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THE IMPACT OF ARTIFICIAL INTELLIGENCE APPLICATIONS ON ASSET MANAGEMENT PREDICTION IN THE BANKING SECTOR IN THE KINGDOM OF SAUDI ARABIA

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ABSTRACT

This study examines the impact of AI applications on asset management forecasting in the banking sector in the Kingdom of Saudi Arabia. Integrating AI into Saudi banks offers significant benefits, including improved accuracy, operational efficiency, and enhanced customer satisfaction. However, challenges such as high implementation costs, regulatory constraints, institutional resistance, and data security concerns remain critical barriers. The study emphasizes the need for banks to effectively allocate resources to AI adoption strategies, adapt to regulatory requirements, train their workforce, and address ethical considerations to ensure the sustainability of the integration. Methodologically, the study adopts a descriptive-inductive approach to provide a comprehensive epistemological framework for the role of AI in financial forecasting, along with an analytical approach to develop a model that captures the relationship between AI applications and asset management forecasting. Data was collected from a sample of 100 Saudi bank employees, providing practical insights into employees' perspectives on AI adoption. The findings highlight that while AI can enhance the credibility and reliability of accounting data, its success depends on organizational support, workforce acceptance, and customer trust. The study contributes scientifically and practically by proposing a structured framework for leveraging artificial intelligence in financial forecasting and asset management in the Saudi banking sector.

KEYWORDS: Artificial Intelligence, Financial Forecasting, Banking Sector, Saudi Arabia, Data Security, Customer Trust.

1. INTRODUCTION

In recent decades, modern technologies have witnessed great development, and artificial intelligence has become (AI) is one of the most prominent technologies that contribute to reshaping many industries, and among these industries is the banking sector, which is one of the sectors that has greatly benefited from artificial intelligence applications, especially in the field of financial forecasting. (Daron, 2017).

Financial forecasting is one of the most important tools that the banking sector relies on to ensure the stability of financial operations, make sound investment decisions, and plan effectively for the future. With the increasing volume of data and the complexity of financial markets, traditional methods of financial forecasting have become insufficient. Here comes the role of artificial intelligence, which relies on machine learning techniques and big data analysis to extract patterns and trends from available data.

So, there is no doubt that artificial intelligence applications have become an essential part of financial forecasting tools in the banking sector, contributing to improving the accuracy of forecasts, reducing risks, and enhancing strategic financial decision-making.

Asset management is one of the main pillars of the banking sector, as it contributes significantly to improving the financial performance of banks and financial institutions, by investing funds and achieving the desired returns. In our current era, artificial intelligence has become (AI) is one of the key factors transforming how assets are managed, and enhancing the ability of banking institutions to make more accurate and effective decisions. Bayern, 2015).

AI applications in asset management contribute to improving investment strategies, analyzing data more efficiently, providing customized solutions to clients, and improving the overall performance of asset-related banking activities. These applications rely on technologies such as machine learning, big data analysis, and predictive artificial intelligence to provide accurate strategic insights into financial markets, which helps in making calculated investment decisions.

Based on the above Artificial intelligence has become a pivotal force in improving the efficiency and effectiveness of asset management in the banking sector, opening new horizons for improving returns and reducing risks, which is what this research seeks to study.

1.1. Study Problem

The research problem revolves around how to use artificial intelligence to predict asset management in the banking sectors, and it is represented in how to integrate advanced technology with the traditional banking system to achieve tangible improvements in the accuracy of financial forecasts with the efficiency of asset management. Despite the enormous potential offered by artificial intelligence, there are many challenges that may hinder or limit its effectiveness in this field.

Therefore, the research problem crystallizes around how to achieve a balance between benefiting from the advanced capabilities of artificial intelligence in financial forecasting in asset management, and addressing the technical, ethical, and regulatory challenges that may hinder the effective application of these technologies in the Saudi banking sector.

1.2. Study Questions

The main question of the study is to determine "How can the Saudi banking sector benefit from artificial intelligence applications in financial forecasting and asset management in a way that contributes to improving efficiency, reducing risks, and increasing returns, while dealing with the technical, regulatory, and ethical challenges associated with this technology?"

Several sub-questions arise from the main question, as follows:

1. What is the impact of artificial intelligence applications on the accuracy and efficiency of asset management forecasting operations in the Saudi banking sector?
2. What are the main challenges facing the application of artificial intelligence in asset management in the Saudi banking sector, and how can they be overcome?
3. How can AI applications contribute to improving customer experience and increasing customer satisfaction in the Saudi banking sector by managing assets more effectively?

1.3. Importance Of the Study

The importance of the study stems from the essence of the research problem in terms of the impact of using artificial intelligence techniques in asset management in banking institutions and how to predict their finances, which adds more credibility and suitability to accounting data. The current study has great importance, whether from a scientific or applied objective point of view, and this will be explained as follows:

1.4. Scientific (Theoretical) Importance

The changes occurring in accounting systems and practices in general are increasing and are linked to the digital transformation and its various technologies in our current era; which was a strong motivation for academics. Researchers in this field are calling for studying the subject and determining the necessary rules for unified financial policies that are internationally accepted regarding the use of artificial intelligence techniques in asset management and financial forecasts. Therefore, the importance of the scientific study was derived from this standpoint in terms of the seriousness of the subject and its scientific addition to the library and scientific heritage.

1.5. Practical (Applied) Importance

Artificial intelligence applications help banks enhance appropriate accounting information in terms of its understandability and comparability to meet the requirements of customers on the one hand and the financial regulatory authority on the other hand. In addition, the increasing awareness of bank officials of the importance of having accurate and unified information characterized by a high level of credibility and transparency enables them to make sound decisions that constitute high profitability. In addition, the increasing need of banks for financial and non-financial information with high transparency at the appropriate time may enable them to avoid risks arising from information asymmetry and how to manage it appropriately when it occurs.

1.6. Study Objectives

The main objective of the research is to try to know, study, analyze, and identify artificial intelligence systems, their types, importance, and effects on financial forecasts in Saudi banks and the asset management process in banks.

Several sub-objectives emerge from the main objective, as follows:

1. Identifying artificial intelligence techniques in predicting financial crises for Saudi banks or emergency economic conditions with certainty.
2. Identify the reliability and transparency of the technologies used in these systems.
3. Identify the impact of using artificial intelligence applications in ensuring customer interests.

1.7. Research Variables

- **independent variable**" Using artificial intelligence techniques"
- **Dependent variable:** "Financial forecasting is achieved by asset management in banks."

1.8. Study Hypothesis

The main hypothesis of the study is that "there is a statistically significant positive correlation between the use of artificial intelligence techniques and the achievement of asset management prediction in banks."

1.9. Procedural Terms of The Study

1.9.1. Artificial Intelligence

It is a technology with solving capabilities, similar to the human capabilities in solving problems, and it seems that artificial intelligence at work mimics human intelligence - it can recognize images Videos and more.

1.9.2. Financial Forecasting

Tool Useful in assessing financial risks, determining future cash flows and detecting potential liquidity problems, allowing appropriate action to be taken to avoid financial crises.

1.9.3. Administration Assets

It involves the management and maintenance of an organization's physical assets throughout the entire life cycle of the asset, from capital planning and preparation to purchase, installation, performance, maintenance, compliance, risk management, and disposal of the asset.

1.9.4. Banks

A bank is a financial institution that provides a wide variety of financial services, especially lending, savings and payments, and provides any business with a wide range of financial services it needs.

2. COGNITIVE FRAMEWORK AND LITERATURE REVIEW

First: The Cognitive Framework

2.1. The Concept of Artificial Intelligence

Artificial intelligence refers to a technology that combines physiology, computer science, philosophy, mathematics, statistics, and linguistics with the aim of simulating human intelligence through computer systems. (Ranjan et al. 2020).

It is a combination of hardware and software that performs the functions of the human brain and can evaluate, decide and execute complex operations based on available data. (Stagliano, Italian, 2020).

There are four levels of artificial intelligence used in systems. The first type is the assistance and support of artificial intelligence technologies to humans and serve them in making decisions or forming procedures. The second type is the augmented systems that integrate human decision-making and interact humanly and environmentally, which allows artificial intelligence to analyze and process available data. (Melnychenko, et. Al. 2020).

The third type is autonomous AI systems that adapt to multiple and diverse situations, and thus perform their work more independently without human assistance. As for the fourth type, it is AI technologies programmed to mimic human cognitive skills and designed to receive environmental signals; therefore, it can assess risks, make predictions, and take appropriate actions. (Shaw, 2019).

Despite the expected positive effects of applying artificial intelligence technologies in banking establishments, there are those who believe that artificial intelligence applications have negative effects on the process of financial forecasting and asset management for several reasons, including information and data security, privacy, and the lack of confirmation of the extent to which transactions occur in actual reality. (Hood, 2021).

2.2. What Is Financial Forecasting in Banking Sectors?

AI applications in financial forecasting in the banking sector are formed by analyzing big data; AI can process huge amounts of unstructured financial data and provide accurate insights into financial trends and potential risks, and predict market movements through deep learning algorithms; AI can, through the use of its multiple technologies, predict financial market movements more accurately and effectively, and manage risks. Banks have the ability to analyze financial risks and provide innovative solutions to manage these risks, in addition to automated investment; banks and financial companies can use investment robots (Robo Advisors) based on artificial intelligence to provide personalized investment advice to clients, which contributes to enhancing efficiency and reducing costs (Beerbaum, et al. 2021)

2.3. What Is Asset Management in Banking Sectors?

One of the most prominent effects of artificial intelligence applications on asset management in the banking sector is data analysis and market forecasts; as artificial intelligence can analyze huge amounts of financial data quickly and efficiently, which enables banks to predict financial market movements and make strategic investment decisions based on these analyses, and manage the smart portfolio. By using machine learning techniques, AI can improve asset allocation and diversify investment portfolios in line with financial goals and acceptable risks, which enhances the overall performance of the portfolio and personalization. Banks can use AI to provide personalized financial advice to each client based on their needs and investment goals, which contributes to improving the customer experience and increasing their satisfaction. In addition, AI helps to continuously improve investment strategies by learning from past performance and analyzing changes in the market, which contributes to achieving sustainable returns. It can also predict and reduce potential risks through advanced mathematical models, which helps banks protect their investments and avoid losses (Christ, et. Al. 2021).

Second: Review Of Previous Studies

2.4. Khalidi Naima's Study, (2025).

This study aims to clarify the role that blockchain technology plays in improving electronic banking services, focusing on its concept, mechanism of operation, and most important features. It also highlights the adoption of this technology by leading banks globally and the use of its services. The study concluded that the use of blockchain technology contributes to simplifying banking operations and removing unnecessary intermediaries, which contributes to providing instant transfers and payments, reducing fraud and deception, and improving risk management. This in turn enhances transparency and credibility in financial transactions. Despite the progress made, there is still a need to fully explore the potential of this technology and integrate it into the international financial settlement system.

The results showed that the adoption of banks such asJP Morgan, Standard Chartered, and Deutsche Bank's blockchain technology has significantly accelerated cross-border bank transfers and financial settlements, reducing time and costs.

2.5. Ahmed Al-Naasani's Study (2024)

This study came to highlight the impact of using artificial intelligence applications in reducing banking risks, re-engineering banking businesses and protecting banks from default. The application was applied to a sample of banks operating in the Kingdom of Saudi Arabia. Through the study, the impact of using artificial intelligence applications in

reducing banking risks was highlighted, and the reality of applying artificial intelligence technologies in commercial banks was identified? What is the impact of using artificial intelligence technologies on banking performance, and identifying the most prominent obstacles to using artificial intelligence technologies in commercial banks in general. To achieve the objectives of the study, a questionnaire was formulated and distributed electronically to a sample of employees in several branches of Al Rajhi Bank and Al Ahli Bank via WhatsApp, and (40) questionnaires were distributed.

The study concluded that artificial intelligence applications in commercial banks have an important role in reducing banking business risks, but the actual use or optimal investment of artificial intelligence applications is still limited due to the existence of obstacles and limitations related to technical and information capabilities and the presence of specialists in this area.

2.6. Study Pope, Cioc, et al. (2024)

Recently, there have been significant changes in the labor market and in the lives of employees, as modern society adapts more and more easily to the implementation of AI tools. However, technological changes have also created challenges, including a gap between the available and required competencies in the use of AI technologies. This study aims to analyze the relationships between employee competencies and the effectiveness in the use of AI tools, in order to highlight the set of core competencies in effective interaction with AI technology. Therefore, to achieve the purpose of the research, a questionnaire was created and completed by 209 Romanian employees between August and September 2023. To analyze the data, two advanced techniques were applied: structural equation modeling (SEM) and critical condition analysis (NCA) using SmartPLS v4.

The results indicate that employee competencies are closely related to the effectiveness of AI tools, and optimism and innovation positively mediate this relationship. The originality of the research is highlighted by the use of two advanced analytical methods (structural equation modeling and necessary conditions analysis), with the aim of identifying the sufficient and necessary skill set in the use of AI tools. These findings have significant implications for organizations, the education system, and future research directions on the managerial implications of AI tools use.

2.7. Study By Bassam Bayoumi, (2024).

This research deals with the study and analysis of measuring the impact of generative artificial intelligence technology. Chat-Gpt 4 O on improving the financial performance of Egyptian banks in light of the liberalization of the exchange rate, as well as studying the risks and advantages of the application. The study also aimed to analyze the concepts of financial performance of banks and their measurement indicators. The researcher relied on a descriptive analytical methodology based on three main sections related to the study variables and achieving its objectives, as well as an experimental study on a sample of academic professors in Egyptian universities and higher institutes specializing in accounting information systems, as well as analysts, auditors and accounting data entry personnel in accounting and auditing offices. A set of descriptive statistical methods were used through the 24. SPSSV program to analyze data and test hypotheses.

The researcher reached many results, the most important of which is the contribution of new generative artificial intelligence applications in 2024, which are: Chat-Gpt 4 O In improving the financial performance of banks in light of the liberalization of the exchange rate in terms of the rate of return on assets, the profit margin ratio, the rate of return on investment, the rate of return on equity, and the liquidity ratio in the sample under study.

2.8. Study Of Adel, Shaker, (2024)

The research aimed to study the impact of artificial intelligence systems on financial performance in commercial banks listed in the Saudi financial market, by identifying the dimensions of artificial intelligence systems represented in expert systems, neural networks and intelligent agents, and researching the criteria for measuring financial performance in commercial banks in the financial market in the Kingdom of Saudi Arabia. The research used the deductive approach in order to derive research hypotheses, by analyzing previous studies related to the topic, in addition to using the inductive approach; where the practical reality was extrapolated, the validity of the research hypotheses was tested, and its results were reached by conducting a field study on the basic study sample, which amounted to 112 individuals from financial managers and IT and technology managers in commercial banks listed in the Saudi financial market, and they were analyzed using the statistical packages program. PSS.

The results showed that artificial intelligence systems represented by expert systems, neural

networks and intelligent agents have a significant impact on improving the financial performance of commercial banks in the Saudi financial market, which enhances the strength of the impact of artificial intelligence systems on the financial performance of banks, which confirms the added value of adopting artificial intelligence systems in Saudi commercial banks. One of the most important recommendations of the research is the need to pay actual attention to the application of expert systems, neural networks and intelligent agents in Saudi commercial banks, to enhance the financial efficiency of banking institutions, while emphasizing the importance of organizing practical workshops to train banking cadres on the use of these systems.

2.9. Study Al-Ababneh, Hassan, et al. (2024)

The study aims to identify the main aspects of improving the strategic management of marketing and logistics of modern companies as part of the implementation of artificial intelligence technologies. It was determined that expanding the scope of business and ensuring its profitability is possible by optimizing business processes and management strategies using the implementation of artificial intelligence technologies. The main aspects of automating and improving marketing strategies and logistics management of companies based on the application of artificial intelligence technologies are proven. The main trends in the development of artificial intelligence technologies in the global economy are visualized. The development of artificial intelligence technologies in the world and their impact on the activities of companies is organized under the pretext of the main trends and tools.

The study found that the application of artificial intelligence in the marketing and logistics strategies of companies determines their transformational development and maximum improvement. To identify the key aspects of improving the strategic management of marketing and logistics of companies under the influence of artificial intelligence, multifactor correlation analysis and regression tools were used. The relationship between the main indicators of marketing (sales volumes) and logistics (logistics efficiency index) was determined, their close relationship and the impact of artificial intelligence technologies on the transformation of management strategies of modern companies was assessed. Theoretical and scientific-practical recommendations were made that are complete, reliable and practically applicable when optimizing the marketing and logistics management strategy of companies.

2.10. Study Of Amal, Awinan (2024)

This study aims to identify the role of artificial intelligence applications in improving electronic banking services, as the contemporary world has witnessed a radical development and transformation in many fields and sectors in the past period, and with the rapid progress in advanced tools, an increasing trend has emerged towards the use of modern technologies and artificial intelligence applications aimed at enriching the customer experience in banking services, which contributes to providing smoother and more effective services to users, by studying this aspect in the National Popular Credit Bank.

The study concluded that the adoption of electronic banking in the Algerian Popular Credit Bank contributes to improving banking services through some of the services provided, including the service ofE-Banking, online payment service, Mobile CPA service, and electronic banking also provides some channels that allow banking transactions such as banking via ATM. We also found that the outputs of the fourth technology are not available, i.e. the lack of artificial intelligence applications in the bank.

2.11. Study Of Salima, Golden, Et Al., (2024)

This research aims to highlight the contribution of artificial intelligence applications in improving the financial sector and to identify the challenges facing financial institutions when applying it, using the analytical approach.

The research concluded that Artificial intelligence has an influential role in the financial services industry to gain competitive intelligence, as it has proven its ability to improve internal banking operations, efficiency, accuracy and decision-making ability through automation, in addition to achieving many advantages in the field of trading, asset management, risk management and prediction, fraud detection and providing security.

It was also noted that there are challenges to the use of AI in the financial sector, such as data privacy and quality, biased decision-making, limited transparency, security risks, and legal and ethical issues. We found several ways to overcome these challenges, including using technologies that increase transparency, building technical expertise, implementing strong security measures to enhance safety, and addressing biases and legal and ethical issues.

2.12. Judge's Study (2023)

This research aims 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 its types and the risks and obstacles to their application. It also aims to study the concepts of financial reporting transparency and its measurement indicators. The research sample consisted of seven companies in the communications, media and information technology sector operating in the Egyptian market, namely: (Raya Call Centers, Telecom Egypt, Egyptian Satellites, Egyptian Media Production City, Orascom Investment, i-Finance for Financial and Digital Investments, Fawry for Banking and Payment Technology) through a time series consisting of three years from 2020 to 2022, with 21 observations that embodied the indicators of the transparency of financial reports for these companies. A set of statistical methods (descriptive, multiple discriminant analysis, correlation analysis, path analysis) were used through the SPSS program to analyze data and test hypotheses.

The research concluded:

- 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: the accuracy of measuring and objectivity of 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 for evaluating performance.
- It also showed that there was a significant difference between the telecommunications, media and information technology companies under study (Raya Call Centers - Telecom Egypt- Egyptian Satellite Company - Egyptian Media Production City - Orascom Investment Company - E-Finance for Financial and Digital Investments - Fawry for Banking and Payment Technology) regarding the financial reporting transparency index. In addition, there is a significant (direct) relationship between the application of artificial intelligence technologies and improving the level of financial reporting transparency in the telecommunications, media and information technology companies under study.

2.13. Wasan (2023)

The study aims to determine the impact of artificial intelligence in reducing financial fraud in Jordanian commercial banks listed on the Amman Stock Exchange, by following the descriptive analytical approach. The primary data was collected through electronic survey lists distributed to members of the study sample consisting of the financial and audit departments in (12) commercial banks, numbering (227) employees. Descriptive and analytical statistical methods were used to process and analyze the data and test the hypotheses.

The study concluded that there is an impact of artificial intelligence in its dimensions in reducing financial fraud, and the study recommended that Jordanian commercial banks adopt all procedures and practices related to the security and protection of data and systems that use artificial intelligence technologies, and improve and enhance their internal control systems, to increase their ability to detect fraud and suspicious activities.

2.14. Ashraf, Asmaa, Et Al (2023)

The study aimed to know the impact of artificial intelligence systems on improving the quality of banking services in Jordanian Islamic banks using the possibility of using Islamic intelligence, and to determine the impact of artificial intelligence systems on improving the quality of banking services in Jordanian Islamic banks through its five dimensions: reliability, responsiveness, empathy, assurance, and tangibility.

The results were consistent with expectations, indicating the significant impact of using AI systems on improving the quality of banking services in Jordanian Islamic banks. The study recommended the continuous development of Islamic banking systems to keep pace with global automation and digitization, while integrating the latest technologies such as AI.

2.15. Rutskiy Et Al (2023)

This study investigated customer attitudes towards financial fraud in bank payments and the role of artificial intelligence in combating it, by conducting a field survey of retail bank customers.

The results showed that customers' attitudes towards AI technology varied and that there was insufficient secure handling of personal data and bank card information.

2.16. Study Of Nour Al-Huda, Muhammad, (2022)

In this study, we tried to identify the most important digital transformation technologies and their impact on the accounting profession, shed light

on blockchain technology and the impact of its use in the accounting profession, and highlight what technology can offer to the accounting profession.

We concluded from this study that the use of blockchain technology in the accounting profession contributes to improving and developing the quality of accountant performance and improving the efficiency of accounting workflow by providing more detailed data in real time. It will also reduce the risk of fraud, improve the accuracy of financial reports, and increase the efficiency and effectiveness of accounting activities.

2.17. Study Lehner, et al. (2022)

This study explores the ethical challenges of using AI-based accounting systems for decision-making, through a literature review of accounting and auditing practices from 2015 to 2020.

The research concluded that artificial intelligence alone, despite its enabling and mediating role in accounting, cannot make ethical accounting decisions, in addition to its lack of true agency due to its commitment to pre-determined goals and its subjection to variables caused by humans.

2.18. Amroush's Study (2022)

This study sought to highlight the role of artificial intelligence and its techniques in auditing, in order to reduce the level of audit risks and its components (detection risks, inherent risks, and control risks) from the point of view of accounting experts and accountants.

It was found that there is an agreement on its role in assessing and reducing audit risks, which enables auditors to reduce the levels of these risks to an acceptable level.

2.19. Study Of Ahmed, Taher, (2022)

This study investigated the role of artificial intelligence techniques (machine learning, deep learning, experience and training, modern software in accounting, and the concept of technical knowledge) in improving the quality of accounting information (relevance, reliability, and enhanced properties and benefits).

The results indicated that these techniques contribute to improving the quality of accounting information.

2.20. Study Of Dalal, Hesham, (2022)

The aim of this study is to highlight the various applications of artificial intelligence in financial institutions and their role in enhancing and activating digital financial inclusion, by presenting the experiences of financial institutions that rely on artificial intelligence in providing various services to their customers.

The study concluded that Artificial intelligence contributes to reducing costs, which contributes to providing financial services within everyone's reach, especially those with low incomes and groups excluded from formal financial systems. Thus, artificial intelligence can be the ideal refuge for raising levels of digital financial inclusion.

2.21. Ammaria (2020)

The study aimed to identify the role of financial technology in supporting the banking sector, and aims to analyze the role of financial technology companies in developing and supporting the banking sector through the services they provide. The researchers used a descriptive analytical method. They found that financial technology contributes to the development of electronic financial services and also enhances the profitability of the services sector.

2.22. Osonde (2017)

This research paper was submitted to the Foundation Center. Rand Global Security and Risk, where the study aimed to know the impact of artificial intelligence on assessing various credit risks.

The study concluded that there is an effective impact on credit risk assessment based on alternative data.

2.23. Comment On Previous Studies

- A great similarity was observed between the studies in the use of the research methodology in terms of the use of the analytical approach, and they also agreed in using the questionnaire as a tool for data collection.
- Previous studies differed in terms of sample type, ranging from intentional to random, and also differed in their size.

3. METHODOLOGICAL FRAMEWORK OF THE STUDY

3.1. Study Type

These studies belong to descriptive analytical studies.

3.2. Study Method

In light of the research problem and in pursuit of achieving its objectives, the researcher relied on the descriptive inductive approach; in terms of providing a comprehensive cognitive vision on how

to perform and impact the use of artificial intelligence techniques on financial forecasting in asset management in the banking sector, and the analytical approach; in terms of extracting a proposed framework that reflects the nature of the relationship between artificial intelligence applications on financial forecasting in asset management in banks.

3.3. Study Population and Sample

100 employees from Saudi banks.

3.4. Study Limitations

Spatial boundaries: It is represented by two Saudi banks that apply artificial intelligence technologies, which are: (Saudi Bank and Riyadh Bank).

Time limits: It consists of extracting and analyzing data related to the study variables for the Saudi banks under study during the period from June 2024 to June 2025.

Objective boundaries: The study is based on presenting and analyzing the requirements for applying artificial intelligence systems and determining the impact of its use on financial forecasts and asset management in banks.

Data Collection Tool

The questionnaire tool will be used to suit the study topic. The study questionnaire consists of a set of closed questions on a five-point Likert scale.

3.5. Data Analysis

Part One: Demographic Data

Age Group

Age Group	Frequency	Percentage (%)
Under 25 years	20	20%
25-34 years	30	30%
35-44 years	25	25%
45 years and over	25	25%
Total	100	100%

The study included participants from every major age demographic in a proportionate manner. A large number of respondents fall into the 25-34 years age range because young professionals make up a dominant portion of the survey participants. The survey obtained equal representation between mid-career individuals and older professionals since each group constitutes 25% of survey participants. Twenty percent of the study participants belong to the under 25 years old demographic which indicates early career professionals together with recent college graduates make up this segment. The cross-section of participant ages delivers observations from employees who represent each professional development step.

Educational Level

Educational Level	Frequency	Percentage (%)
Secondary or less	10	10%
Bachelor's	40	40%
Master's	30	30%
PhD	20	20%
Total	100	100%

The analysis reveals that 40% of participants obtained bachelor's degrees while being the most commonly achieved qualification among the respondents who participated in the study. A substantial number of 30% possess master's degrees which signifies the widespread presence of professionals with additional post-graduate qualifications. A significant proportion of 20% of respondents have earned their degrees as PhD holders to demonstrate their focus on specialized academic fields. The data shows that asset management professionals in banking possess university degrees because secondary education or less is present in only 10% of participants.

Job Title

Job Title	Frequency	Percentage (%)
Banking Employee	45	45%
Asset Manager/Officer	35	35%
Researcher/Academic	20	20%
Total	100	100%

According to the sample data banking employees present the biggest employment category since they make up 45% of total respondents. Asset management-related work depends heavily on the

participation of general staff who work in banking institutions. Over one-third of the examined participants (35%) work as asset managers and officers thus demonstrating that substantial asset management duties fall on them. The analysis includes research and academic professionals whose expertise makes up 20% of the sample to investigate asset management patterns. The research design combines practical and theoretical elements through this distribution.

Years of Experience

Years of Experience	Frequency	Percentage (%)
Less than 5 years	25	25%
5-10 years	30	30%
11-15 years	20	20%
More than 15 years	25	25%
Total	100	100%

A large percentage of respondents (30%) maintain a working period between 5-10 years which demonstrates that the majority of them fall in the middle phase of their career. Experience in asset management is balanced between the persons with less than 5 years and those with more than 15 years due to their combined 50%. 20% of participants have maintained their careers for 11-15 years which indicates their position beyond the mid-level phase yet before leading at the top. The combination of entry-level to high-level professionals in asset management provides complete insight for the study.

Part Two: Study Axes

Axis 1: The Impact of Artificial Intelligence on The Accuracy of Asset Management Forecasting.

Item	Mean	Standard deviation
Artificial intelligence applications help improve the accuracy of asset management predictions.	3.75	1.13
AI technologies provide more detailed analytics that help make better decisions.	3.50	1.43
Artificial intelligence applications help reduce human errors in forecasting processes.	3.97	1.13
Artificial intelligence can be relied upon to predict financial market movements with high accuracy.	4.22	1.06
AI applications improve the overall efficiency of asset management operations.	3.53	1.21

Research into Axis 1 shows that artificial intelligence generates optimistic results regarding its positive impacts on asset management forecasting precision. People believe artificial intelligence achieves financial market predictions with minimal inaccuracies because data suggests 4.22 mean scores with 1.06 standard deviation. The perception that artificial intelligence applications lower the occurrence of human errors in forecasting emerged as 3.97 (SD = 1.13) according to participants. People agree that artificial intelligence applications enhance asset management prediction precision since they gave this statement an average score of 3.75 (SD = 1.13). The participants assessed AI's capacity to generate detailed analytical data which leads to enhanced decision making at 3.50 with SD = 1.43 as well as its ability to optimize operational efficiency at 3.53 with SD = 1.21 but ratings slightly decreased suggesting mixed opinions about these characteristics. The rating scale showed high agreement variability through standard deviations where the highest variation came from AI analytics assessments at SD = 1.43 probably due to different AI tool usage experiences between participants. The research reveals that stakeholders have a mostly beneficial perspective about AI being used for asset management forecasting but their perspectives differ to some extent.

Axis 2: Challenges Facing the Application of Artificial Intelligence.

Item	Mean	Standard deviation
Banking institutions face difficulties in hiring qualified personnel to implement artificial intelligence.	4.16	0.98
The cost of implementing AI technologies is high and is a barrier for some banks.	4.62	0.78
There are regulatory and legal constraints that hinder the adoption of AI in asset management.	4.36	0.99
Lack of sufficient and accurate data limits the effectiveness of AI applications.	3.95	1.19
Resistance to change by employees is a challenge in adopting AI.	3.83	0.89

The evaluation of Axis 2: Challenges Facing the Application of Artificial Intelligence has identified multiple substantial barriers to implementing AI assets in asset management. Money remains the central obstacle for banks implementing AI systems as banks rate this barrier at 4.62 points on a 5-point scale (SD = 0.78). Organizations identify regulatory and legal constraints as a substantial barrier to AI

integration based on the research data (Mean = 4.36, SD = 0.99). Implementing AI faces major obstacles because of the scarcity of qualified staff who could execute these initiatives (Mean = 4.16, SD = 0.98) in the banking industry. The rating of 3.95 (SD = 1.19) indicates that insufficient and imprecise data negatively impacts the efficiency of AI applications. Employee resistance to change appears to be less influential than other financial barriers because it scored 3.83 (SD = 0.89) in the surveys. Numerous financial, legal, technical and human resource challenges prevent AI from reaching its full potential in asset management according to the research results.

Axis 3: The Impact of Artificial Intelligence on Customer Experience.

Item	Mean	Standard deviation
Artificial intelligence applications improve the quality of services provided to customers.	3.62	1.25
AI technologies help customize financial products according to customer needs.	3.61	1.19
Artificial intelligence applications contribute to reducing customer waiting time for services.	3.69	1.11
AI technologies provide more accurate and effective financial advice to customers.	3.67	1.34
AI applications improve overall customer satisfaction.	4.10	1.03

The research findings about the use of artificial intelligence on customer experience suggest positive views regarding how banking services benefit from AI applications. A majority of respondents agree that AI applications enhance overall customer satisfaction since this evaluation received a 4.10 score on a 5-point scale with a standard deviation of 1.03. Research participants noted favorable results when assessing how AI decreases service waiting times (Mean = 3.69, SD = 1.11) along with its capability to deliver precise and effective financial guidance (Mean = 3.67, SD = 1.34). Some study participants assigned lower ratings to AI's capability to deliver customized financial solutions (Mean = 3.61, SD = 1.19) along with service quality improvement (Mean = 3.62, SD = 1.25) indicating possible doubts about these AI potentials. The degree of satisfaction with AI services varies substantially across different segments with finance advice registering 1.34 and service quality exhibiting 1.25. The worth of AI for enhanced customer experience remains high since implementation quality and customer acceptance of AI services also affect its performance.

Axis Four: The Future of Artificial Intelligence in The Saudi Banking Sector.

Item	Mean	Standard deviation
AI applications are expected to become an essential part of asset management in the near future.	4.30	0.94
Artificial intelligence technologies will contribute to enhancing the competitiveness of Saudi banks.	3.83	1.06
Artificial intelligence applications will replace many traditional jobs in the banking sector.	4.27	0.87
AI technologies will help develop innovative financial products that meet market needs.	4.67	0.62
Saudi banks will rely more on artificial intelligence to improve the efficiency of their operations.	4.49	0.83

The evaluation of Axis 4: The Future of Artificial Intelligence in the Saudi Banking Sector reveals powerful expectations about AI's expanded contributions to the industry. Survey participants showed the most agreement regarding AI technologies assisting banks in developing innovative financial products that fulfill market requirements as the statement achieved a mean score of 4.67 (SD = 0.62). banking operations within Saudi Arabia are set to increasingly shift to artificial intelligence platforms as indicated by the 4.49 (SD = 0.83) score of respondents. Survey participants indicated a strong belief in AI becoming necessary for asset management during the upcoming future time period (Mean = 4.30, SD = 0.94). Businesses in the banking sector anticipate widespread job replacement from traditional positions due to AI applications (Mean = 4.27, SD = 0.87). The statement about AI enhancing Saudi bank competitiveness received the lowest mean score of 3.83 but maintained a mostly favorable perception with a standard deviation of 1.06. The research demonstrates solid optimism toward AI by showing that the Saudi banking sector should expect maximum automation and improved efficiency along with substantial financial innovations in the future.

4. DISCUSSION

This research study demonstrates results which support earlier investigations about how artificial intelligence enhances banking services. Ashraf, Asmaa, et al. (2023) confirmed that Artificial Intelligence enhances quality banking services within Jordanian Islamic banks through reliability and responsiveness measures. The research findings mirror those of the present study which demonstrates that AI systems strengthen customer

contacts while minimizing mistakes and improving operational performance. Research shows that banking institutions require artificial intelligence for elevating service quality while improving customer satisfaction levels.

The findings related to AI's functions in risk reduction and fraud protection from this study demonstrate matching results with Rutskiy et al. (2023) and Amroush (2022). Rutskiy et al. (2023) exposed security risks related to AI data protection during financial fraud combat yet Amroush's study proved AI cuts audit thresholds enhancing security levels in finance. Similar to the present research AI shows potential to cut human mistakes and boost asset control reliability thus validating how AI helps reduce financial operation risks.

The research findings about AI applied to financial decisions alongside digital transformation align with Nour Al-Huda, Muhammad (2022) and Lehner et al. (2022). Nour Al-Huda demonstrated how digital transformation tools led by blockchain systems help increase accounting operations effectiveness while decreasing fraud occurrence. Lehner et al. (2022) mentioned that Machine Learning systems have ethical limitations in decision-making processes. This study confirms previous findings by recognizing both AI's power to improve asset management efficiency along with data reliability issues and implementation barriers.

The study findings match existing research by Dalal, Hesham (2022) as well as Ammaria (2020) about how artificial intelligence supports financial inclusion and banking sector advancement. According to Dalal (2022), AI operates effectively to decrease operational expenses while providing wider financial services access to individuals who traditionally lacked such resources. Ammaria (2020) demonstrated in his research that financial technology systems create profitable electronic banking solutions. This research investigation confirms similar conclusions because Saudi Arabian banks expect AI technology to accelerate innovative practices while streamlining operational efficiency.

5. CONCLUSION AND RECOMMENDATIONS

Artificial intelligence affects Saudi banking asset management through multiple benefits that enhance precision and operational speed and user satisfaction although it creates financial burdens and limitations from regulatory frameworks and organizational acceptance needs. Saudi banks should use their AI investment resources to develop implementation strategies and support AI adoption through evolving regulatory structures. Banks need to invest in workforce development to minimize employee opposition towards AI adoption and boost their data security mechanisms to sustain trust from their customers. Research must address ethical issues in AI decision-making together with the extended impact of AI on staff numbers in finance and user relationships.

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APPENDICES

Study Questionnaire

Part One: Demographic Data

The age

- Under 25 years
- 25-34year
- 35-44year
- 45 years and over

Educational level

- Secondary or less
- Bachelor's
- Master's
- PhD

Job

- Banking employee
- Asset Manager or Officer
- Researcher or academic

Number of years of experience

- Less than 5 years
- 5-10Years
- 11-15year
- More than 15 years

Part Two: Study Axes

Axis 1: The Impact of Artificial Intelligence on The Accuracy of Asset Management Forecasting.

	phrase	Strongly agree	agree	neutral	Disagree	Strongly disagree
1	Artificial intelligence applications help improve the accuracy of asset management predictions.					
2	AI technologies provide more detailed analytics that help make better decisions.					
3	Artificial intelligence applications help reduce human errors in forecasting processes.					
4	Artificial intelligence can be relied upon to predict financial market movements with high accuracy.					
5	AI applications improve the overall efficiency of asset management operations.					

Axis II: Challenges Facing the Application of Artificial Intelligence.

	phrase	Strongly agree	agree	neutral	Disagree	Strongly disagree
1	Banking institutions face difficulties in hiring qualified personnel to implement artificial intelligence.					
2	The cost of implementing AI technologies is high and is a barrier for some banks.					
3	There are regulatory and legal constraints that hinder the adoption of AI in asset management.					

4	Lack of sufficient and accurate data limits the effectiveness of AI applications.					
5	Resistance to change by employees is a challenge in adopting AI.					

Axis 3: The Impact of Artificial Intelligence on Customer Experience.

	phrase	Strongly agree	agree	neutral	Disagree	Strongly disagree
1	Artificial intelligence applications improve the quality of services provided to customers.					
2	AI technologies help customize financial products according to customer needs.					
3	Artificial intelligence applications contribute to reducing customer waiting time for services.					
4	AI technologies provide more accurate and effective financial advice to customers.					
5	AI applications improve overall customer satisfaction.					

Axis Four: The Future of Artificial Intelligence in The Saudi Banking Sector.

	phrase	Strongly agree	agree	neutral	Disagree	Strongly disagree
1	AI applications are expected to become an essential part of asset management in the near future.					
2	Artificial intelligence technologies will contribute to enhancing the competitiveness of Saudi banks.					
3	Artificial intelligence applications will replace many traditional jobs in the banking sector.					
4	AI technologies will help develop innovative financial products that meet market needs.					
5	Saudi banks will rely more on artificial intelligence to improve the efficiency of their operations.					