Good" and "Expert" level were (55.0%). This means that it shows that the sample has both practical experience and technical competence, thus increasing the credibility of the results of the study in the scope of the study.

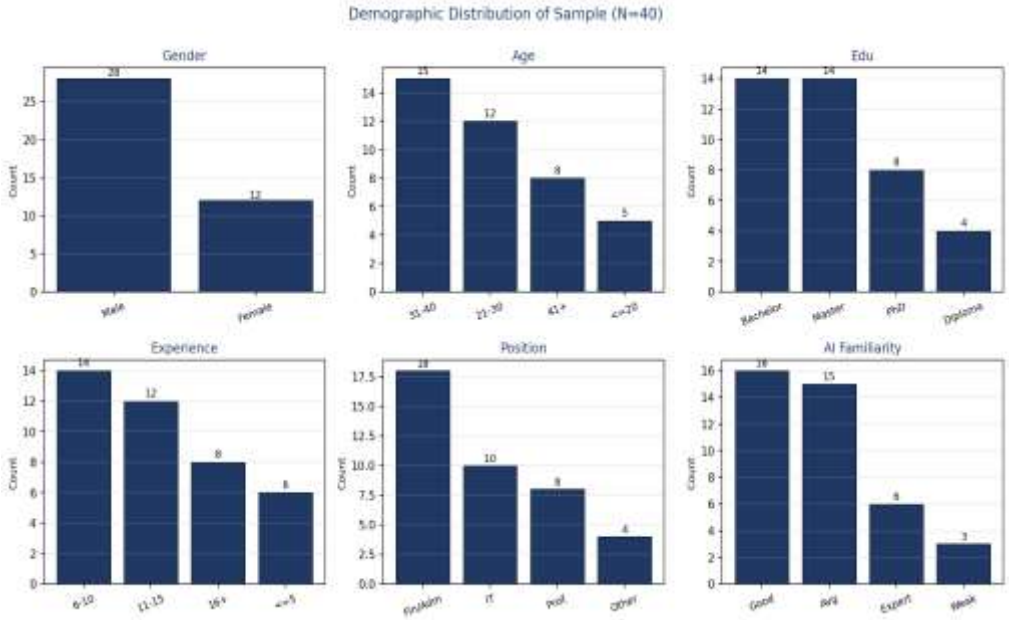

Figure 1. Graphical Distribution of the Demographic Characteristics of the Study Sample

Source: Prepared by the researcher based on SPSS v.27

Third: Validity and Reliability Testing of the Study Instrument

To check the validity of the measure instrument was used Cronbach's Alpha coefficient which is one of the most widely used reliability coefficients in the questionnaire analysis. It assesses the consistency within items on each dimension.

Below 0.60: weak reliability; 0.60–0.70: acceptable reliability; 0.70–0.80: good reliability; 0.80–0.90: very good reliability; 0.90 and above: excellent reliability. The results of this test are given in Table (2).

Table 2. Results of Reliability Testing Using Cronbach's Alpha Coefficient for the Questionnaire Dimensions

Dimension	Number of Items	α Value	Reliability Judgment
First Dimension: Enhancing Cloud Data Security	3	0.784	Good
Second Dimension: Reducing Human and Technical Errors	3	0.904	Excellent

Third Dimension: Reducing Financial Fraud Risks	3	0.501	Weak
Overall Questionnaire (9 Items)	9	0.920	Excellent

Source: Prepared by the researcher based on SPSS v.27

As shown in Table (2), the overall Cronbach's Alpha coefficient for the questionnaire was (0.920) and according to the adopted criteria, it is considered "excellent". This means that there is a very high internal consistency among items in the questionnaire, and that it is completely appropriate for further statistical analysis.

The first dimension obtained a value of (0.784) which was categorized as "good," and the second dimension a value of (0.904), which was categorized as "excellent." The third dimension, however, gave a value (0.501), which is in the "weak" range.

The relative lack of value of the third dimension may be explained by the fact that there were only a small number of items (three items) and that the items were measuring different aspects of fraud detection (pattern analysis, real-time analysis and continuous monitoring). This results in some differences of opinion about how much respondents approve, but not a great deal.

But this observation does not compromise the overall reliability of the instrument because the overall reliability value (0.920) is greater than all recommended values in statistical literature. Furthermore, the first and second dimensions have a good to excellent reliability. Based on this, the questionnaire is considered to fulfill all the requirements of using it in achieving the study objectives, taking into account the methodological caution in interpreting the results of the third dimension separately.

Fourth: Descriptive Analysis of the Questionnaire Items

Means, standard deviations, agreement rates and ranking of items within dimensions were computed to analyze the tendencies toward the items in the questionnaire. Arithmetic mean was interpreted based on the following statistical criteria: very low (1.00 - 1.80); low (1.81 - 2.60); moderate (2.61 - 3.40); high (3.41 - 4.20); and very high (4.21 - 5.00).

They will explore how artificial intelligence can bolster cloud data security, highlighting the opportunities and the challenges it presents. They will examine how AI can be used to improve cloud data security and the challenges and opportunities it poses.

The descriptive analysis findings of the items from the first dimension, which is related to the contribution of AI to improve the security of cloud data in industrial companies, are summarized in Table (3).

Table 3. Descriptive Analysis of the Items of the Dimension of Enhancing Cloud Data Security

S	Item Statement	Mean	Standard Deviation	Level	Rank
1	Artificial intelligence algorithms contribute to the early detection of hacking attempts in cloud accounting systems.	4.425	0.747	**Very High**	2
2	Smart encryption supported by artificial intelligence helps protect financial data from leakage.	4.350	0.770	**Very High**	3
3	AI-powered biometric authentication reduces the risk of unauthorized access.	4.500	0.716	**Very High**	1
—	Overall Mean of the First Dimension	4.425	0.622	**Very High**	—

Source: Prepared by the researcher based on SPSS v.27

Table (3) shows that all the items of the first dimension are in the "very high" range with means between (4.350–4.500) out of 5 and the standard deviations are small and do not exceed (0.770). This suggests an agreement among the study sample about the positive impact of AI in accounting system's cloud security.

The first place was taken by the item on "AI-supported biometric authentication," and had the mean (4.500) of the respondents' confidence in the capacity of this technology to control accounts access, which is one of the most modern and dependable security measures.

The second rank was the one that included the question on "early detection of hacking attempts" with a mean of (4.425) indicating that most of the general perception is that deep learning algorithms can detect suspicious activities in real time. The third rank was for "smart encryption," having a mean of (4.350).

Overall, the general mean (4.425) of the dimension reached with a standard deviation (0.622) was in the "very high" range. This lends credibility to the fact that the research participants feel the security aspect of AI and also acknowledge it.

Second Dimension: The Role of Artificial Intelligence in Reducing Human and Technical Errors

Table (4) presents the results of the descriptive analysis of the items of the second dimension, which measures the role of artificial intelligence in reducing human and technical errors in the cloud accounting environment.

Table 4. Descriptive Analysis of the Items of the Dimension of Reducing Human and Technical Errors

S	Item Statement	Mean	Standard Deviation	Level	Rank
1	Smart automation contributes to reducing manual data entry errors in financial data on the cloud.	4.375	0.774	Very High	2
2	Artificial intelligence helps in handling unexpected system outages by predicting failures before they occur.	4.300	0.823	Very High	3
3	Artificial intelligence ensures that cloud data automatically complies with accounting standards.	4.450	0.749	Very High	1
—	Overall Mean of the Second Dimension	4.375	0.717	Very High	—

Source: Prepared by the researcher based on SPSS v.27

Table (4) shows that all the items of the second dimension are at the "very high" level, as the means range between (4.300-4.450). The third statement of "ensuring automatic compliance of data with accounting standards" was the highest ranked statement with a mean of (4.450). This indicates that accountants and auditors have a clear understanding that AI has a fundamental role to play in the automatic application of international accounting standards, which helps minimise the risk of accounting information being affected by human bias in measurement and disclosure and improves information quality.

The second rank was given to the item related to "smart automation in reducing manual data entry errors", with a mean of (4.375), which means that the sample recognizes that the use of robotic process automation technologies together with artificial intelligence has a positive impact on reducing errors in operation that are caused by manual data entry.

The third rank was the item "predicting system failures before they occur" with mean (4.300) and the highest standard deviation in the dimension (0.823). This means that there was a relative difference in the maturity of predictive maintenance applications, among the respondents, in Iraqi industrial companies.

The overall level was 4.375 with a standard deviation of 0.717, highlighting the strong perceptual effectiveness of artificial intelligence in minimizing operational mistakes at the overall level.

Third Dimension: The Role of Artificial Intelligence in Reducing Financial Fraud Risks

Table (5) presents the results of the descriptive analysis of the items of the third dimension, which measures the role of artificial intelligence in reducing electronic financial fraud risks.

Table 5. Descriptive Analysis of the Items of the Dimension of Reducing Financial Fraud Risks

S	Item Statement	Mean	Standard Deviation	Level	Rank
1	Artificial intelligence systems have a high capability to analyze abnormal patterns and detect fraud.	4.350	0.770	Very High	3
2	Real-time analysis of cloud data reduces opportunities for manipulation in financial reports.	4.425	0.747	Very High	1
3	Machine learning technologies provide continuous monitoring that exceeds the capabilities of traditional human auditing in the cloud environment.	4.400	0.744	Very High	2
—	Overall mean of the third dimension	4.392	0.533	Very High	—

Source: Prepared by the researcher based on SPSS v.27

Table (5) shows that all items of the third dimension indicate a "very high" level of performance on average with scores between (4.350–4.425). The item on "real-time cloud data analysis" was rated as a mean of (4.425) that suggests that respondents understand that real-time analysis with the aid of AI is the most significant line of defense against manipulation of financial reports because it shrinks the time gap between the occurrence of suspicious events and their detection.

Overall, the general mean of the dimension was (4.392) with a standard deviation of (0.533), which reflects a moderate consensus within the sample on how they think AI can help prevent financial fraud, although there is lower internal consistency of the items than in the other dimensions due to methodological reasons explained above in the reliability section. It is also observed that this result is in line with the trend of the modern accounting information systems governance that emphasizes early tools for the detection of fraud, which in practice support the sub-hypothesis of this dimension.

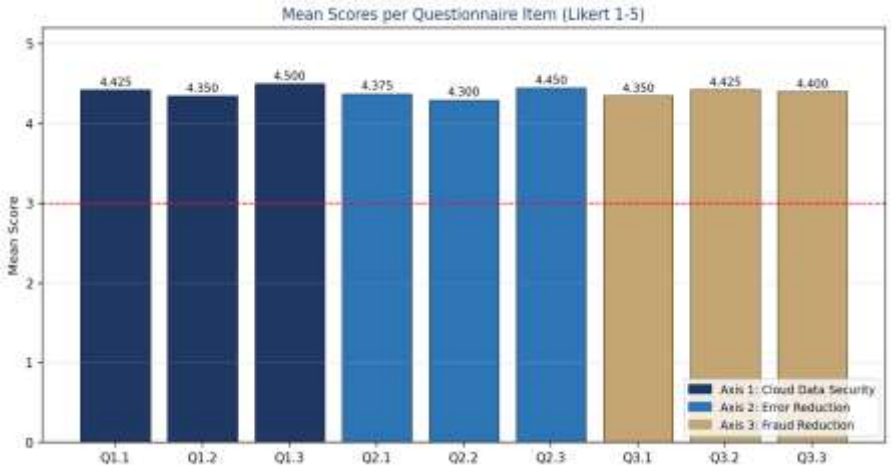

Figure 2. Arithmetic Means of the Questionnaire Items Distributed Across the Three Dimensions
Source: Prepared by the researcher based on SPSS v.27

3. Result

Overall Means of the Study Dimensions

After reviewing the items of each dimension separately, Table (6) presents a summary of the overall means and standard deviations for all study dimensions, along with the relative importance and the overall level of agreement.

Table 6. Overall Means of the Study Dimensions and Evaluation of Aggregate Levels

Dimension	Mean	Standard Deviation	Relative Importance (%)	Level
Axis One: Enhancing Cloud Data Security	4.425	0.622	88.50	Very High
Axis Two: Reducing Human and Technical Errors	4.375	0.717	87.50	Very High
Axis Three: Reducing Financial Fraud Risks	4.392	0.533	87.83	Very High
The Overall Variable (Artificial Intelligence and Its Three Dimensions)	4.397	0.593	87.94	Very High

Source: Prepared by the researcher based on SPSS 27.

The results in Table (6) show that all axes achieved a **"very high"** level, with means ranging between (4.375–4.425). The relative importance of the overall variable reached (87.94%), reflecting strong consensus among the study sample that artificial intelligence is an effective tool in reducing cloud accounting risks in Iraqi industrial companies. The **cloud data security** axis ranked first at (88.50%), followed by the **fraud prevention** axis at (87.83%), and then the **reduction of operational errors** axis at (87.50%). This ranking is logical within the Iraqi industrial environment, where employees prioritize the protection of sensitive data, followed by combating financial manipulation, and then operational efficiency.

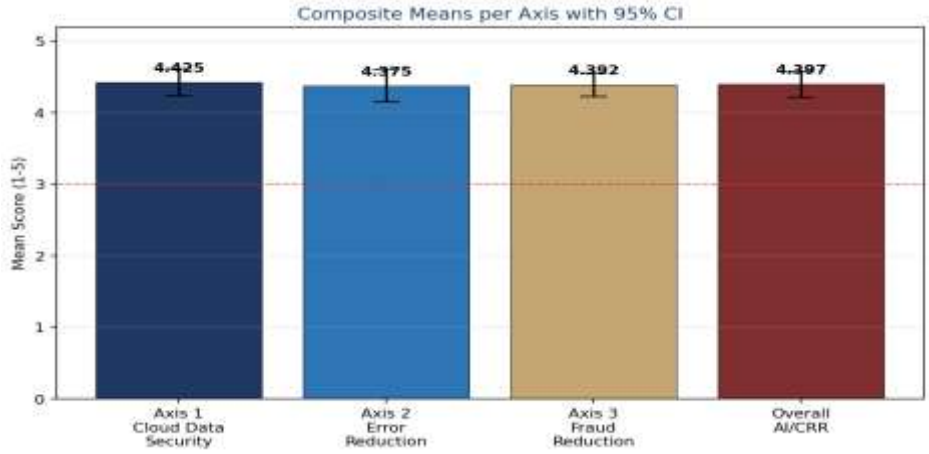

Figure 3. Overall Means of the Study Axes with 95% Confidence Intervals
Source: Prepared by the researcher based on SPSS 27.

Fifth: Testing the Correlational Relationship Between the Study Variables

To examine the nature of the relationship between the independent variable (Artificial Intelligence) and the dependent variable (reducing cloud accounting risks) and its three dimensions, the **Pearson correlation coefficient** was used, as it is one of the most appropriate statistical tools for measuring the strength and direction of the linear relationship between two continuous quantitative variables. The independent variable was calculated in a composite form representing the applied dimension of artificial intelligence within the cloud security infrastructure, while the composite dependent variable represents the outcomes of reducing operational and financial risks. Table (7) presents the results of this test.

Table 7. Results of the Pearson Correlation Test Between Artificial Intelligence and the Dimensions of Reducing Cloud Accounting Risks

Independent Variable	Dependent Variable	R	Sig.	Type of Relationship	Decision
Artificial Intelligence	Enhancing Data Security	0.971	0.000	Very strong positive relationship	Significant at 0.01 level
Artificial Intelligence	Error Reduction	0.952	0.000	Very strong positive relationship	Significant at 0.01 level
Artificial Intelligence	Fraud Reduction	0.925	0.000	Very strong positive relationship	Significant at 0.01 level
Artificial Intelligence	Overall Risk Reduction	0.934	0.000	Very strong positive relationship	Significant at 0.01 level

Source: Prepared by the researcher based on SPSS 27.

The result of the correlation analysis between artificial intelligence and the dependent variable (as shown in Table (7)) shows a very strong positive correlation and statistically significant in all three dimensions. The Pearson correlation coefficient with the overall dependent variable was (R = 0.934) with a significance level (Sig. = 0.000) which is less than (0.01). The more AI is used in the cloud accounting model, the more systematic the improvement in reducing the risks involved.

The dimensions' strength of relationships are ranked as: enhancing cloud data security (0.971), reducing human and technical errors (0.952), and reducing financial fraud

risks (0.925). This logical progression mirrors the evolution of the impact of the security infrastructure core, to operational efficiency, and finally fraud prevention.

All values of Sig. are below (0.01) which indicates a statistical significance at the 99% confidence limit. This confirms the main hypothesis of the study that both variables are related and serves as a basis for being able to measure the strength of the relationship between both variables by using simple linear regression in the next step.

Figure 4. Pearson Correlation Matrix Between Variables and Dimensions
Source: Prepared by the researcher based on SPSS 27.

Sixth: Testing the Effect of Artificial Intelligence on Reducing Cloud Accounting Risks

To measure the direct effect of the independent variable (Artificial Intelligence) on the dependent variable (Reducing Cloud Accounting Risks), simple linear regression analysis was used using the Ordinary Least Squares (OLS) method. The statistical software produced three standard tables: Model Summary, ANOVA, and Coefficients. The following presents a detailed explanation and interpretation of each table's results.

Model Summary Table

Table 8. Summary of the Simple Linear Regression Model

Model	R	R^2	Adjusted R^2	Standard Error of the Estimate
1	0.934	0.873	0.869	0.214

Source: Prepared by the researcher based on SPSS 27.

Table (8) shows that the correlation coefficient reached (R = 0.934), which is a very high value indicating a strong and direct relationship between the independent and dependent variables. The coefficient of determination (R^2 = 0.873) indicates that artificial intelligence explains (87.3%) of the total variance in reducing cloud accounting risks, while the remaining (12.7%) is explained by other variables not included in the model, such as organizational culture, adequacy of cloud infrastructure, and information technology governance. This high value reflects the strong explanatory power of the model.

The adjusted coefficient of determination (Adjusted R^2 = 0.869) is very close to the value of R^2, indicating model stability, independence from degrees of freedom, and suitability for generalization to the study population.

ANOVA Table

Table 9. ANOVA for Testing the Significance of the Model

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Regression	11.934	1	11.934	260.090	0.000
Residuals	1.744	38	0.046	—	—
Total	13.678	39	—	—	—

Source: Prepared by the researcher based on SPSS 27.

The results in Table (9) indicate that the calculated F-statistic reached (F = 260.090) at a significance level (Sig. = 0.000), which is a very high and statistically significant value at a 99% confidence level. This confirms that the estimated model is statistically significant as a whole, and that the observed relationship between the variables is not due to chance, but rather reflects a real structural relationship within the sample data.

The regression sum of squares (11.934) is much higher than the residual sum of squares (1.744), and this substantial difference in favor of the regression indicates the model's strong ability to explain a large proportion of the variance in the dependent variable. This supports the acceptance of the regression coefficients presented in the following table.

Regression Coefficients Table

Table 10. Regression Coefficients (T) for Testing the Significance of the Parameters

Variable	B	Std. Error	Beta	T	Sig.
Constant	0.451	0.246	—	1.830	0.075
Artificial Intelligence	0.889	0.055	0.934	16.127	0.000

Source: Prepared by the researcher based on SPSS 27.

Table (10) shows that the unstandardized regression coefficient of the independent variable reached (B = 0.889) with a high level of statistical significance (Sig. = 0.000) and a T-value of (T = 16.127). This indicates that an increase of one unit in the use of artificial intelligence on the five-point Likert scale leads to an increase of (0.889) units in the ability to reduce cloud accounting risks, assuming other factors remain constant.

In addition, the standardized coefficient (Beta) reached (0.934), which is a very high value confirming that artificial intelligence represents the main driving force of the dependent variable, and that its standardized effect is strong and statistically significant.

Accordingly, the estimated regression equation can be formulated as follows:

$$\mathbf{Y = 0.451 + 0.889\ X}$$

Where (Y) represents the ability to reduce cloud accounting risks, and (X) represents the level of artificial intelligence utilization. Practically, this equation means that for every one-unit increase in artificial intelligence usage on the Likert scale, the ability to reduce cloud accounting risks increases by (0.889) units.

Although the constant term (0.451) was statistically insignificant (Sig. = 0.075), being slightly above (0.05), this is acceptable in explanatory models dominated by a single independent variable. It indicates that the dependent variable has little meaningful value in the absence of the independent variable, which supports the view that artificial intelligence is the core driver in reducing risks.

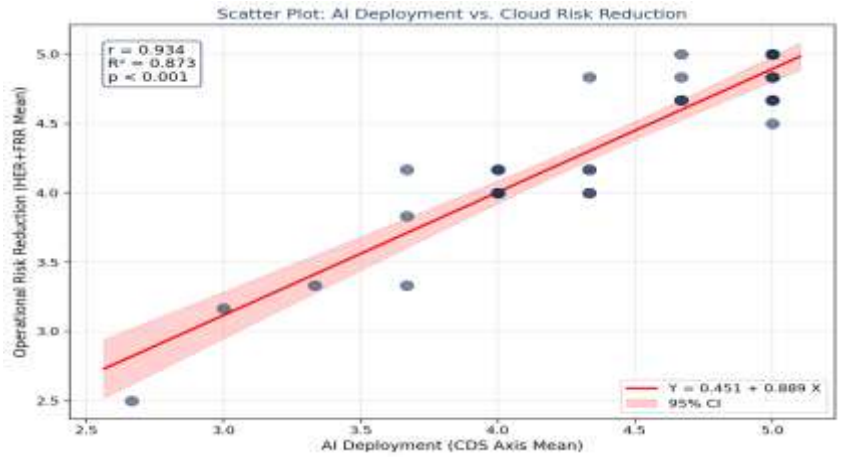

Figure 5. Scatter Plot of the Relationship Between Artificial Intelligence and Reducing Cloud Accounting Risks
Source: Prepared by the researcher based on SPSS 27.

It is observed from Figure (5) that the data points are consistently clustered around the estimated regression line, indicating a strong linear relationship between the variables. This also demonstrates that the estimated model has a high predictive capability based on the values of the independent variable.

Seventh: Testing the Research Hypothesis

In light of the previous results, the main research hypothesis can be decisively tested. Table (11) summarizes the outcome of this test.

Table 11. Results of Testing the Main Hypothesis of the Study

Hypothesis Statement	Test	Sig.	Decision	Result
There is a statistically significant effect of artificial intelligence on reducing cloud accounting risks in industrial companies.	Pearson and Regression	0.000	Rejection of the null hypothesis	Acceptance of the hypothesis

Source: Prepared by the researcher based on SPSS 27.

It is evident from Table (11) that all statistical tests produced a significant level (Sig. = 0.000), which is lower than the adopted significance level (0.01). The correlation coefficient reached (R = 0.934), the coefficient of determination (R^2 = 0.873), the F-value (F = 260.090), the unstandardized regression coefficient (B = 0.889), the standardized coefficient (Beta = 0.934), and the T-value (T = 16.127).

Accordingly, the main research hypothesis is accepted, which states: "There is a statistically significant effect of artificial intelligence on reducing cloud accounting risks in industrial companies," and the corresponding null hypothesis is rejected. This decision provides strong evidence that the use of artificial intelligence is not merely a technological luxury but a strategic necessity for enhancing accounting management efficiency in cloud environments.

4. Discussion

Summary of Statistical Analysis Results

The main results of the statistical analysis can be summarized as follows. At the level of descriptive statistics, the overall mean of the independent variable (Artificial Intelligence) reached (4.397) with a standard deviation of (0.593) and a relative importance of (87.94%). The dependent variable (Reducing Cloud Accounting Risks) achieved the same evaluation level, with both variables falling within the category of "very high,"

indicating a strong consensus among the study sample regarding the effectiveness of artificial intelligence in processing cloud-based accounting data.

Regarding the reliability of the instrument, the Cronbach's Alpha coefficient for the overall questionnaire reached (0.920), which is considered "excellent" and confirms its suitability for inferential statistical analysis. In terms of the correlation analysis, Pearson's test showed a very strong positive relationship between the two variables (R = 0.934) with a significance level (Sig. = 0.000) below (0.01), indicating that increased use of artificial intelligence is positively associated with enhanced risk reduction capability.

Regarding the effect analysis, simple linear regression indicated that artificial intelligence explains (87.3%) of the variance in the dependent variable, with a strong effect size (B = 0.889), (Beta = 0.934), (F = 260.09), and (Sig. = 0.000). Accordingly, the main hypothesis of the study was accepted, while the null hypothesis was rejected.

These findings carry important practical implications for Iraqi industrial companies, as intelligent applications represent a strategic lever for strengthening three core pillars: first, cloud data cybersecurity through intrusion detection algorithms, intelligent encryption, and biometric authentication; second, operational efficiency through smart automation, automatic accounting compliance, and predictive maintenance; and third, financial integrity through real-time data analysis and continuous AI-driven monitoring. The widespread adoption of these applications can significantly reduce risks related to data loss, electronic fraud, and operational errors, while improving the quality of disclosed accounting information in financial reports, thereby enhancing investor and regulatory confidence in the Iraqi industrial environment.

5. Conclusions

1. There is a role of artificial intelligence in enhancing cloud data security through AI algorithms that contribute to detecting intrusion attempts.
2. Artificial intelligence plays a role in reducing human and technical errors through the use of intelligent automation and handling unexpected system events.
3. Artificial intelligence has a positive role in reducing financial and electronic fraud risks, as AI systems have a high capability to identify abnormal patterns in financial transactions and detect fraud.

Recommendations:

1. Use artificial intelligence applications through predictive algorithms and intelligent automation.
2. Employ artificial intelligence applications to reduce human errors in the field of cloud accounting.
3. Utilize artificial intelligence to reduce financial and electronic fraud.
4. Enroll accountants in training programs to develop skills in using artificial intelligence applications in accounting to reduce cloud accounting risks.

References

[1] R. Jones and B. Shaw, "Thinking locally, acting globally? Stakeholder conflicts over UNESCO World Heritage inscription in Western Australia," 2012.

[2] T. Khanom, "Cloud accounting: A theoretical overview," *IOSR Journal of Business and Management*, vol. 19, no. 6, pp. 233–250, 2017.

[3] O. Dimitriu and M. Matei, "Cloud accounting: A new business model in a challenging context," *Procedia Economics and Finance*, vol. 32, pp. 665–671, 2015.

[4] S. Sankar, "The cloud nine method in GST accounting with optimistic approach," *Nolegein Journal of Financial Planning and Management*, pp. 29–32, 2019.

[5] A. Abdul Wahid, "Cloud audit: The contemporary millennium model for auditing accounting information systems," *Tikrit Journal of Administration and Economic Sciences*, vol. 4, no. 44, 2018.

[6] B. H. Alahmadi, "Interface design theories of foreign language multimedia software: A hyper model of cognitive and software engineering approach," *International Journal of Innovation, Management and Technology*, vol. 3, no. 3, 2012.

[7] S. S. Mchbis and S. H. Hashim, "Proposed network intrusion detection system based on fuzzy mean algorithm in cloud computing environment," *Journal of University of Babylon for Pure and Applied Sciences*, vol. 26, no. 2, 2018.

[8] M. A. Razzaq, H. M. Kashif, M. A. Qureshi, and S. Ullah, "A survey on user interfaces for interaction with human and machines," *International Journal of Advanced Computer Science and Applications*, vol. 8, no. 7, 2017.

[9] P. Agarwal, P. Yadav, S. Neclam, R. Upreti, and S. Sharma, "Research paper on artificial intelligence," *Case Studies Journal*, vol. 2, no. 6, 2013.

[10] I. Poola, "How artificial intelligence is impacting real life everyday," *International Journal for Advance Research and Development*, vol. 2, no. 10, 2017.

[11] E. Kh. Ali, Sh. A. Mazen, and E. E. Hassanein, "A proposed hybrid model for adopting cloud computing in e-government," *Future Computing and Informatics Journal*, vol. 3, pp. 286–295, 2018.

[12] I. Tuomi, "The Impact of Artificial Intelligence on Learning, Teaching, and Education," Publications Office of the European Union, Luxembourg, 2018.

[13] S. G. Yassin, *Management Information Systems*. Amman, Jordan: Al-Yazouri Publishing and Distribution, 2018.

[14] K. Najari and B. Rajam, "The reality of using cloud accounting in Mobilis Company," *Journal of Human Sciences*, vol. 9, no. 27, pp. 1–47, 2019.

[15] A. Musa, "Analysis of cloud computing technologies as an innovation in information technology and identifying requirements for activation and their role in improving financial reporting quality through enhancing qualitative characteristics of IFRS," *Scientific Journal of Studies*, vol. 2, pp. 12–23, 2019.

[16] G. Al-Qasaima, "The impact of artificial intelligence on accounting information characteristics: The moderating role of accounting systems efficiency in Jordanian commercial banks," Jordan, 2021.

[17] F. Aishaoui and N. Bakri, "The use of artificial intelligence applications in improving the performance of economic institutions," Algeria, 2021.

[18] J. Afifi, *Artificial Intelligence and Expert Systems*. Amman, Jordan: Amjad Publishing and Distribution, 2015.

[19] O. Al-Samadi, "The impact of internal control components according to the COSO model on reducing cloud accounting risks in public shareholding companies: The mediating role of ERP systems," Jordan, 2019.

[20] R. Shnabi, "Implementing railway transport development strategy in Algeria using intelligent transport systems as an application of artificial intelligence," *Journal of Financial and Accounting Studies*, vol. 7, p. 157, 2016.

[21] M. Al-Khalifi, *Cyber Intrusion as a Cross-Border Electronic Crime*. Doha, Qatar: College of Law, Qatar University, 2017.

[22] A. A. Jamil and H. O. Othman, "The possibility of using artificial intelligence techniques in internal audit quality control," in *Proceedings of the 11th Annual Scientific Conference: Business Intelligence and Knowledge Economy*, Amman, Jordan, 2012.

[23] H. Bowa, *Artificial Intelligence Applications Supporting Administrative Decision-Making in Business Organizations*. Berlin, Germany: Arab Democratic Center for Strategic, Political and Economic Studies, 2019.

[24] Ashhadat and Al-Khalifi, "The impact of COBIT information technology on reducing cloud accounting risks in telecommunications companies in Jordan," Amman, Jordan, 2019.

[25] M. Al-Asstal, M. Aql, and I. Al-Agha, "Developing a proposed model based on artificial intelligence and its effectiveness in developing programming skills among students of the University College of Science and Technology in Khan Younis," *Journal of the Islamic University for Educational and Psychological Studies*, vol. 29, no. 2, pp. 743–772, 2020.

[26] Y. Ahmed, "Factors influencing companies' orientation toward adopting cloud accounting: An applied study on joint-stock companies operating in the Kurdistan Region," *Journal of Arts, Literature, Humanities and Social Sciences*, no. 54, pp. 164–178, 2020.