

The impact of using artificial intelligence techniques with incorrect inputs On financial management work by application to financial institutions and colleges in the Gulf

AHMAD YASSER ALNASSANI (Ph. D.)*

Associate Professor of Financial Management, Faculty member at Gulf Colleges, Hafar Al-Batin - Kingdom of Saudi Arabia

Ayn@Gulf.edu.sa

Abstract:

This study aims to highlight the risks associated with manipulating inputs in artificial intelligence applications in financial management and their role in producing erroneous results. The extensive use of artificial intelligence makes it nearly impossible to distinguish between "true" and "false," despite the significant positive aspects of artificial intelligence in this field, as in other areas. The study concludes with several results, including. The correlation between implementing artificial intelligence techniques and the significant enhancement and increased efficiency in financial management activities is noteworthy. Moreover, the data and information housed in databases powered by artificial intelligence, if flawed, have the potential to yield inaccurate results.

Introduction: The world has witnessed rapid economic and financial developments in recent years, driven by technological advancements and globalization. These factors have propelled the world at an accelerated pace towards the applications of artificial intelligence (AI). AI has emerged as a contemporary topic in the realms of finance and business, attracting the attention of numerous researcher's eager to study and unravel its nature and its relationship with various variables. This has led to the emergence of various theories and opinions in this field, explaining its dimensions and structure, and highlighting its use in streamlining ideas and behaviors in professional life. In the era of widespread use of information networks, the ubiquitous presence of social media platforms, and the widespread adoption of electronic devices, the volume, quantity, and diversity of information have increased significantly. The information users have multiplied, presenting us with a massive amount of data and information that must be processed, stored, and presented to users for decision-making in the realms of finance and business. Accompanying this wealth of information are numerous risks and challenges that may impact the reliability and dependability of this information, as well as the trust of users and decision-makers. If the inputs stored in databases and information systems are unfair or incorrect, the same inputs will be utilized by artificial intelligence. Additionally, companies aspire to obtain financial information that matches the advancements in information technology associated with providing such information. Therefore, it became necessary to explore the latest smart systems and technologies that can restore credibility to this information, enabling it to be relied upon and used in problem-solving and financial decision-making in various financial domains such as finance and investment with integrity and credibility, avoiding many risks that may arise.

Jeffrey Heinton warns of misleading information associated with artificial intelligence, highlighting that the scientific enthusiasm and intensive use of artificial intelligence will make it almost impossible to distinguish "what is true from what is false." He even speaks of an "nonsense generator," referring to the ability of artificial intelligence to produce persuasive phrases that appear reasonable without being true." (Raqi2017 ◊) Therefore, it is essential to have a method or system for detecting erroneous biases in artificial intelligence to ensure the accuracy of results and the reliability of decisions.

Keywords: Artificial Intelligence, Financial Management Functions.

Received: 12/10/2023

Accepted: 26/11/2023

Proofreading: 10/12/2023

Available online: 31/12/2023

- Financial Management Functions:

The responsibilities of financial management have expanded due to the diverse nature of activities within an organization. Financial management is no longer solely focused on providing the necessary funds to meet the institution's economic needs and activities. Its tasks and functions have broadened to include the flow of funds, planning for them, overseeing them, and making financial decisions) Hassan(2012 ◊, p. 295)

- Tableau: Offers comprehensive reports to help decision-makers make sound financial choices.

- Booke- A-I-: Applies accounting principles to bookkeeping and financial data entry.

- Finance Brain: Provides instant responses to financial inquiries and can analyze data related to accounts and expense management.

Research Problem:

Artificial intelligence is used in financial management based on the analysis of data provided to it. However, when this data is incomplete or of poor quality, it can lead to the issuance of inaccurate and biased judgments based on faulty data.

The research investigation can be articulated through the following questions:

1. Could you articulate the fundamental nature of artificial intelligence and elucidate the advantages it provides when integrated into financial management?
2. How would you characterize the core of artificial intelligence, and what advantages does its incorporation offer in the realm of financial management?
3. In instances where inputs are inaccurate or manipulated, what strategies can be implemented to mitigate the risks associated with the use of artificial intelligence techniques?

Study Hypothesis:

In light of the research problem and in line with its objectives and significance, we seek to test Here is a hypothesis crafted in a more human-friendly way: If financial management activities use artificial intelligence techniques with incorrect inputs, it could have a noticeable and meaningful impact on the results.

Hypothesis1:

The application and utilization of artificial intelligence methods have a notable impact on financial management activities.

*Corresponding Author: | Email: Ayn@Gulf.edu.sa

Hypothesis 2:

The application and utilization of artificial intelligence methods with inaccurate inputs significantly affect financial management activities.

Study Objectives:

The objective of this research is to uncover how artificial intelligence methods are applied and utilized, and to understand their impact on enhancing the efficiency of financial management activities.

The study aims to understand the application and use of artificial intelligence methods and the role of incorrect inputs in the field of financial management.

-To identify the risks and challenges that may affect the reliability of financial information and its credibility among financial decision-makers.

-How to detect incorrect information that artificial intelligence may provide based on incorrect inputs and the negative exploitation of artificial intelligence.

Importance of the Study:

The importance of the study lies in its modern and contemporary topic, which revolves around the quality of financial decision-making. Financial decisions are expected to be based on reliable information, and the decision-making process holds significant value in the world of finance and business due to its profound impact on determining the future of any institution. Furthermore, the study's importance stems from its examination of the factors influencing financial management activities through the application Utilizing artificial intelligence techniques to acquire trustworthy information within the realms of finance and business.

Scientific Significance:

The increasing changes in financial systems associated with the application of artificial intelligence techniques and the rapid transformation in the world regarding the implementation of artificial intelligence techniques in financial management highlight the study's scientific significance.

Practical Significance:

The application of artificial intelligence systems assists in enhancing the reliability of information used in financial decision-making. This depends on the trustworthiness of the real-world data fed into these systems.

Study Methodology:

Given the nature of the problem and the importance and objectives of the study, the study relies on a descriptive-analytical methodology in its preparation.

Study Boundaries:

Geographical Boundaries: The financial departments of Al-Rajhi Bank, Al-Ahli Bank, and the Gulf Colleges in Hafar Al-Batin.

Subjective Boundaries: It is limited to the studied variables:

Independent Variable: The use of artificial intelligence techniques.

Dependent Variables: The efficiency of financial management performance.

Artificial Intelligence Risks.

Study plan:

In an effort to answer the questions of the study problem and to achieve the objectives of the study, and to try seriously to test the hypothesis of the study and based on the descriptive analytical approach to reach the most important results and provide recommendations, this study was divided as follows:

Chapter One: The general framework of the study

Chapter Two: Theoretical Study - Artificial Intelligence, a conceptual framework.

Applications of artificial intelligence and the advantages it brings in financial management.

Risks and challenges that may affect the reliability of information, the reliability of that information among financial decision makers, and the confidence of its users.

Chapter Three: Applied study in the financial departments of Al Rajhi Bank, Al Ahli Bank, Gulf Colleges, financial managers, and information technology managers.

Chapter Four: Results and Recommendations.

Previous studies:

1- Study by) Al-Abadi (Applications of Artificial Intelligence in Financial Institutions as an Entry to Activate Digital Financial Inclusion - . (December 31, 2022)(Hisham and Dalal Al-Abidi (12/31/2022 AD)

The research sought to emphasize the diverse uses of artificial intelligence within financial institutions and its pivotal role in advancing digital financial inclusion. It achieved this by showcasing the experiences of financial entities leveraging artificial intelligence to deliver a range of services to their clientele. The findings indicated that artificial intelligence plays a crucial role in cost reduction, thereby facilitating the provision of financial services to a broader audience. This is particularly significant for individuals with lower incomes and those marginalized from traditional financial systems. Consequently, the question arises: could artificial intelligence be the optimal solution for elevating levels of digital financial inclusion?

2- International Monetary Fund study and report) report(2022 (How can artificial intelligence widen the gap between rich and poor countries)

The study suggests that the introduction of new technology poses a potential threat of exacerbating the economic disparity between affluent and less affluent nations. This is due to a shift in investments towards technologically advanced economies, where automation has become a prominent aspect. As a result, there is a risk of detrimental effects on employment opportunities in developing countries, as automation may displace rather than complement their expanding workforce—historically considered an advantage in less developed economies. To counteract this widening gap, policymakers in developing nations must proactively enhance productivity and upgrade the skills of their workforce.

3- Study) Tabi(2023 (Tabbi Ikram, Nour Bashiri Al-Baidh) 2023 AD – page 23, The impact of artificial intelligence on the performance of commercial banks:

The study aimed to introduce artificial intelligence and the impact it plays in the financial field and what it can achieve for commercial banks by improving their performance, which leads to increasing their permissibility. This study was conducted in commercial banks in the states of El Bayadh and Tiaret, and a questionnaire was distributed to a sample of the

employees of these banks. It reached (100) employees, and both (SPSS and V23 Amos) programs were used to test the study hypotheses and discuss them using structural rates modeling. The study concluded that there was a significant impact of artificial intelligence on the performance of commercial banks.

4- Study)Al-Qadi(2023 (Al-Qadi, July 2023) The impact of applying artificial intelligence systems techniques on the transparency of financial reports in light of contemporary professional publications: An applied study - The study aimed to study and analyze the application of artificial intelligence systems techniques to improve the transparency of financial reports, and to study and analyze artificial intelligence systems of all types and risks. And the obstacles to their application. It also aims to study the concepts of transparency of financial reports and indicators for measuring them - an applied study on a sample of seven companies in the communications, media and information technology sector operating in the Egyptian market through a time series consisting of three years in the period from 2020 to 2022, with 21 observations. To embody the financial reporting transparency indicators for these companies, a set of statistical methods (descriptive, multiple discriminant analysis, correlation analysis, path analysis) were used through the SPSS program to analyze the data and test the hypotheses.

The researcher reached many results, the most important of which is: The application of artificial intelligence systems contributes to improving the credibility and transparency of financial reports in telecommunications, media and information technology companies in terms of: accuracy and objectivity of measuring the financial position, improving the profitability of financial performance, increasing the level of disclosure and transparency, and contributing to the preparation of sufficient and accurate indicators to evaluate the performance. It was also shown that there is a significant and significant difference between the telecommunications, media and information technology companies under study regarding the financial reporting transparency index. In addition, there is a significant (direct) relationship between the application of artificial intelligence techniques and improving the level of transparency of financial reports in the communications, media and information technology companies under study.

Comment on previous studies

We note that most previous studies focused on the positive aspects of applying artificial intelligence systems techniques to improve the transparency of financial reports. They also focused on introducing artificial intelligence and the impact it plays in the financial field and what it can achieve for commercial banks by improving their performance and highlighting the various applications of artificial intelligence in institutions. Finance and its role in promoting and activating digital financial inclusion. Al-Qadi's study did not show the risks of applying artificial intelligence systems techniques, but rather focused on the risks and obstacles to their application. Therefore, this study came to focus on the risks of artificial intelligence, where decisions are made through it based on the analysis of the data that was provided to it. However, if they are incomplete or of poor quality, this may lead to incorrect and biased judgments based on flawed data.

Chapter Two

Theoretical Framework

Section One: The Concept of Artificial Intelligence

1-2- The Concept of Artificial Intelligence:

The term "Artificial Intelligence" is a combination of two words: "intelligence" and "artificial." In this context, "intelligence" signifies the ability to comprehend new and evolving circumstances. It encompasses the capacity to perceive, understand, and learn from novel situations or conditions. The fundamental components of intelligence include perception, comprehension, and the ability to acquire knowledge.

Conversely, the term "artificial" is associated with the act of "making" or "creating." It is used to describe things that are produced as a result of human activity, distinct from those that occur naturally without human intervention. In essence, Artificial Intelligence refers to intelligence that is crafted or synthesized by humans and embedded in machines or computers.

In summary, Artificial Intelligence represents a field where human-created intelligence is implemented in modern machines

)Saad(2012 (

In its simplest definitions, Artificial Intelligence is the ability of a machine to simulate human thought processes through computer programs (Joost & others, 2003). It refers to the capacity of a computer or any other machine to perform activities that typically require intelligence. It involves the development of machines and the addition of this capability to them-p-114.

Artificial Intelligence is a specialized area within computer science that focuses on employing computers for symbolic reasoning and the representation of symbolic knowledge to facilitate logical inferences. Essentially, it strives to emulate certain aspects of human thought processes using computer systems-p481 .)Farouk(2012 (

Artificial Intelligence is a field of computer science that is associated with computer systems possessing characteristics related to intelligence, decision-making, and emulation of human behavior in various domains.

Artificial Intelligence encompasses distinct behaviors and attributes demonstrated by computer programs, enabling them to emulate human cognitive abilities and operational patterns. Notably, the capacity to learn, infer, and respond to unprogrammed situations stands out as a crucial aspect in this regard p-22-)Mekawi (Artificial Intelligence at the Door of Education,(2018 (

Artificial Intelligence encompasses a range of new methods and techniques in computer programming that can be used to develop systems that simulate elements of human intelligence. It enables these systems to perform tasks such as making inferences about facts and laws represented in the computer's memory. The modern concept of Artificial Intelligence involves building machines that perform tasks that would typically require human intelligence when done by humans-p-257-)Al-Yajzi(2019 (

Artificial Intelligence focuses on designing systems that demonstrate human intelligence, such as understanding language, acquiring new information, reasoning, and problem-solving. It aims to apply these capabilities to computers. Artificial Intelligence encompasses all the theoretical and

practical algorithms and methods that deal with decision-making, either autonomously or in collaboration with humans, with the ability to adapt, predict, or imitate-p11-)Others ‘.- Applications of Artificial Intelligence as a Modern Trend to Enhance the Competitiveness of Business Organizations(2019 ‘ As seen from the above, Artificial Intelligence is a relatively modern discipline within computer science that aims to innovate and design intelligent computers capable of emulating human intelligence in order to perform tasks.

2-2 Characteristics of Artificial Intelligence

Artificial Intelligence, based on the concept of "creating intelligent machines that behave like humans," employs a comparative approach to human problem-solving methods. Additionally, it deals with hypotheses simultaneously and with high precision and speed. Artificial Intelligence possesses several characteristics and features, including-p-170-)Al-Najjar(2010 ‘

1. The Ability to Use Intelligence in Problem Solving
2. Thinking and Perception.
3. Knowledge Acquisition and Application
4. Learning and Understanding from Experiences
5. Utilizing Past Experiences in New Situations
6. Quick Response to New Situations and Conditions
7. Dealing with Complex and Difficult Cases
8. Handling Ambiguous Situations with Limited Information
9. Recognizing the Relative Importance of Known Elements in Cases
10. Visualization, Creativity, and Understanding Visual Matters
11. Providing Information for Decision Support.

In conjunction with these attributes, Artificial Intelligence (AI) establishes frameworks for addressing organizational challenges through objective assessments and precise solution estimations. It enhances the cognitive capabilities of organizational personnel by offering resolutions to complex problems that may pose challenges for human analysis within limited timeframes. AI encompasses the exploration of human logical reasoning processes and endeavors to replicate these processes through computer systems. Notably, one of its key merits lies in its inherent stability, as it remains unaffected by factors influencing human abilities, such as forgetfulness. (Zrouqi, 2020, pp. 1-12)

2-3 Goals of Artificial Intelligence

The realm of Artificial Intelligence originated as a practical extension of computer science, delving into the exploration and comprehension of human intelligence. Its aim is to replicate this intelligence, paving the way for a novel breed of smart computers. These computers can be instructed to execute assignments demanding advanced reasoning, inference, and perception.

Artificial Intelligence, as a new science, has various scientific backgrounds and references. Its primary goal is to understand the domain of human intelligence so that computers can comprehend human knowledge and information (Ghazi, 2005, p. 43).

It seems like you've presented a statement about artificial intelligence (AI) and its goal to understand human intelligence by creating computer programs that simulate intelligent human behavior. The statement also mentions the involvement of

reasoning processes fed into the program. However, the term "Rewriting - Human formulation" is a bit unclear in the context provided.

If you're looking for a clarification or expansion on the given statement, or if you have a specific question related to "Rewriting - Human formulation," please provide more details, and I'll do my best to assist you.(Others, - Applications of Artificial Intelligence as a Modern Trend to Enhance the Competitiveness of Business Organizations, 2019, p. 21)

Artificial Intelligence aims to create software that can exhibit intelligent behaviors similar to those performed by humans. This involves enabling machines to engage in activities that typically require human intelligence, such as logical reasoning, ultimately enhancing the intelligence and utility of machines.

The primary goal of Artificial Intelligence is to understand the nature of human intelligence by creating computer programs capable of simulating intelligent human behavior. It means that computer programs have the ability to solve a problem or make a decision in a given situation, and this represents a significant turning point that goes beyond what is known as information technology. Information technology involves human-guided reasoning and is limited by the processing speed of humans (Abdel Rahim, 2000, pp. 35- 54)

The fundamental principle underlying Artificial Intelligence is not merely solving problems more quickly, processing more data, or storing more information extracted from the human mind. Instead, it revolves around the concept of processing information, regardless of its nature and volume, in an automated or semi-automated manner, aligned with a specific objective (Abdel Wahab, p. 259)(

Artificial Intelligence (AI) Goals:

1. Replicating human intelligence.
2. Solving complex knowledge-intensive tasks.
3. Establishing intelligent communication between perception and action.
4. Enhancing human-human, human-computer, and computer-computer interactions.

2-4- The Importance of Artificial Intelligence:

The impact of artificial intelligence and its practical applications is undeniable, contributing significantly to the enhancement and progression of various aspects of our lives. By developing computer systems that operate with expertise comparable to humans, AI has become an essential part of our daily existence. Its diverse applications influence humanity in the present and are poised to shape our future. As we witness remarkable technological advancements on a global scale, artificial intelligence has become an indispensable reality. This rapid progress has the potential to lead us towards a state of complete reliance on computers for the intricacies of everyday life. This transformation is fueled by the information revolution and ongoing technological trends, fostering cultural and technical communication among people across the globe. (al-Din, (2014), p. 3).

The importance of artificial intelligence can be summarized as follows (Abdel Nour, 2004., p. 9)

1. Preserving accumulated human experiences by transferring them to intelligent machines.
2. Allowing humans to interact with machines using natural language instead of computer programming languages. This

benefit extends to all segments of the population dealing with computers.

3. Smart machines serve as a valuable means to relieve humans from numerous risks and psychological pressures, allowing them to concentrate on more significant and humanitarian concerns. This is accomplished by deploying machines to handle arduous and hazardous tasks, venture into uncharted territories, and engage in rescue operations during natural disasters. Moreover, these machines prove highly effective in domains characterized by intricate details demanding intense mental focus, unwavering cognitive presence, and the ability to make sensitive and rapid decisions intolerant of delay or error.

4. Artificial intelligence may enhance scientific research and facilitate more discoveries.

5. Artificial intelligence benefits humans in various aspects and fields by allowing computers to simulate the processes of human intelligence, enabling them to solve complex problems and make quick, logical decisions using human-like thinking.

2-5- Types of Artificial Intelligence:

Artificial intelligence represents the ability to model computational patterns in various domains of life, understand the main and fundamental relationships between their elements, and then create reactions that correspond to the events and situations in these domains. This is achieved through several processes that encompass artificial intelligence, including (Raqi, The Use of Artificial Intelligence Applications in Outsourcing Enterprise Activities- (A Case Study of a Group of Economic Enterprises), 2015)

1. Learning: The ability to acquire information and rules.
2. Reasoning: Using previous rules to reach approximate or definitive conclusions.
3. Self-correction or self-improvement.

Based on these processes, artificial intelligence systems require the following components:

1. Data processing system: Used to represent information and knowledge.
2. Algorithms: Used to define how this information is used.
3. Programming language: Used to represent both information and algorithms in programs.

Thus, types of artificial intelligence can be summarized into three main categories, ranging from simple reactions to self-awareness and self-interaction as follows ((Artificial intelligence and its implications for humans), 2020)

1. Artificial Narrow Intelligence (ANI):

This is the simplest form of artificial intelligence, programmed to perform specific tasks in a defined environment. It reacts to specific situations and cannot operate outside those conditions. Its abilities are limited to what it has learned previously, and it cannot perform new tasks independently.

2. Artificial General Intelligence (AGI):

AGI is capable of reacting autonomously, similar to an ordinary human, by analyzing people and objects in its surroundings, understanding them, and applying its previous experiences to provide personalized responses.

3. Artificial Superintelligence (ASI):

ASI represents the highest level of artificial intelligence, making entirely autonomous decisions by analyzing data and providing logical interpretations across various fields.

Artificial intelligence can also be classified into two types of functions (Mahmoud, 2020, p. 171)

1. Interactive Machines:

These machines react to current events without the ability to learn or rely on previous information. They cannot remember past situations or experiences but can make good decisions based on the current circumstances.

2. Limited Memory:

Unlike interactive machines, limited memory AI can use its stored knowledge to learn skills, reference data, and undergo prior training to provide more context-aware responses.

3. Theory of Mind:

This advanced type of AI aims to understand human emotions, needs, behaviors, and thought processes. It can mimic human gestures, body language, and speech during interactions.

4. Self-aware Artificial Intelligence:

This speculative type of AI can think, feel, and act independently, similar to a real human, without external control systems. Researchers are continually working on enhancing and developing this form of AI, which possesses unlimited self-aware intelligence, performs various functions autonomously, and perceives its surroundings using its unique cognitive abilities (Arnoush, 2007, p. 9)

Secondly - Applications of Artificial Intelligence

2-1- Fields of Artificial Intelligence

The fields of artificial intelligence are diverse, reflecting the various aspects of human intelligence. Research in artificial intelligence has led to the design and development of several programs in different fields. (Helmi, 2022). Some of the important applications of artificial intelligence include:

- Natural Language Processing: This field has seen advancements in computational linguistics, physiology, speech recognition, machine translation, and philosophy.
- Computer Vision: Computer vision has contributed to the development of fingerprint recognition, electronic devices that simulate natural visual systems in humans, and various electronic technologies.
- Robotics: Robotics has pushed the boundaries of mechanical engineering, artificial robotics, control systems, and electronics in both economic and scientific terms.
- Games and Gaming: Games have played a significant role in advancing artificial intelligence by incorporating user intelligence into programs. This has also led to developments in computer science and managerial games.
- Theoretical Proof: Artificial intelligence has contributed to the development of mathematics, logic, and aspects of philosophy.
- Computation Theory and Automation: These have led to advancements in mathematics and computing.
- Hierarchical Search: Hierarchical search mechanisms, including various types and expert systems, have evolved.
- Computer Hardware Components: Developments in electronic components and advances in computer science have occurred.
- Programming Languages and Systems: These have influenced computer science with languages and relationships that help synthesize new systems.
- Expert Systems: Expert systems have impacted various fields such as chemistry, management science, operations research, and field engineering, as well as the petroleum industry.
- Problem Solving: This has led to advancements in psychology, logic, and mathematics.

- Knowledge Representation: Knowledge representation has driven the development of philosophy, computer science, and systems theory.

- Cognitive Perception and Modeling: This has had significant impacts on philosophy, psychology, human skills, and neurophysiological and musical sciences.

2-2- Applications of Artificial Intelligence

Artificial intelligence applications can be categorized into three main areas: (Osmanya, pp. -98- 2019)

1. Cognitive Science Applications, including:

- Expert Systems
- Learning Systems
- Fuzzy Logic
- Genetic Algorithms

2. Smart Machine Applications, including:

- Computer Vision
- Haptic Sensing
- Dexterity
- Motion Mobility
- Neural Networks
- Intelligent Agents

3. Natural Interface Applications, including:

- Natural Language Processing
- Speech Recognition
- Multi-Sensory
- Virtual Reality

"2-3- Utilizations of Artificial Intelligence in the Financial Sector.

- Artificial intelligence manifests itself in various applications within finance, making use of sophisticated algorithms and methodologies such as:

- XGBoost: This machine learning algorithm, based on decision tree, excels in predictive tasks involving structured data. It effectively handles datasets of small to medium sizes, encompassing unstructured data like images and text.

- LightGBM: Functioning as a gradient boosting framework with tree-based learning algorithms, LightGBM distinguishes itself with its swift training, heightened efficiency, superior accuracy, lower memory usage, and effective handling of wide datasets.

- DBSCAN: Short for Density-Based Spatial Clustering of Applications with Noise, DBSCAN is pivotal in clustering nearby data points and detecting outliers in regions of lower density. Widely employed in data mining and machine learning, it plays a crucial role in uncovering patterns and anomalies within financial datasets."

Some examples of AI applications in finance include:

1. Tableau: Offers comprehensive reports to help decision-makers make sound financial choices.
2. Book- A-I: Applies accounting principles to bookkeeping and financial data entry.
3. Finance Brain: Provides instant responses to financial inquiries and can analyze data related to accounts and expense management.

These applications highlight the significant role of artificial intelligence in enhancing financial decision-making and management. (Obaid, 2022.)

-4- Risks of Artificial Intelligence:

Human logical errors can be embedded in artificial intelligence technology, and inadequate testing and control of artificial intelligence can lead to catastrophic ethical results. Products

and services of artificial intelligence may cause harm, resulting in financial losses, or an organization may lag behind competitors if it does not invest in the correct artificial intelligence systems. Investment in artificial intelligence infrastructure, research, development, and talent acquisition may not yield an acceptable return on investment (Al-Sharif, Applications of Artificial Intelligence in Arab Banks, 2017., p. 60)

These risks can be summarized as follows:

1. Security Risks: Artificial intelligence systems may be vulnerable to unexpected cyberattacks, posing security risks to both financial institutions and their current and potential clients.
2. Privacy Concerns: AI technology often requires access to vast amounts of personal and financial data, raising concerns about individual privacy.
3. Bias Concerns: AI technology may exhibit bias based on the information it has been trained on, potentially resulting in discriminatory outcomes in various contexts. AI is merely a tool that is fed with human-input data.
4. Job Displacement: Over time, some jobs may become obsolete, particularly as artificial intelligence enters the financial arena and automates individual tasks.

Here are some examples of AI use in financial services:

1. Credit Scoring: Assessing the creditworthiness of customers.
2. Chatbot Customer Interaction: Communicating with customers through chatbots.
3. Key Performance Indicator (KPI) Evaluation: Assessing the company's performance indicators.

Second Section: Functions of Financial Management:

1- Financial Management:

Financial management is an administrative activity that focuses on creating and preserving the economic value of an organization or its wealth, ultimately concentrating on the financial decision-making process within the organization and its impact on the economic value of the organization. It involves obtaining funds optimally and allocating these funds in a way that maximizes the wealth of the shareholders while ensuring liquidity) (Bakr , 2019 (.

2- Functions of Financial Management:

The responsibilities of financial management have expanded due to the diversity of activities within organizations. Financial management is no longer limited to providing the necessary funds to meet the organization's needs; it now encompasses managing cash flows, planning, and controlling financial activities, and making financial decisions.

1-2- Decision-Making Function:

This function is at the core of any managerial role in organizations. Financial decisions aim to achieve strategic objectives such as maximizing the wealth of shareholders, increasing the market value of the company's stock, and maximizing the returns for the company while maintaining liquidity. These decisions include financing decisions, investment decisions, and dividend distribution decisions.

-2-

2- Financial Planning Function:

Financial planning for companies involves creating plans and strategies for all the financial objectives that the company

wishes to achieve. This function includes setting policies and rules guiding financial thinking in matters such as financing sources, rent or purchase decisions, foreign investment policy, and setting the organized financial procedures and practices for implementing the executive operations-p-295) Hassan ' Finance in the Economic Enterprise ,(2012 '.

3-2- Financial Control Function:

Effective financial control is essential and is associated with the financial planning function. Financial control involves evaluating decisions made during planning to ensure that they are implemented according to set standards. It includes the use of financial metrics and indicators, auditing, and performance evaluation.

4-2- Financial Organization Function:

Financial management relies on financial organization as an organized function within the financial process, with assigned responsibilities and authorities. This involves defining roles and responsibilities and delegating authority in line with the size of the company, the nature of its business, and the tasks and responsibilities associated with it .

5-2- Financial Diagnosis:

Diagnosis, originally a Greek word, was first used in the field of medicine to refer to assessing the competence of patients' diagnosis or condition. Over time, the term has been applied to finance and business. Financial diagnosis involves studying various specializations to analyze a company's financial condition. It is the process of examining a company's financial statements to determine its current financial health, identify areas for improvement, and make recommendations for future financial planning (Bottin).

Table No. (1) Results of the questionnaire's validity and reliability test (Cronbach's alpha coefficient)

The result	Reliability coefficient	Number of questions	The axis
bigger 0.70	0.905	10	Use of artificial intelligence techniques
bigger 0.70	0.887	10	Using artificial intelligence techniques in financial management work
bigger 0.70	0.922	10	The impact of false data and information on the results of artificial intelligence techniques

Source: Statistical analysis

Financial diagnosis (Financial Analysis):

Financial diagnosis refers to the behavior and methodology followed by financial analysts during the process of analyzing financial statements. It provides an insight into the financial position and future prospects of an organization under desired conditions. It allows for an assessment of the company's performance from both a financial and profitability perspective. It is worth noting that financial analysis is the process of interpreting and understanding published financial statements in order to make current and future decisions that help the organization evolve and grow in its activities (Béatrice et Francis GRANDGUILLOT, 2008, p. 21)

**Chapter Three:
The Applied Study**

Building upon the groundwork laid out in the earlier theoretical examination and with a commitment to fulfilling the research goals centered around assessing the repercussions of artificial intelligence (AI) risks on financial management tasks and processes, the current applied study seeks to bridge theory and practice. By undertaking practical experiments, the objective is to elucidate how inaccuracies in AI inputs impact the day-to-day financial management activities. This study is designed to tackle the research problem head-on and substantiate the validity of the proposed hypothesis. To achieve this, the study employs the SPSS program and relies on the Alpha Cronbach scale to gauge the questionnaire's reliability and validity. Building upon the groundwork laid out in the earlier theoretical examination and with a commitment to fulfilling the research goals centered around assessing the repercussions of artificial intelligence (AI) risks on financial management tasks and processes, the current applied study seeks to bridge theory and practice. By undertaking practical experiments, the objective is to elucidate how inaccuracies in AI inputs impact the day-to-day financial management activities. This study is designed to tackle the research problem head-on and substantiate the validity of the proposed hypothesis. To achieve this, the study employs the SPSS program and relies on the Alpha Cronbach scale to gauge the questionnaire's reliability and validity.

1-4- Study Sample:

The study population consists of employees of financial management and financial managers in Al-Rajhi Bank, Al-Ahli Bank, and Gulf colleges. To complete this study, a questionnaire on the risks of using artificial intelligence techniques in financial management was distributed, with 30 questionnaires distributed to all members of the sample. The questionnaire's questions were divided into two main axes: the first axis deals with the use of artificial intelligence techniques in financial management, and the second axis examines the impact of incorrect inputs of artificial intelligence techniques on financial management activities.

To ensure the reliability and validity of the questionnaire, the Alpha Cronbach scale was used. The reliability of the questionnaire means that it provides the same result when redistributed multiple times under the same conditions and terms. The results were as follows:

Table 1: Results of the Validity and Reliability Test of the Questionnaire (Cronbach's Alpha Coefficient)

Axis	Number of Questions	Reliability Coefficient	Result
Use of Artificial Intelligence Techniques	10	0.905	Greater than 0.70
Use of Artificial Intelligence Techniques in Financial Management	10	0.887	Greater than 0.70
Impact of Incorrect Data and Information on Artificial Intelligence Techniques' Results	10	0.922	Greater than 0.70

Source: Statistical Analysis

It can be observed from the table above that the reliability coefficients for all study axes were good and statistically acceptable, as all variables had values greater than 0.70. To test the research hypothesis, data were processed using the SPSS program, and descriptive statistics, linear correlation, and regression analysis were conducted. The results were as follows:

Table No. (2) Results of descriptive statistics for the three axes:

The Sub-3-				The Sub-2-				The Sub-1-			
level	S.D	M	Question number	level	S.D	M	Question number	level	S.D	M	Question number
H	.623	4.09	1	H	0.723	4.11	1.	H	0.595	4.30	1.
H	.636	4.15		H	0.746	4.20	2.	H	1.025	3.70	2.
H	.680	4.11		H	0.672	4.23	3.	H	1.046	3.60	3.
H	.706	4.08		H	0.567	4.12	4.	M	1.057	3.40	4.
H	.628	4.18		H	.706	4.08	5.	M	1.033	3.05	5.
H	.864	4.05		H	.739	4.06	6.	M	1.056	2.95	6.
H	.801	4.00		H	.595	4.17	7.	M	1.044	3.37	7.
H	.772	4.12		H	.720	4.03	8.	M	0.792	3.77	8.
H	.829	3.98		H	.741	3.97	9.	M	0.997	3.36	9.
H	.836	3.86		H	.659	4.15	10.	H	0.951	3.72	10.
H	0.706	4.062		H	0.677	4.112	متوسط	H	0.958	3.53	متوسط

Source: Statistical analysis

From the table above, it can be observed that the trends of the research sample individuals mostly indicate a high level of agreement. In the statements of the first axis, the responses were mostly moderate to high, and in the second and third axes, they were mostly high.

-Testing Research Hypotheses

Hypothesis 1: There is a significant impact of the application and use of artificial intelligence methods on financial management activities.

Hypothesis 2: There is a significant impact of the application and use of artificial intelligence methods with incorrect inputs on financial management activities.

These hypotheses are based on the findings and data collected during the study. The analysis suggests that there is a noteworthy impact of artificial intelligence methods on financial management activities, and there is also a significant effect when incorrect inputs are involved. This indicates that the use of artificial intelligence, both correctly and incorrectly, can influence financial management activities. Further statistical analysis would be needed to determine the extent and significance of these impacts.

The correlation result for the first hypothesis is as follows :

Table No (3) .Correlations

	Use of artificial intelligence	Improving financial management work
Pearson Correlation) Use of artificial intelligence(Sig. (2-tailed) N	1 30	0.487 0.000 30
Pearson Correlation) Improving financial management work(Sig. (2-tailed) N	0.487 0.000 30	1 0.000 30

The regression result for the first hypothesis is as follows:

The correlation analysis reveals that the correlation coefficient between the independent variable and the dependent variable is 0.487. This indicates a weak positive correlation between the two variables, implying that an increase in one variable is associated with an increase in the other. However, the strength of the correlation is considered weak, meaning that there is still considerable variability in the relationship.

As for the results of the first hypothesis regarding regression analysis, you haven't provided specific details about those results. If you have specific findings or statistics related to the first hypothesis, please provide them, and I'd be happy to help you interpret them.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.487a	0.236	0.230	0.735

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	21.698	1	21.698	40.19	0.000b
Residual	70.180	130	0.540		
Total	91.879	131			

- a. Dependent Variable) Improving financial management work , (Constant: (Predictors.
- b-Use of artificial intelligence

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
(Constant)1 (Use of artificial intelligence)	B	Std. Error	Beta	5.175 6.340	0.000 0.000

Coefficients- a

- a. Dependent Variable:)Improving financial management work

The correlation result for the second hypothesis is as follows: Based on the analysis of variance (ANOVA) table for testing the first hypothesis, it is evident that the calculated F-statistic (F = 40.19) is greater than the critical F-value (F = 6.90) at the chosen level of significance. This indicates a statistically significant relationship between the use of artificial intelligence techniques and the improvement of financial management practices. The R-squared value (R² = 0.236) suggests that approximately 23.6% of the variations in improving financial management practices can be attributed to the use of artificial intelligence techniques.

Furthermore, the beta coefficient (Beta = 0.487) and the calculated t-statistic (t = 6.340) are both greater than the critical t-value (t = 2.58) at a significance level of 0.05, with a slope (B = 0.598). Therefore, you can reject the null hypothesis and accept the alternative hypothesis for the first hypothesis, which states: "There is a significant effect of applying and using artificial intelligence methods on financial management practices."

As for testing the second hypothesis regarding the correlation analysis, you have not provided specific details about those results. If you have specific findings or statistics related to the second hypothesis, please provide them, and I'd be happy to help you interpret them.

Correlations

	Using artificial intelligence with wrong inputs	Financial management work
Pearson Correlation) Using artificial intelligence with wrong inputs(Sig. (2-tailed) N	1 30	0.468 0.000 30
Pearson Correlation) Financial management work(Sig. (2-tailed) N	0.468 0.000 30	1 0.000 30

The regression result for the second hypothesis is as follows: Based on the correlation analysis presented in the table, it's evident that the correlation coefficient (0.468) indicates a weak positive correlation between the variables. This means that there is a weak relationship between the use of artificial intelligence with incorrect inputs and its impact on financial management practices. Specifically, an increase in one variable may be accompanied by a slight increase in the other variable.

Now, for the results of the regression analysis for the second hypothesis, you mentioned

(the results of the regression for the second hypothesis are as follows), but it seems there might be missing information or data related to the regression analysis for the second hypothesis. If you have specific findings or statistics from the regression analysis for the second hypothesis, please provide them, and I'd be happy to help you interpret them.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.468a	0.220	0.214	0.759

Pearson Correlation-a Using artificial intelligence with wrong inputs
 ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	21.051	1	21.051	36.570	0.000b
Residual	74.827	130	0.577		
Total	95.877	131			

:Variable Dependent.- a - Financial management work
 -(Constant: (Predictors.- B Using artificial intelligence with wrong inputs
 Coefficients a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)1				4.935	0.000
Using artificial intelligence with wrong inputs	1.809	0.364	0.467	6.045	0.000
	0.587	0.096			

- Variable Dependent.

a Financial management work

Based on the analysis of variance (ANOVA) table for testing the second hypothesis, it is observed that the calculated F-statistic value (36.570) is greater than the critical F-statistic value (6.90), and it is statistically significant. Additionally, the coefficient of determination (R Square = 0.220) indicates that approximately 22% of the variations in financial management practices are explained by the use of artificial intelligence with incorrect inputs, which suggests an impact of using artificial intelligence with incorrect inputs on financial management practices.

Furthermore, the beta coefficient (Beta = 0.467) and the calculated t-value (6.045) are both greater than the critical t-value (2.58) at a significance level of 0.05, and the slope (B = 0.587) indicates a positive relationship. Therefore, the null hypothesis for the second hypothesis is rejected, and it is concluded that there is a statistically significant effect of using artificial intelligence with incorrect inputs on financial management practices.

In summary, the results suggest that using artificial intelligence with incorrect inputs has a meaningful and statistically significant impact on financial management practices, as indicated by the ANOVA and regression analysis.

**The fourth chapter
 Results and recommendations**

Results:

1. The field study confirmed the importance of applying artificial intelligence techniques in the finance and business sector, as it achieves high efficiency and effectiveness in financial management practices.
2. Artificial intelligence provides a high degree of efficiency and ease of performance, as it facilitates access to information.
3. Incorrect inputs to artificial intelligence techniques, whether unintentional or intentional manipulation, will lead to incorrect results in financial management practices and other fields.
4. The application of artificial intelligence techniques has become inevitable, especially in the fields of finance, business, and financial management, and it will lead to significant changes in this domain.
5. Artificial intelligence applications have become an effective competitive advantage that must be mastered in various business areas.
6. Data inaccuracies and lack of transparency in financial statements are the same data that artificial intelligence is provided with, and it will strictly adhere to them.

Recommendations:

- 1.Preventing the world from advancing into highly sophisticated yet unregulated financial activities, using structured models that make it easy for malicious entities to engage in fraudulent operations in this field.
- 2.Utilize specialized experts in the field of artificial intelligence to train employees on the ethical use and application of artificial intelligence techniques.
- 3.Conduct in-depth studies and research in collaboration between finance and business experts and artificial intelligence system experts to uncover manipulation in artificial intelligence inputs.
- 4.Regulate and govern the principles and precautionary measures to avoid manipulation of artificial intelligence inputs and mitigate artificial intelligence risks.
5. Emphasize the importance of training employees in financial technology and artificial intelligence technologies to prevent manipulation of artificial intelligence inputs.
6. Recognize the importance of leveraging artificial intelligence techniques and staying updated with developments in financial management practices to avoid a gap between organizational reality and the evolution of artificial intelligence technologies.
7. Establishing a mechanism or governance for artificial intelligence processes aimed at detecting any deception or flaws in inputs to ensure high-reliability outputs.
8. Implementing ethical guidelines for artificial intelligence to regulate its functions in financial management and all areas.
9. Establishing a mechanism to identify and control the risks and challenges of artificial intelligence that may impact the reliability of financial information and the dependence on such information by financial decision-makers.

References:

- (Artificial intelligence and its implications for humans).
(2020)
<https://www.arabthought.org/ar/researchcenter/fofoelectronic-article-details?id=1006>.
- Abdel Rahim Bakhit Abdel Rahim - . (2000) .Psychology of Artificial Intelligence , *Egyptian Journal of Psychological Studies, Egyptian Psychological Association, Faculty of Education, Ain Shams University, Volume 10, Issue 26, 2000, pp. 35-54* ,p-35
- Abdel Razzaq Mahmoud .(2020) .Applications of Artificial Intelligence: An Approach to Developing Education in the Face of the Challenges of the COVID-19 Pandemic , - *International Journal of Research in Educational Sciences, Volume 3, Issue 4, 2020, pp. 171-224* , -p.171
- Adel Abdel Nour - .(2004) .*Introduction to Artificial Intelligence* .,Riyadh : ,Dar Al-Faisal Cultural Center.,
- Amina Osmany) .- - .(Basic Concepts of Artificial Intelligence, Collective .Business Organizations: - - Applications of Artificial Intelligence as a Modern Trend to Enhance the Competitiveness of Business Organizations,- The Arab Center for Strategic, Political, and Economic Studies, F.
- Asala Raqi .(2015) .The Use of Artificial Intelligence Applications in Outsourcing Enterprise Activities- (A Case Study of a Group of Economic Enterprises) . , -*Unpublished Master's Thesis, Faculty of Economics, Commerce, and Management Sciences, Umm Al-Bouaghi Univ* , -p.22
- Asala Raqi .(2017) .The Use of Artificial Intelligence Applications in Outsourcing Enterprise Activities . Raqi, Asala - *The Use of Artificial Intelligence Applications in Outsourcing Enterprise Activities (A Case Study of a Group of Economic Enterprises), Unpublished Master's Thesis, Faculty of Economics, Commerce, and Management Sciences, Umm Al-Bouaghi Univ* , -p.23
- Az Al-Din Ghazi .(2005) .Artificial Intelligence: Is It Symbolic Technology , - ?*Thought Magazine for Humanities and Social Sciences, College of Education, Umm Al-Qura University, Kingdom of Saudi Arabia, Issue 6, 2005, pp. 43-81* , -p.43
- Bashir Arnoush - . .(2007) .*Artificial Intelligence* . ,Cairo, : Sahab Publishing and Distribution.,
- Béatrice et Francis GRANDGUILLOT , .(2008) .*Analyse financière, édition Gualino éditeur, 5 édition,EAI-paris-2008*,p 21.
- Ekram Tabi .(2023) .The Impact of Artificial Intelligence on the Performance of Commercial Banks: A Case Study of Commercial Banks in El Bayadh and Tiaret . , -*Economic Studies Journal, Issue 23-1, 2023* , -p.23
- Faten Hassan Al-Yajzi .(2019) .The Use of Artificial Intelligence Applications in Supporting Higher Education in the Kingdom of Saudi Arabia , - *Arab Studies in Education and Psychology, Arab Educational League, Issue 11, 2019, pp. 257-282* , -p.257
- Fayez Jumaa Al-Najjar - .(2010) .*Administrative Information Systems: An Administrative Perspective, 2nd . Amman, Jordan :edition, Amman, Jordan: Dar Al-Hamid for Publishing and Distribution, 2010.*
- Fouad Mustafa Obaid - .(2022) .*Business Analytics - Tableau: Tableau Software - Business Analytics - First Edition . ,Istanbul, Turkey,: Yasser Ali, Istanbul, Turkey.,*
- Ghaleb Yassin Saad - .(2012) .*Fundamentals of Information Systems and Information Technology* .,Amman, Jordan :Al-Manahij Publishing and Distribution, Amman, Jordan, 2012.
- Hisham and Dalal Al-Abadi .(2022) .Applications of Artificial Intelligence) .*Applications of Artificial Intelligence in Financial Institutions as an Entry to Activate Digital Financial Inclusion - December 31, 2022* -p.31
- Hisham and Dalal Al-Abadi .(December 31, 2022) .()Applications of Artificial Intelligence in Financial Institutions as an Entry to Activate Digital Financial Inclusion. -
- Iman Abdel Wahab .(2020) .The Impact of the Interaction of Some Artificial Intelligence Systems and the Educational Level on Self-Awareness and Quality of Life Among a Sample of 16-17-Year-Old Students . , -*Arab Studies in Education and Psychology, Arab Educational.*
- International Monetary Fund study and report) .(2022) .*How can artificial intelligence widen the gap between rich and poor countries* .(
- Karim Mohamed Hafez Al-Qadi .(2023) .The Impact of the Application of Artificial Intelligence Systems on the Transparency of Financial Reports in Light of Contemporary Professional Standards -- . *Scientific Journal of Financial and Commercial Studies, Volume 4, Iss* ,p.4
- Khawaled Abu Bakr - .(2019 .) .Applications of Artificial Intelligence as a Modern Trend to Enhance the Competitiveness of Business Organizations - .,*The Arab Center for Strategic, Political, and Economic Studies- , Berlin, Germany.*
- Khawaled Abu Bakr Al-Sharif - .(2019) .Applications of Artificial Intelligence in Arab Banks , .*Financial and Banking Studies Journal, Algeria.,*
- Khawaled Abu Bakr Al-Sharif .(2017) .Applications of Artificial Intelligence in Arab Banks , - .*Financial and Banking Studies Journal, Algeria. ,*
- Khawaled Abu Bakr and Others - .(2019) .Applications of Artificial Intelligence as a Modern Trend to Enhance the Competitiveness of Business Organizations , .*The Arab Center for Strategic, Political, and Economic Studies, Berlin, Germany, 2019 .*
- Khawaled Abu Bakr and Others - .(2019) .Applications of Artificial Intelligence as a Modern Trend to Enhance the Competitiveness of Business Organizations , .*The Arab Center for Strategic, Political, and Economic Studies, Berlin, Germany, 2019 .*
- Khawaled Abu Bakr and Others .(2019) .Applications of Artificial Intelligence as a Modern Trend to Enhance the Competitiveness of Business Organizations -, . *The Arab Center for Strategic, Political, and Economic Studies- , Berlin, Germany. ,*

- Maram Abdel Rahman Mekawi - .(2018) .Artificial Intelligence at the Door of Education .*Al-Qafila Magazine, Aramco, Kingdom of Saudi Arabia, Volume 67, Issue 6, pp. 22-25, 2018-p.25-22*
- Maram Abdel Rahman Mekawi .(2018) .Artificial Intelligence at the Door of Education .*Mekawi, Maram Abdel Rahman - Artificial Intelligence at the Door of Education, Al-Qafila Magazine, Aramco, Kingdom of Saudi Arabia, Volume 67, Issue 6, pp. 22-25, 2018.-p.25-22*
- Nasser Salah al-Din .((2014)) .The Application of Motivation in Artificial Intelligence - . *Unpublished Master's Thesis, Faculty of Arts, University of the Nilein, Sudan .*
- Niveen . Farouk .(2012) .Machines Between Natural Intelligence and Artificial Intelligence Scientifi . *Journal of Humanities and Social Sciences, College of Girls for Arts and Educational Sciences, Ain Shams University, Issue 11, Part 3, 2012, pp. 481-504 ←-p.481*
- Nour Bashiri Al-Baidh) Tabbi Ikram .(2023) .The impact of artificial intelligence on the performance of commercial banks.:
- Reham Mohamed Abdel-Latif - Helmi . .(2022) .The Impact of the Role of Auditors with Artificial Intelligence on the Audit Process - . *A Field Study, Alexandria Journal of Accounting Research, Volume 6, Issue 3, 2022 .*
- Riyad Zrouqi .(2020) .The Role of Artificial Intelligence in Improving the Quality of Higher Education , - . *The Arab Journal of Qualitative Education, The Arab Academy for Research in Alexandria, Issue 12, 2020, pp. 1-12 ←-p.12-1*
- Youssef Hassan .(2012) .Finance in the Economic Enterprise . , -*University Education House, Alexandria, 2012, p. 295*←p.295
- Youssef Hassan .,(2012) .Finance in the Economic Enterprise . , -*University Education House, Alexandria, 2012, p. 295 .*