The Impact of Artificial Intelligence Tools for Financial Risk Analysis and Accounting Decision-Making: Commercial Banks as A Model

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Abstract

The research aims to examine the impact of artificial intelligence tools on financial risk analysis and accounting decision-making in commercial banks. It investigates how these tools can enhance financial risk analysis, improve the accuracy of financial forecasts, and refine accounting decision-making processes. The study employs a descriptive analytical approach and utilizes a questionnaire method. The research sample includes managers, department heads, and accountants from Iraqi private commercial banks that are registered on the Iraqi stock market.

The study yielded several significant findings. Notably, it revealed a high impact of artificial intelligence tools on accounting decision-making. Additionally, there is a noted integration between artificial intelligence and accounting systems within these banks. The participants expressed strong agreement regarding the challenges and opportunities associated with the implementation of artificial intelligence in their operations.

Keywords: Artificial Intelligence (AI), Financial Risk, Accounting Decisions.

The Introduction:

In light of the rapid developments in the global economy and the continuous changes in the financial markets, financial institutions face increasing challenges related to managing financial risks and making sound accounting decisions, as financial risks are one of the essential elements that directly affect the stability of financial institutions, especially commercial banks, which are considered one of the main pillars of the modern economy, and this challenge requires advanced mechanisms to study risks accurately and analyze them in a way that allows making informed and effective accounting decisions. Over the decades, financial analysis methods have relied mainly on historical data and traditional statistical models, which may not be sufficient to keep pace with the constant changes in the business environment. As data grows and financial markets become more complex, the need for more sophisticated and intelligent analytical tools is needed than ever before.

Artificial intelligence (AI), especially machine learning and Big Data Analytics, allows the ability to process huge amounts of data and extract hidden patterns that are difficult for humans to notice.

Through the use of machine learning techniques, banks can develop accurate models to identify risks associated with loans, investments, and even operational risks.

In addition, AI provides tools that improve liquidity management, predict future market trends, and identify new business opportunities.

It also contributes to improving the accuracy of accounting decisions by improving the forecasting of income and expenses and the analysis of assets and liabilities more comprehensively. AI does not only affect financial risk analysis, but also affects accounting decision-making, as AI enhances accounting accuracy by automating many traditional processes, reducing human errors, and improving efficiency in handling financial data.

On the other hand, the use of artificial intelligence comes with challenges that cannot be overlooked, such as the need to develop specialized skills within financial institutions, the cost of investing in new technologies, and security and data protection issues. Moreover, this technology raises questions about its impact on human jobs, especially in areas such as accounting and financial management, but many studies indicate that artificial intelligence is not an alternative to humans, but rather an aid that enhances the ability of humans to make better strategic decisions.

The Problem of Research:

Commercial banks in the current era are witnessing major transformations as a result of the use of modern technologies in various aspects of their work, especially in the fields of financial risk analysis and accounting decision-making, and the most prominent of these technologies, artificial intelligence appears as an innovative tool that can contribute significantly to improving the effectiveness of these operations, through its ability to process and analyze huge amounts of data more accurately and quickly compared to traditional methods. However, the application of these instruments in the financial field remains multiple, These include the integration of these technologies with existing banking systems, the provision of human skills required to manage them, as well as the ethical and legal challenges related to the use of artificial intelligence in dealing with sensitive financial data. At the same time, artificial intelligence tools are expected to improve the accuracy of financial analysis, enhance the ability to predict potential risks, and facilitate strategic accounting decisions that contribute to improving the financial performance of commercial banks. With these potential benefits, several questions arise about the effectiveness of these tools in practical contexts:

- Can AI tools improve the ability to analyze financial risks more accurately and effectively in commercial banks?
- How can these tools contribute to improving accounting decision-making and reducing human errors in accounting processes?
- What are the challenges that commercial banks may face in adopting and applying artificial intelligence techniques in the field of financial risk analysis and accounting decision-making?
- To what extent can commercial banks adapt to these technologies in terms of infrastructure, human resources, and financial resources?

The Importance of Research:

The importance of the research lies in the fact that it sheds light on the role of artificial intelligence as a vital tool in improving financial risk management and accounting decision-making processes in commercial banks, and this study is of particular value in light of the increasing reliance on modern technologies to improve operational efficiency and reduce financial risks that may negatively affect the stability of the financial system. The study also provides practical insights for banks on how to

leverage AI to meet future challenges, enhancing the sustainability and stability of financial institutions. Through this study, we seek to provide a comprehensive analysis of the ways in which commercial banks can leverage artificial intelligence to improve their financial and accounting performance, enhance their ability to manage risks more accurately and effectively, and thus support the stability of the financial system in general.

The Research Objective:

The research aims to explore the impact of artificial intelligence tools in financial risk analysis and accounting decision-making in commercial banks, by examining how these tools can be used to improve financial risk analysis, increase the accuracy of financial forecasts, and enhance accounting decision-making processes.

The Research Methodology:

The descriptive analytical approach will be relied on to describe and analyze phenomena related to the use of artificial intelligence in commercial banks, and also, the inductive approach will be used to infer general patterns through the analysis of data and observations extracted, and this approach depends on collecting data through surveys or interviews with experts and officials in banks, as well as analyzing the results of applying artificial intelligence techniques in this field, which helps in building conclusions about the impact of these tools in improving financial operations. On the other hand, the research will include the use of the quantitative approach to analyze digital data related to the application of artificial intelligence in financial risk analysis and accounting decision-making.

The Theoretical Framework:

The First Topic: Artificial Intelligence:

Artificial Intelligence (AI) is a branch of computer science that aims to develop systems and software that can simulate human mental abilities such as learning, thinking, interpreting, and making decisions; artificial intelligence allows machines and software to perform tasks that previously required human intelligence such as pattern recognition, linguistic comprehension, and decision-making in undefined or ambiguous environments (Sreseli, 2023).

There are many definitions of artificial intelligence based on the different areas in which it is applied,

Some define artificial intelligence as the ability of software systems or electronic devices to simulate human thinking and perform complex tasks that usually require human ability such as learning, reasoning, and decision-making. This includes the use of advanced algorithms to analyze data and interact with the environment (Ok-hue Cho, 2024).

Artificial intelligence is defined by the ability of systems or machines to process data and perform tasks based on learning from previous experiences, and depends mainly on techniques such as machine learning and deep learning, which are branches of artificial intelligence that deal with how machines learn from big data without the need for direct human intervention (Bhat, 2024)

AI can also be defined as simulation of human intelligence, focusing on the ability of machines to make autonomous decisions based on complex information processing, and without direct human intervention. In this context, AI is part of the human quest to understand and develop mental and mental abilities (Yang, 2022).

Artificial intelligence can be briefly defined as a set of technologies and systems that aim to enable machines to perform tasks that normally require human intelligence, such as learning, understanding, making decisions, and interacting with the

environment in flexible and accurate ways. AI encompasses multiple applications in fields as diverse as healthcare, education, banking, and commerce, reflecting its versatile nature and its potential to bring about radical changes in many industries.

The development of artificial intelligence (AI) has witnessed multiple stages starting with its theoretical idea in the mid-twentieth century; in the beginning, artificial intelligence was just an academic idea related to simulating human intelligence, as scientists such as Alan Turing were putting forward concepts such as the Turing test to measure the ability of machines to simulate human thinking, and in that period, the systems that were developed were very primitive, relying mainly on fixed rules and specific commands. As time progressed, in the sixties and seventies, artificial intelligence began to evolve through the use of expert systems that rely on a set of fixed rules to solve problems. This development was limited in its capabilities, as the systems were limited to specific areas and did not have the ability to learn from experiences. In the eighties, the focus began on machine learning, a type of artificial intelligence that allows machines to learn from data and improve their performance based on previous experiences, and this transition to learning from data allowed a remarkable development in artificial intelligence applications.

As neural networks evolved, machines began to become better able to recognize complex patterns in data (Jejeniwa, *et al*, 2024).

In the nineties, the concept of deep learning, which relies on multi-layered neural networks, was introduced, enabling machines to handle complex data such as images, video and voice, and this led to great leaps in applications such as voice and image recognition, making artificial intelligence enter new areas such as healthcare, finance and autonomous driving. In the last two decades, with the advent of big data and advances in computing, artificial intelligence has become more sophisticated and capable of predictive analysis and independent decision-making, and today, artificial intelligence has become an essential part in many industries, such as commercial banks, where it is used to analyze financial risks, detect fraudulent activities, and improve overall performance through big data analysis. This rapid development in artificial intelligence promises a more integrated future, where artificial intelligence will be able to provide more accurate solutions in many areas, It enhances human capacity to make more informed decisions in complex and ever-changing environments (Adeyelu, *et al,* 2024).

The Second Topic: Financial Risks and Accounting Decision-Making:

Financial risk is defined as the possibility of unexpected losses or fluctuations in financial returns as a result of changes in economic or market factors, and financial risks can be considered threats that affect the financial stability of institutions and individuals alike, and therefore understanding and managing them is vital to reduce their negative effects, and over time, financial risk management has become a vital process aimed at identifying and assessing potential risks and taking the necessary measures to minimize their effects (Sreseli, 2023).

Among the most prominent types of financial risks that institutions may face are market risks, which are related to price fluctuations in financial markets such as stocks, bonds and currencies, as these fluctuations significantly affect the stability of investors' financial returns. Credit risk is another type of risk, as it relates to the ability of individuals or institutions to meet their financial obligations, such as customer default. Operational risks relate to internal problems that may occur in the day-to-day operations of the organization, such as human errors or technological failures that affect the workflow. In addition, there are legal and regulatory risks that arise due to

changes in government laws and policies, which may affect the financial activities of the institution. Finally, liquidity risks exist that relate to an organization's inability to meet its short-term financial needs due to lack of liquidity or inability to sell assets quickly (Khan, *et al,* 2024).

Financial risk management is essential for the stability of organizations, as it contributes to more informed decision-making to minimize the negative effects of these risks, and organizations can develop effective strategies to deal with them by identifying, analyzing, and assessing the likelihood of their occurrence and potential impact. This management also contributes to improving overall performance and facilitating future decision-making (Ok-hue Cho, 2024).

As for making accounting decisions, it is related to determining the financial procedures that must be taken based on the available financial information, as these decisions are pivotal in financial planning processes, such as investment, financing, and distribution decisions, and in the field of investment, decisions are made that determine the appropriate investment opportunities that bring the best financial returns to the company. Financing decisions are about identifying the optimal sources of funds to support an organization's operations, whether through loans or through capital. Distribution strategies are also determined to determine how dividends can be distributed among shareholders or reinvested in the company to support future growth. In addition, pricing decisions play an important role in determining the prices of products and services based on costs and target profits (Yang, 2022).

Today, artificial intelligence has become an essential tool in improving financial risk management and accounting decision-making, and using techniques such as machine learning and predictive analysis, it is possible to analyze financial data more accurately and more quickly, allowing organizations to make more informed decisions. For example, AI can improve credit risk assessment by analyzing customers' payment behaviors and credit history, helping banks make more accurate decisions about granting loans. AI can also analyze market risks and predict future trends of financial markets using predictive models (Adeyelu, *et al*, 2024).

In terms of accounting decisions, artificial intelligence can contribute to improving the accuracy of financial reporting by automating accounting processes such as preparing financial statements and analyzing financial statements, and this facilitates the process of making accounting decisions, saving time and reducing the chances of human error (Jejeniwa, *et al*, 2024).

Despite the benefits provided by AI, there are multiple challenges facing organizations in implementing it effectively; for example, it can be difficult to accurately predict the size or timing of certain financial risks due to unexpected market volatility. Organizations must keep pace with legal and regulatory changes that may affect financial decision-making, as well as relying on accurate and complete data to achieve reliable analytics (Sreseli, 2023).

In conclusion, financial risk management and accounting decision-making are essential elements for the success of any financial institution in the current complex business environment, as with the advancement of artificial intelligence technologies, it has become possible to significantly improve these processes, contributing to making more accurate and fast financial decisions. However, the challenges that organizations may face in applying these technologies still require continuous research and work to improve management and decision-making methods.

The Practical Framework:

First: The Research Community and Sample:

The study population consists of a sample of Iraqi private commercial banks registered in the Iraqi stock market, to which the questionnaire can be distributed: (5) banks, namely (Bank of Baghdad, Sumer, Commercial Bank Trans Iraq for Investment, National Bank of Iraq, Iraqi Credit), managers, heads of departments and accountants working in private commercial banks. The researcher selected a random sample (stratified) from the study population, A studied sample of (100) members was selected from the study population. The questionnaire was distributed to them and (100) questionnaires were retrieved. These questionnaires were distributed to managers, heads of departments and accountants working in private commercial banks, and the validity of the questionnaire was verified. The study sample was selected by a comprehensive survey method as one of the statistical methods used to be representative of the study community in accordance with the rules of scientific research in the selection of samples of (100) individuals so that it included the employees of a sample of private commercial banks.

Second: The Research Tool:

The research tool (questionnaire) was designed based on the theoretical framework, previous studies, and in light of the research data and objectives, and the questionnaire in its final form consisted of two parts:

Part I: includes the functional variables of the members of the research community, represented in (academic rank, years of experience, training courses).

Part II: consists of (19) phrases, divided into five axes:

- The First Axis: the use of artificial intelligence tools in financial risk analysis, and consists of (4) phrases.

 - The Second Axis: the impact of artificial intelligence tools on accounting decision-making, and consists of (4) phrases.

 - The Third Axis: integration between artificial intelligence and accounting systems in commercial banks, and consists of (4) phrases.

- The Fourth Axis: challenges and opportunities associated with the use of artificial intelligence, consisting of (4) phrases.

The Fifth Axis: your personal opinion on the use of artificial intelligence in commercial banks, and consists of (3) phrases.

Third: The Authenticity of The Research Tool:

The questionnaire was presented in its initial form to a number of faculty members in universities, to identify their opinions, and take their suggestions about the importance of the phrases, the extent to which they measure what they were developed to measure, and the extent of their belonging to the axis under which they were listed, and in light of their opinions and the directives of His Excellency the supervisor, the tool of this study was prepared in its final form, and the internal consistency of the questionnaire was verified by finding the link between the degree of each of the questionnaire phrases, and the degree of the axis included in it, and the following table illustrates this:

Table (1): The extent of internal consistency of the phrases of the first axis shows the use of artificial intelligence tools in financial risk analysis

Pearson's Correlation Coefficient		Significant Value	Result
Statement 1	.671**	.000	Function value
Statement 2	.807**	.000	Function value
Statement 3	.696**	.000	Function value

Pearson's Correlation Coefficient		Significant Value	Result
Statement 4	.744**	.000	Function value

Source: Prepared by the researcher based on the Outputs of the SPSS V.22 Program. From the results of the bilateral correlations shown above, we note that: Statements related to the first axis The use of artificial intelligence tools in analyzing financial risks with its axis, as the correlation between the total degree of the axis and its statements is statistically significant, as the value of (SIG probability value) for the statistical values of the Pearson correlation coefficients calculated in each of the axis phrases is less than the significance level of 0.05.

Table (2): The extent of internal consistency of the statements of the second axis shows the impact of artificial intelligence tools on accounting decision-making

Pearson's Correlation Coefficient		Significant Value	Result
Statement 1	.677**	.000	Function value
Statement 2	.676**	.000	Function value
Statement 3	.678**	.000	Function value
Statement 4	.587**	.000	Function value

Source: Prepared by the researcher based on the Outputs of the SPSS V.22 Program. From the results of the bilateral correlations shown above, we note that: Statements related to the second axis The effect of the impact of artificial intelligence tools on accounting decision-making with its axis, as the correlation between the total degree of the axis and its statements is statistically significant, as the value of (SIG probability value) for the statistical values of the Pearson correlation coefficients calculated in each of the axis phrases is less than the significance level of 0.05.

Table (3): The extent of internal consistency of the phrases of the third axis shows the integration between artificial intelligence and accounting systems in commercial banks

Pearson's Correlation Coefficient		Significant Value	Result
Statement 1	.319**	.000	Function value
Statement 2	.742**	.000	Function value
Statement 3	.644**	.000	Function value
Statement 4	.695**	.000	Function value

Source: Prepared by the researcher based on the Outputs of the SPSS V.22 Program. From the results of the bilateral correlations shown above, we note that: The statements related to the third axis Integration between artificial intelligence and accounting systems in commercial banks with its axis, as the correlation between the total degree of the axis and its statements is statistically significant, as the value of (SIG probability value) for the statistical values of the Pearson correlation coefficients calculated in each of the axis phrases is less than the significance level of 0.05.

Table (4): The extent of internal consistency of the fourth axis phrases shows the challenges and opportunities associated with the use of artificial intelligence

Pearson's Correlation Coefficient		Significant Value	Result
Statement 1	.593**	.000	Function value

Statement 2	.788**	.000	Function value
Statement 3	.921**	.000	Function value
Statement 4	.921**	.000	Function value

Source: Prepared by the researcher based on the Outputs of the SPSS V.22 Program. From the results of the bilateral correlations shown above, we note that: Statements related to the fourth axis Challenges and opportunities associated with the use of artificial intelligence with its axis, as the correlation between the total degree of the axis and its statements is statistically significant, as the value of (SIG probability value) for the statistical values of the Pearson correlation coefficients calculated in each of the axis phrases is less than the significance level of 0.05.

Table (5): Shows the extent of internal consistency of the statements of the fourth axis Personal opinion on the use of artificial intelligence in commercial banks

Pearson's Correlation Coefficient		Significant Value	Result
Statement 1	.678**	.000	Function value
Statement 2	.813**	.000	Function value
Statement 3	.843**	.000	Function value

Source: Prepared by the researcher based on the Outputs of the SPSS V.22 Program. From the results of the bilateral correlations shown above, we note that: Statements related to the fifth axis Personal opinion on the use of artificial intelligence in commercial banks with its axis As the correlation between the total degree of the axis and its statements is statistically significant, as the value of (SIG probability value) of the statistical values of the Pearson correlation coefficients calculated in each of the axis statements is less than the significance level of 0.05.

Fourth: Stability of The Search Tool:

To measure the stability of the search tool, the Cronbach alpha equation was used to ensure the stability of the search tool, and Table (6) shows the stability coefficients of the search tool.

Table (6) Stability coefficients of resolution axes using Cronbach Alpha Coefficient

Variable	Number of paragraphs	Alpha Cronbach value
The use of artificial intelligence tools in financial risk analysis	4	.820
The impact of AI tools on accounting decision-making	4	.730
Integration between artificial intelligence and accounting systems in commercial banks	4	.794
Integration between artificial intelligence and accounting	4	.892

systems in commercial banks		
Challenges and opportunities associated with the use of artificial intelligence	3	.838
The questionnaire as a whole	**19**	.931

Source: Prepared by the researcher based on the Outputs of the SPSS V.22 Program.

The above table showed that the values of the Cronbach alpha coefficient for the first axis (the use of artificial intelligence tools in financial risk analysis.) are (0.820), while the second axis (the impact of artificial intelligence tools on accounting decision-making.) was (0.730), while the third axis (integration between artificial intelligence and accounting systems in commercial banks.) was (0.794), while the fourth axis (challenges and opportunities associated with the use of artificial intelligence) was (0.892), while the fifth axis (personal opinion on the use of artificial intelligence was (personal opinion on the use of artificial intelligence). In commercial banks) is (0.838), while for the questionnaire as a whole it reached (0.931), and this indicates that this tool has stability that meets the purposes of the study, because the degree of stability is high and has statistical significance.

Fifth: Statistical Methods:

The data of this study were classified and analyzed as follows:

Descriptive Analysis: To process the quantitative data resulting from the application of the research form - the tools of descriptive statistics are:

A. Mean: to know the level of people's responses to each of the statements of the study variables.

B. Category Length Equation: which requires measuring the level of practice of the study variables, which was calculated according to the following equation:

Standard Mean = Largest Value - Lowest Value/Largest Value

= 3- 1/3 = 0.67

Then the length of the category is added to the lowest value, so the categories are extracted, which means that the arithmetic averages belong to 3 categories in addition to extracting the standard deviation value to find out the extent to which the answers are dispersed from the arithmetic mean, and the intensity of the answer was calculated on the scale area as in Table (7):

Table 7: Statistical criterion for determining the dimensional levels of the study tool and its paragraphs based on the arithmetic averages

Category	Answer Scale	Degree of importance
From 1 to 1.67	At all	Weak
From 1.68 to 2.34	Once in a while	Medium
From 2.35 to 3	All the time	High

The Source: Student Preparation

Therefore, there are three categories to which the answers and data belong, in addition to extracting the values of standard deviations to determine the extent to which the answers are dispersed from the arithmetic mean.

Inferential Method: In this study, the Statistical Program (SPSS v.27) was used to unpack and classify the questionnaire data.

Sixth: The Results of the Study, its Discussion and Interpretation:

Answer to the first question: Are artificial intelligence tools used in financial risk analysis?

Table 8: Frequencies, percentages, percentages, arithmetic averages and standard deviation of study subjects' responses to the use of artificial intelligence tools in financial risk analysis

Number	Phrases	Mean	Standard Deviation	Level	Arrangement
1	**Artificial intelligence tools contribute to improving the accuracy of financial risk analysis in the bank.**	2.51	0.759	High	2
2	**AI tools help predict future financial risks associated with investment.**	2.61	0.650	High	1
3	**The use of artificial intelligence tools reduces human errors in the process of financial risk analysis**	2.50	0.659	High	3
4	**AI tools accelerate the analysis of big data related to financial risk**	2.48	0.659	High	4
	Overall Mean	2.53	0.496	High	

Source: Prepared by the researcher based on the Outputs of the SPSS V.22 program.

It is clear from Table (8) that the responses of the study members about the use of artificial intelligence tools in financial risk analysis came to a high degree, as the arithmetic mean was (2.53) and a standard deviation of (.4960), and the arithmetic averages of the statements of this axis ranged between (2.48-2.61), and this result can be explained because the use of artificial intelligence tools has a high role in analyzing financial risks.

All statements came in a high score, foremost of which was statement No. (2): Artificial intelligence tools help predict future financial risks associated with investment.) ranked first with a mean (2.61) and a standard deviation (0.650). Statement No. (4): "Artificial intelligence tools contribute to accelerating the analysis of big data related to financial risks." came in fourth place with a mean (2.48) and a standard deviation (.6590).

Answer to the second question: How do artificial intelligence tools affect accounting decision-making?

Table 9: Frequencies, percentages, percentages, arithmetic averages and standard deviation of the responses of study subjects on the impact of artificial intelligence tools on accounting decision-making

Number	Phrases	Mean	Standard Deviation	Level	Arrangement

		Mean	SD	Level	Arrangement
1	AI tools positively affect the accuracy of accounting decisions made in a bank.	2.36	.746	High	4
2	Commercial banks are increasingly relying on AI tools in assessing accounting decisions such as financial risk assessment and financial reporting.	2.47	.688	High	2
3	AI tools help speed up the accounting decision-making process within the bank.	2.41	.698	High	3
4	Artificial intelligence tools contribute to enhancing transparency and accountability in accounting operations within the bank	2.50	.659	High	1
	Overall Mean	2.53	.457	High	

Source: Prepared by the researcher based on the Outputs of the SPSS V.22 Program.

It is clear from Table (9) that the responses of the study members about the impact of artificial intelligence tools on accounting decision-making came to a high degree, as the mean was (2.44) and a standard deviation of (0.457), and the arithmetic averages of the phrases of this axis ranged between (2.36 – 2.50), and this result can be explained There is an impact of artificial intelligence tools on accounting decision-making.

All statements came in a high degree, foremost of which was statement No. (4), which is: Artificial intelligence tools contribute to enhancing transparency and accountability in accounting operations within the bank.) ranked first with a mean (2.50) and a standard deviation (0.659). While statement No. (1): "Artificial intelligence tools positively affect the accuracy of accounting decisions made in the bank." In fourth place with a mean (2.36) and a standard deviation (.7460).

Answer to the third question: Is there integration between artificial intelligence and accounting systems in commercial banks?

Table 10: Frequencies, percentages, percentages, arithmetic averages and standard deviation of the responses of study subjects on the integration between artificial intelligence and accounting systems in commercial banks

Number	Phrases	Mean	Standard Deviation	Level	Arrangement
1	AI tools positively affect the accuracy of	2.69	.465	High	1

	accounting decisions made in a bank.				
2	Commercial banks are increasingly relying on AI tools in assessing accounting decisions such as financial risk assessment and financial reporting.	2.34	.742	Medium	3
3	AI tools help speed up the accounting decision-making process within the bank.	2.33	.711	Medium	4
4	Artificial intelligence tools contribute to enhancing transparency and accountability in accounting operations within the bank	2.37	.734	High	2
	Overall Mean	2.40	.549	High	

Source: Prepared by the researcher based on the outputs of the SPSS V.22 Program.

It is clear from Table (10) that the responses of the study members on the integration between artificial intelligence and accounting systems in commercial banks were high, as the mean reached (2.40) and a standard deviation of (0.549), and the arithmetic averages of the statements of this axis ranged between (2.33 – 2.69).

(2) statements came with a high score, foremost of which was statement No. (1): Artificial intelligence tools are effectively integrated with the bank's existing accounting systems to analyze financial risks and make accounting decisions.) ranked first with a mean (2.69) and a standard deviation (0.465). While statement No. (3): "The use of artificial intelligence requires significant adjustments in the current accounting systems of the bank." came in fourth place with a mean (2.33) and a standard deviation (.7110).

Answer to the fourth question: What are the challenges and opportunities associated with the use of artificial intelligence?

Table 11: Frequencies, percentages, percentages, arithmetic averages and standard deviation of the responses of the study subjects on the challenges and opportunities associated with the use of artificial intelligence

Number	Phrases	Mean	Standard Deviation	Level	Arrangement
1	Effectively integrate AI tools with the bank's existing accounting systems to analyze financial risks and	2.44	.671	High	4

	make accounting decisions				
2	Integration between AI and accounting systems improves efficiency and quality of financial data processing	2.46	.673	High	3
3	The use of artificial intelligence requires significant adjustments in the bank's current accounting systems.	2.48	.674	High	2
4	The integration of AI and accounting systems helps reduce the time spent making accounting decisions.	2.49	.674	High	1
	Overall Mean	**2.46**	.544	**Medium**	

Source: Prepared by the researcher based on the Outputs of the SPSS V.22 Program.

It is clear from Table (11) that the responses of the study members about the challenges and opportunities associated with the use of artificial intelligence were high, as the mean was (2.46) and a standard deviation of (0.544), and the arithmetic averages of the statements of this axis ranged between (2.44 – 2.49).

All statements came in a high degree, foremost of which was statement No. (4): The integration of artificial intelligence and accounting systems helps reduce the time spent making accounting decisions.) in first place with a mean (2.49) and a standard deviation (0.674). Statement No. (1), which is: "Integrating artificial intelligence tools with the bank's current accounting systems effectively to analyze financial risks and make accounting decisions." came in fourth place with a mean (2.44) and a standard deviation (.6710) .

Answer to the fifth question: What is your personal opinion on the use of artificial intelligence in commercial banks?

Table 12: Frequencies, percentages, percentages, arithmetic averages and standard deviation of the responses of study subjects on personal opinion on the use of artificial intelligence in commercial banks

Number	Phrases	Mean	Standard Deviation	Level	Arrangement
1	The use of artificial intelligence tools will positively affect financial risk analysis and accounting decision-making in commercial banks in the long run.	2.44	.671	High	3

2	Commercial banks must invest more resources in AI tools to improve their accounting decision-making strategies.	2.46	.673	High	2
3	Commercial banks should deal with the challenges associated with applying AI strategically to ensure its successful use in financial risk analysis and accounting decision-making.	2.48	.674	High	1
	Overall Mean	**2.46**	**.522**	**High**	

Source: Prepared by the researcher based on the Outputs of the SPSS V.22 Program.

It is clear from Table (12) that the responses of the study members about their personal opinion on the use of artificial intelligence in commercial banks were high, as the mean was (2.46) and a standard deviation of (0.522), and the arithmetic averages of the statements of this axis ranged between (2.44 – 2.48).

All statements came in a high grade, foremost of which was statement No. (3): Commercial banks should deal with the challenges associated with applying artificial intelligence strategically to ensure the success of its use in financial risk analysis and accounting decision-making.) ranked first with a mean (2.48) and a standard deviation (0.674). Statement No. (1): "The use of artificial intelligence tools will positively affect financial risk analysis and accounting decision-making in commercial banks in the long term." came in third place with a mean (2.44) and a standard deviation (.6710).

The Conclusions and Conclusions:

The Results:

1- The results showed that the use of artificial intelligence tools in financial risk analysis came to a high degree, as the arithmetic mean was (2.53) and a standard deviation of (.4960), and the means of the phrases of this axis ranged between (2.48-2.61), and this result can be explained because the use of artificial intelligence tools has a high role in analyzing financial risks.

2- The impact of artificial intelligence tools on accounting decision-making came to a high degree, as the mean reached (2.44) and a standard deviation of (0.457), and the arithmetic averages of the phrases of this axis ranged between (2.36 – 2.50), and this result can be explained There is a significant impact of artificial intelligence tools on accounting decision-making.

3- The results showed that there is integration between artificial intelligence and accounting systems in commercial banks to a high degree, as the mean reached (2.40) and a standard deviation of (0.549), and the arithmetic averages of the phrases of this axis ranged between (2.33 – 2.69).

4- The study members agree to a high degree about the challenges and opportunities associated with the use of artificial intelligence, as the mean was (2.46) and a

standard deviation of (0.544), and the arithmetic averages of the phrases of this axis ranged between (2.44 – 2.49).

5- The study members agree to a high degree on the use of artificial intelligence in commercial banks, where the mean (2.46) and standard deviation (0.522), and the arithmetic averages of the phrases of this axis ranged between (2.44 – 2.48).

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Research Title: The Impact of Artificial Intelligence Tools for Financial Risk Analysis and Accounting Decision Making: Commercial Banks as a Model

The Introduction:

This research seeks to study the impact of the use of artificial intelligence tools in financial risk analysis and accounting decision-making in commercial banks. We would kindly like you to answer the questions contained in this form based on your practical experience and personal knowledge. We would like to emphasize that all answers will be confidential and will be used for scientific research purposes only.

Likert Triple Scale:

(1) •Disagree

(2) •Neutral

(3) •Agree

The First Axis: The use of artificial intelligence tools in financial risk analysis

1.Do you find that AI tools improve the accuracy of financial risk analysis in the bank?

(1) ☐Disagree ☐ (2) Neutral ☐ (3) Agree

2.To what extent do AI tools help predict future financial risks associated with investment?

(1) ☐Disagree ☐ (2) Neutral ☐ (3) Agree

3.Do you think that the use of artificial intelligence tools reduces human errors in the process of financial risk analysis?

(1) ☐Disagree ☐ (2) Neutral ☐ (3) Agree

4.Do AI tools accelerate the analysis of big data related to financial risk?

(1) ☐Disagree ☐ (2) Neutral ☐ (3) Agree

The Second Axis: The Impact of Artificial Intelligence Tools on Accounting Decision Making

1.Do AI tools positively affect the accuracy of accounting decisions made in a bank?

(1) ☐Disagree ☐ (2) Neutral ☐ (3) Agree

2.Are commercial banks increasingly relying on AI tools to evaluate accounting decisions such as financial risk assessment and financial reporting?

(1) ☐Disagree ☐ (2) Neutral ☐ (3) Agree

3. Do AI tools help speed up the accounting decision-making process within the bank?

(1) ☐Disagree ☐ (2) Neutral ☐ (3) Agree

4.Do you think that AI tools contribute to enhancing transparency and accountability in accounting processes within the bank?

(1) ☐Disagree ☐ (2) Neutral ☐ (3) Agree

The Third Axis: Integration between Artificial Intelligence and Accounting Systems in Commercial Banks

1. Are AI tools effectively integrated with the bank's existing accounting systems to analyze financial risks and make accounting decisions?

□ (1) Disagree □ (2) Neutral □ (3) Agree

2. Does the integration of AI and accounting systems improve the efficiency and quality of the financial data processing process?

□ (1) Disagree □ (2) Neutral □ (3) Agree

3. Do you think that the use of artificial intelligence requires significant adjustments in the bank's current accounting systems?

□ (1) Disagree □ (2) Neutral □ (3) Agree

4. Does the integration of AI and accounting systems help reduce the time spent making accounting decisions?

□ (1) Disagree □ (2) Neutral □ (3) Agree

The Fourth Axis: Challenges and Opportunities Related to the Use of Artificial Intelligence

1. Do commercial banks face challenges in implementing AI tools due to the lack of technical skills available within the organization?

□ (1) Disagree □ (2) Neutral □ (3) Agree

2. Do you think the use of artificial intelligence opens up new opportunities to improve the process of financial risk analysis and accounting decision-making

3. Do you think AI tools reduce the costs associated with financial risk analysis in commercial banks?

□ (1) Disagree □ (2) Neutral □ (3) Agree

4. Do you think that the adoption of artificial intelligence enhances the competitiveness of commercial banks in the financial market?

□ (1) Disagree □ (2) Neutral □ (3) Agree

The Fifth Axis: Your personal opinion on the use of artificial intelligence in commercial banks

1. Do you think that the use of artificial intelligence tools will positively affect financial risk analysis and accounting decision-making in commercial banks in the long run?

□ (1) Disagree □ (2) Neutral □ (3) Agree

2. Do you think commercial banks should invest more resources in AI tools to improve their accounting decision-making strategies?

□ (1) Disagree □ (2) Neutral □ (3) Agree

3. Do you think commercial banks should deal with the challenges associated with applying AI strategically to ensure its successful use in financial risk analysis and accounting decision-making?

□ (1) Disagree □ (2) Neutral □ (3) Agree

Concluding Remarks

Thank you very much for your valuable participation in this survey. Your answers will help enrich this scientific research, and we appreciate your time and effort.