

THE IMPACT OF ARTIFICIAL INTELLIGENCE APPLICATIONS ON ENHANCING BANKING SERVICE QUALITY (RAFIDAIN BANK - BABYLON BRANCH)

Duha Khalid Khalif, Hassanein Fallah Ma'ri, Mohammed Ghaleb Ali and Hassan Mohammed Ghanem

Faculty of Administrative Sciences, Al-Mustaqbal University, Babylon, Hillah, 51001, Iraq

<http://doi.org/10.35409/IJBMER.2026.3760>

Received: 18 March 2026/ Published: 25 April 2026

ABSTRACT

This study aimed to analyze the impact of artificial intelligence applications on enhancing banking service quality at Rafidain Bank - Babylon Branch, by identifying the reality of using these technologies, and measuring their effect on transaction speed, accuracy of financial reports, risk management, and customer satisfaction. The study adopted the descriptive-analytical approach, and a questionnaire was distributed to a sample of branch employees and customers. The results showed that AI applications have a positive impact on improving banking service quality, through accelerating processes, enhancing accuracy, and early risk detection. The study also recommended the need to invest in technological infrastructure, train human resources, and update legal and regulatory frameworks to support the adoption of these technologies.

Keywords: Artificial Intelligence, Banking Service Quality, Rafidain Bank, Digital Transformation, Banking Risks.

1. INTRODUCTION

The global economic environment has recently witnessed a radical transformation with the development of information and communication technology, which combines modern communication tools and advanced computing techniques. This transformation is no longer confined to the technological aspect alone but has become part of the infrastructure of the global economy, which increasingly relies on digital and technological solutions. This development has driven economic units to adopt modern technologies to enhance their efficiency and effectiveness in accomplishing tasks, instead of traditional manual methods.

Artificial intelligence is one of the most prominent of these technologies that has brought about a qualitative leap in the performance of financial and banking institutions, becoming an essential tool for improving service quality, enhancing cybersecurity, reducing operational costs, and increasing customer satisfaction. A recent study indicated that AI contributes to improving banking service quality by reducing costs, minimizing risks, increasing revenues, and enhancing competition. In this context, Rafidain Bank, as one of the leading government banks in Iraq, seeks to keep pace with this technological development, especially the Babylon branch, which is a vital artery for banking services in the governorate. Hence, this study comes to evaluate the reality of AI applications in this branch and measure their impact on the quality of banking services provided.

2. METHODOLOGICAL FRAMEWORK OF THE RESEARCH

2.1 Research Problem

Iraqi banks, including Rafidain Bank, face many challenges in adopting AI technologies, most notably weak technological infrastructure, lack of qualified human competencies, high investment costs, and limited legal and regulatory frameworks governing the use of these technologies. The main research problem is represented in the following question:

Do AI applications impact the enhancement of banking service quality at Rafidain Bank - Babylon Branch?

The following sub-questions arise from this main question:

1. What is the level of application of AI technologies in Rafidain Bank - Babylon Branch?
2. How does AI affect the speed of completing banking operations?
3. To what extent does AI contribute to fraud detection and risk management?
4. How does AI reflect on customer satisfaction and the quality of services provided?

2.2 Importance of the Research

The importance of this research is evident as it provides an applied framework for evaluating the impact of AI on the Iraqi banking sector, which is undergoing rapid digital transformation. Its importance lies in the following points:

1. It sheds light on the reality of using AI technologies in one of the most important Iraqi government banks.
2. It offers practical recommendations that can contribute to developing banking performance and improving service quality.
3. It enriches the Arabic library with an applied study in the field of AI and banking services.
4. It helps decision-makers in Iraqi banks understand the opportunities and challenges associated with adopting these technologies.

2.3 Research Objectives

This research aims to achieve a number of objectives, which can be summarized as follows:

1. Analyze the reality of AI applications at Rafidain Bank - Babylon Branch.
2. Measure the impact of AI on the speed of completing banking operations.
3. Evaluate the role of AI in risk management and fraud detection.
4. Determine the impact of AI on customer satisfaction and the quality of services provided.
5. Provide practical recommendations to enhance the use of AI in the bank.

2.4 Research Hypotheses

The following hypotheses were formulated for testing in light of the statistical analysis results:

- **Main Hypothesis One (H1):** There is a statistically significant correlation between AI applications (with their four dimensions) and banking service quality.
- **Main Hypothesis Two (H2):** There are statistically significant effects of AI applications (machine learning, intelligent automation, big data analytics, risk management and fraud detection) on banking service quality.

2.5 Research Methods

This research adopted the descriptive-analytical approach, which aims to describe the phenomenon under study and analyze its components. Both secondary sources (books, published research, reports) and primary sources (questionnaire) were relied upon to collect the necessary data.

A questionnaire was designed covering several areas: AI and its dimensions, transaction speed, risk management, customer satisfaction, and accuracy of financial reports. It was distributed to a

random sample of employees of Rafidain Bank - Babylon Branch and its customers, with (120) valid questionnaires for analysis. Data were analyzed using (SPSS V.26) and (AMOS V.24), employing Cronbach's Alpha tests, Pearson correlation coefficient, and multiple linear regression analysis.

3. THEORETICAL FRAMEWORK

3.1 First Variable: Concept of Artificial Intelligence

3.1.1 Concept of Artificial Intelligence

Artificial intelligence is a field of computer science aimed at developing systems capable of performing tasks that typically require human intelligence, such as learning from data, recognizing patterns, making decisions, and interacting naturally with the environment and humans. These systems range from simple algorithms to deep neural networks that mimic complex brain processes (Abu Al-Nasr, 2022: 15).

AI can develop complex systems that outperform humans in some areas, thereby enhancing human capability through intelligent and advanced tools (Musa & Bilal, 2019: 23). AI is also defined as a set of theories and algorithms that enable computer systems to perform tasks that usually require human intelligence, such as visual perception, speech recognition, and interpreting texts within their various contexts (Al-Anzi et al., 2021: 45).

On the other hand, AI is seen as the use of machines or robots capable of intelligently imitating human behavior, including problem-solving, decision-making, speech recognition, translation, along with other advanced tasks (Al-Toukhi, 2021: 33). In this context, AI is considered not merely a tool to replace humans, but to empower them, as it can be used to transcend the limits of our natural abilities and achieve unprecedented accomplishments.

3.1.2 Importance of Artificial Intelligence

AI is considered one of the most important and widespread modern innovations in our current era, having become essential in various fields, including humanities, education, and advanced technologies. AI has been employed to develop economic units and enhance their performance by being linked to various tasks such as monitoring employee performance, supporting management in making appropriate decisions, and measuring indicators through data analysis to reach accurate results that reflect the actual performance of economic units more realistically compared to traditional systems (Abu Al-Nasr, 2022: 28).

Some aspects of the importance of AI can be highlighted (Al-Muqeeti, 2021: 52):

1. AI plays a prominent role in sensitive areas such as disease diagnosis and prescribing medications, providing legal and professional consultations, interactive education, as well as in security and military defense.
2. Intelligent systems contribute to making decisions accurately, independently, and objectively, reducing the likelihood of error, bias, and racism, and keeping decisions away from external interference or prejudice.
3. Intelligent machines alleviate risks and psychological pressures on humans, allowing them to focus on more important and humane matters.
4. AI contributes to preserving accumulated human expertise by transferring it to intelligent machines.

In the business field, AI enhances the efficiency and effectiveness of economic units. It can improve task completion in a timely manner and expand the number of beneficiaries through

developing advanced tools and programs. Many modern economic units show increasing reliance on AI in delivering their services instead of traditional employees (Al-Astal et al., 2021: 67).

3.1.3 Objectives of Artificial Intelligence

AI seeks to understand the nature of human intelligence by designing computer programs capable of simulating intelligent human behavior, enabling them to find solutions to a variety of problems (Al-Anzi et al., 2021: 48). The objectives of AI can be summarized as follows (Al-Atal, Al-Anzi, & Al-Ajmi, 2021: 55):

1. Analyzing the higher mental processes that occur within the human mind.
2. Developing computer programs that possess the ability to learn from past experiences and solve problems effectively.
3. Improving the use of computers and maximizing their benefits by facilitating the problem-solving process, contributing to enhancing training and education processes effectively and at low costs.

On the other hand, some indicate that the primary goal of AI is to create systems that think and act in a logical and rational manner similar to humans (Russell & Norvig, 2016: 2). Researchers agree that the objectives of AI vary depending on the purpose of employing its techniques, as these objectives can serve multiple fields such as technology, industry, agriculture, medicine, education, marketing, and other sectors (Ghasouli & Ben Cheikh, 2024: 31).

3.1.4 Dimensions of Artificial Intelligence

The dimensions of AI are numerous and vary according to the field in which they are adopted, as well as the purpose of the algorithms and models prepared to understand it. The following are the most important dimensions of AI:

a. Machine Learning

Machine learning means increasing the ability of machines to learn, by improving the process of collecting and analyzing information instantly, and extracting new relationships between them, in a way that makes machines capable of learning without prior programming by technicians. An example is the ability of computers to detect exposure to cyberattacks, analyze the type, target, and source of these attacks, and even deal with them automatically (Bouzaidi & Aichouche, 2017: 132).

b. Intelligent Automation

Intelligent automation refers to the use of AI technologies in executing operations and tasks automatically without direct human intervention, with the ability to learn and continuously improve performance. This automation contributes to raising work efficiency, reducing human errors, and accelerating transaction completion, especially in banking and service fields (Shalabi, 2016: 78).

c. Big Data Analytics

This dimension concerns the use of AI techniques to analyze vast amounts of data and extract patterns and relationships from them, helping institutions make accurate decisions based on real information. It also contributes to predicting future trends and improving institutional performance (Bouzaidi & Aichouche, 2017: 129).

d. Interactive Intelligence

It refers to the ability of intelligent systems to interact directly and immediately with users, by understanding their needs and responding to them intelligently, thereby enhancing the user experience and raising the quality of the service provided (Al-Anzi et al., 2021: 50).

e. Risk Management and Fraud Detection

This dimension involves using AI techniques to analyze financial data and detect abnormal patterns that may indicate fraud or potential risks, helping institutions take preventive actions and reduce losses (Sardouk, 2020: 102).

3.2 Second Variable: Banking Service Quality

Banking service quality is one of the fundamental concepts that receive great attention in administrative and financial studies due to its prominent role in enhancing customer satisfaction and achieving competitive advantage for banks. Modern banks rely on providing high-quality banking services that meet customer needs and exceed their expectations by improving performance, developing procedures, and adopting modern technologies (Al-Alaq, 2010: 45).

3.2.1 Concept of Banking Service Quality

Banking service quality refers to the bank's ability to provide banking services characterized by efficiency, speed, and accuracy, achieving customer satisfaction and enhancing their trust in the bank. It also reflects the degree of alignment between customer expectations and the actual perception of the service provided (Al-Ta'i & Al-Abadi, 2011: 88).

It is also defined as the set of characteristics and features available in the banking service that enable it to continuously meet customer needs and desires at a level exceeding their expectations (Al-Alaq, 2010: 52).

Some researchers believe that banking service quality represents the overall judgment made by the customer about the level of service provided, resulting from comparing the actual performance of the service with their prior expectations (Al-Janabi, 2018: 97).

It is also defined as the bank's ability to provide error-free services, in a timely manner, and in a professional manner that achieves customer satisfaction and enhances their loyalty to the bank (Al-Anzi et al., 2021: 48).

Banking service quality can also be viewed as the degree of excellence in the service performance provided by the bank, which contributes to building long-term relationships with customers and achieving a competitive advantage in the banking market (Al-Ta'i & Al-Abadi, 2011: 90).

3.2.2 Importance of Banking Service Quality

The importance of banking service quality stems from being a fundamental factor in attracting and retaining customers, as well as its role in enhancing the bank's reputation and increasing its market share. It also contributes to raising operational efficiency and reducing errors (Al-Janabi, 2018: 102).

Banking service quality is also a key tool in achieving customer satisfaction, as providing distinguished and advanced services helps meet their needs and exceed their expectations, which positively reflects on their level of loyalty and continued dealing with the bank (Al-Alaq, 2010: 68).

Its importance also lies in supporting the competitiveness of banks, as quality has become a basic criterion for distinguishing between banks in light of economic openness and technological development, prompting banks to continuously improve their services (Al-Ta'i & Al-Abadi, 2011: 97).

Service quality also contributes to improving institutional performance by reducing operational errors, raising employee efficiency, and simplifying banking procedures, leading to increased productivity and optimal use of resources (Al-Anzi et al., 2021: 49).

Furthermore, banking service quality helps build a positive mental image of the bank in customers' minds and enhances trust in dealing with it, which is a crucial factor in attracting new customers and retaining existing ones (Al-Janabi, 2018: 104).

3.2.3 Objectives of Banking Service Quality

Banking service quality aims to achieve a set of objectives, most notably improving customer satisfaction, enhancing trust, raising performance efficiency, reducing errors, and achieving competitive advantage (Al-Anzi et al., 2021: 50).

Banks also seek, through improving their service quality, to build long-term relationships with customers by meeting their needs and exceeding their expectations, leading to increased loyalty and continuity in dealing with the bank (Al-Alaq, 2010: 70).

It also aims to improve the efficiency of banking operations by reducing transaction completion time and simplifying procedures, contributing to increased productivity and optimal use of available resources (Al-Janabi, 2018: 105).

Another core objective is enhancing the bank's reputation in the banking market, as service quality is a decisive factor in forming a positive mental image among customers, helping to attract new customers and retain existing ones (Al-Ta'i & Al-Abadi, 2011: 101).

Banking service quality also contributes to supporting the decision-making process by providing accurate and reliable services, reducing risks associated with operational errors, as well as achieving excellence and superiority in light of increasing competition among banks (Al-Anzi et al., 2021: 52).

3.2.4 Dimensions of Banking Service Quality

The dimensions of banking service quality are determined by several basic elements that reflect the level of service provided. The most prominent of these dimensions are:

1. **Reliability:** Means the bank's ability to provide the service accurately and consistently and adhere to schedules (Al-Ta'i & Al-Abadi, 2011: 95).
2. **Responsiveness:** Refers to the speed of employees' response to customer requests and their efficiency in providing the service (Al-Alaq, 2010: 72).
3. **Security/Assurance:** Consists of customers' feeling of trust and safety while dealing with the bank and the protection of their data (Al-Janabi, 2018: 110).
4. **Empathy:** Expresses the bank's care for customers and understanding of their individual needs (Al-Anzi et al., 2021: 53).
5. **Tangibles:** Includes physical aspects such as bank facilities, technologies used, and employee appearance (Al-Ta'i & Al-Abadi, 2011: 99).

3.3 AI Applications in Banking Services

The global banking sector is witnessing rapid digital transformation with the expansion of using AI technologies to improve the efficiency of banking operations, enhance cybersecurity, and provide more accurate and faster financial services. The Governor of the Central Bank of Iraq has affirmed that "the next stage will witness a qualitative shift in the nature of banking services, based on innovation and digital transformation."

The most prominent AI applications in banking services include (Diab, 2022: 312; Al-Safarini, 2024: 155):

1. **Data Analysis and Intelligent Decision-Making:** AI helps analyze customer data and provide personalized financial recommendations.
2. **Automation of Banking Operations:** AI plays an essential role in improving operational efficiency and reducing human errors.
3. **Fraud Detection:** Banks rely on AI to identify abnormal patterns in transactions, helping to prevent financial fraud.
4. **Chatbots:** Provide instant answers to customer inquiries without human intervention and assist customers 24/7.
5. **Personalized Banking Services:** Provide customized services based on analyzing the customer's financial behavior.

3.4 Challenges of Adopting AI in Iraqi Banks

Iraqi banks face many challenges that hinder the effective adoption of AI technologies. A recent study indicated that "the rate of AI usage in the Iraqi banking sector is 40%, with several main obstacles." These challenges include:

First: Weak Technological Infrastructure: Many Iraqi banks still rely on traditional systems not equipped to accommodate AI. Limited investment in modern data centers, poor internet speed, and the absence of an advanced cloud computing environment all hinder the digital transformation process.

Second: Lack of Qualified Human Competencies: Iraqi banks suffer from a lack of qualified human competencies to work with AI technologies, as most banking institutions lack specialists in data analysis, machine learning, and dealing with intelligent systems (Sheli, 2023: 95).

Third: High Investment Costs: Implementing AI technologies requires huge budgets, including updating infrastructure, developing intelligent software, and enhancing electronic protection systems.

Fourth: Legal and Regulatory Challenges: Iraqi banks face challenges related to weak legal frameworks regulating the use of AI in banking operations and the absence of clear legislation for data protection and customer privacy (Abdul Khaliq, 2023: 112).

4. FIELD RESEARCH METHODOLOGY

4.1 Overview of Rafidain Bank - Babylon Branch

Rafidain Bank is one of the oldest and largest government banks in Iraq, established in 1941, with branches spread across all Iraqi governorates. The Babylon branch is one of the vital branches providing various banking services to citizens and companies in the governorate.

Rafidain Bank, like other banks, seeks to keep pace with modern technological developments by introducing electronic banking systems, providing mobile banking services, and using electronic payment cards. However, the digital transformation process still faces several challenges related to infrastructure and human competencies, necessitating this study to measure the impact of AI applications with their various dimensions on banking service quality at this branch.

4.2 Study Sample and Measurement Tool

A random sample of employees of Rafidain Bank - Babylon Branch and its customers was selected, totaling (120) individuals. A questionnaire was designed containing (27) items distributed across two main axes according to the theoretical variable dimensions:

First: AI Applications Axis (Independent Variable) includes 12 items distributed across its four dimensions:

- First Dimension: Machine Learning (3 items)
- Second Dimension: Intelligent Automation (3 items)
- Third Dimension: Big Data Analytics (3 items)
- Fourth Dimension: Risk Management and Fraud Detection (3 items)

Second: Banking Service Quality Axis (Dependent Variable) includes 15 items distributed across its five dimensions:

- First Dimension: Reliability (3 items)
- Second Dimension: Responsiveness (3 items)
- Third Dimension: Security/Assurance (3 items)
- Fourth Dimension: Empathy (3 items)
- Fifth Dimension: Tangibles (3 items)

Reliability was measured using Cronbach's Alpha coefficient, where the coefficient value for the entire questionnaire was (0.892), a high value indicating a high degree of reliability and internal consistency.

4.3 Description of the Study Sample

The results of the statistical analysis showed that the majority of the sample (65%) were male, (55%) aged between 30-45 years, (60%) held a first university degree, and (45%) had experience or dealing duration ranging between 5-10 years.

4.4 Reliability Test (Cronbach's Alpha)

Cronbach's Alpha coefficient was calculated to measure the reliability of the questionnaire for its main axes and sub-dimensions. The results were as follows:

Table (1): Reliability Coefficients for Scale Components

Variable	Dimension	Number of Items	Cronbach's Alpha
AI Applications	Machine Learning	3	0.871
	Intelligent Automation	3	0.865
	Big Data Analytics	3	0.858
	Risk Management & Fraud Detection	3	0.882
	Entire Variable	12	0.879
Banking Service Quality	Reliability	3	0.845
	Responsiveness	3	0.839
	Security/Assurance	3	0.861

Variable	Dimension	Number of Items	Cronbach's Alpha
	Empathy	3	0.850
	Tangibles	3	0.842
	Entire Variable	15	0.874
Entire Questionnaire	-	27	0.892

(Source: Prepared by the researcher based on outputs from SPSS V.26)

The values indicate that all dimensions and axes have high reliability (above 0.80), confirming the tool's validity for statistical analysis.

4.5 Results Analysis and Hypothesis Testing

Multiple linear regression analysis was used to test the study hypotheses, with the correlation represented as follows:

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Where:

- **Y:** Banking Service Quality (dependent variable)
- **X1:** Machine Learning
- **X2:** Intelligent Automation
- **X3:** Big Data Analytics
- **X4:** Risk Management and Fraud Detection

Table (2): Multiple Linear Regression Coefficients for AI Dimensions and Banking Service Quality

Independent Dimensions)	Variables (AI	Regression Coefficient (B)	t-value	Sig. Level
Machine Learning (X1)		0.812	5.423	0.000
Intelligent Automation (X2)		0.768	4.987	0.000
Big Data Analytics (X3)		0.745	4.652	0.000
Risk Management & Fraud Detection (X4)		0.803	5.112	0.000
R² Value		0.641	-	-
Calculated F-value		48.732	-	0.000

(Source: Prepared by the researcher based on outputs from SPSS V.26)

4.6 Hypothesis Testing Results

Main Hypothesis One (H1): There is a statistically significant correlation between AI applications (with their four dimensions) and banking service quality.

The results showed a strong positive correlation between the independent and dependent variables, with a coefficient of determination ($R^2 = 0.641$), meaning that the four AI dimensions together explain (64.1%) of the changes occurring in banking service quality. The calculated F-value (48.732) was statistically significant at (0.000), confirming the acceptance of the first main hypothesis.

Main Hypothesis Two (H2): There are statistically significant effects of AI applications on banking service quality.

Through analyzing the effect of each AI dimension, the following was found:

- **Effect of Machine Learning on Banking Service Quality:** The results showed a positive and statistically significant effect at the (0.05) level, with a regression coefficient ($B = 0.812$, Sig. = 0.000), confirming that the ability of systems to learn from data contributes to improving the accuracy of banking services and customizing them according to customer needs.
- **Effect of Intelligent Automation on Banking Service Quality:** The results showed a positive and statistically significant effect ($B = 0.768$, Sig. = 0.000), confirming that automating banking operations contributes to accelerating transaction completion and reducing human errors, thus improving service quality. This result agrees with the study by Diab (2022).
- **Effect of Big Data Analytics on Banking Service Quality:** The results showed a positive and statistically significant effect ($B = 0.745$, Sig. = 0.000), confirming that analyzing large amounts of data helps understand customer behavior and predict their needs, which positively reflects on the quality of the service provided.
- **Effect of Risk Management and Fraud Detection on Banking Service Quality:** The results showed a positive and statistically significant effect ($B = 0.803$, Sig. = 0.000), confirming that using AI in fraud detection and risk management enhances customers' feelings of security and trust, which is a fundamental dimension of banking service quality. This result aligns with the study by Al-Saqqat and Al-Saqqaf (2025).

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Through analyzing the results reached by the research, which relied on measuring the impact of the four AI dimensions (machine learning, intelligent automation, big data analytics, risk management and fraud detection) on the five dimensions of banking service quality (reliability, responsiveness, security/assurance, empathy, tangibles), the following conclusions can be drawn:

1. The results proved that AI applications have a clear positive impact on improving banking service quality at Rafidain Bank - Babylon Branch, as the coefficient of determination ($R^2 = 0.641$) indicates that these applications explain (64.1%) of the changes occurring in service quality.

-
2. It was found that machine learning significantly contributes to improving the accuracy of predicting customer behavior and customizing services, thereby enhancing the reliability and empathy dimensions of banking service.
 3. Intelligent automation contributed to accelerating banking operations and reducing waiting time by automating many routine procedures, thereby enhancing the responsiveness dimension of service quality.
 4. Big data analytics contributed to a deeper understanding of customer needs and providing more personalized services, which positively reflected on the reliability and empathy dimensions.
 5. The risk management and fraud detection dimension contributed to the early detection of fraud and security threats, thereby enhancing the security/assurance dimension of banking service quality and increasing customer trust.
 6. Despite the significant benefits, Rafidain Bank - Babylon Branch still faces challenges in adopting AI, most notably weak technological infrastructure (which affected the tangibles dimension), lack of qualified human competencies, high implementation costs, and limited legal and regulatory frameworks.

5.2 Recommendations

Based on the research findings and according to the study dimensions, the researcher recommends the following:

1. Necessity of allocating sufficient budgets to develop the technological infrastructure at Rafidain Bank - Babylon Branch, including updating data centers, improving internet speed, and adopting a cloud computing environment, thereby enhancing the tangibles dimension of service quality.
2. Invest in equipping the bank with the latest devices and technologies supporting AI applications.
3. Provide specialized training and qualification programs for employees in AI and its banking applications, in cooperation with universities and specialized training centers, to enhance their ability to deal with machine learning and intelligent automation systems.
4. Employ specialized competencies in data analysis and AI.
5. Work on expanding the use of AI to include new areas such as predictive analytics, smart financing, and targeted marketing, enhancing the efficiency of banking operations and service quality.
6. Invest in developing more advanced AI systems to combat cyberattacks and enhance the bank's protection strategies, thereby enhancing the security/assurance dimension for customers.
7. Update fraud detection systems periodically to keep pace with advanced methods of electronic financial crimes.
8. Develop smart assistants (Chatbots) and continuously analyze customer behavior to improve service level and increase customer loyalty, thereby enhancing the responsiveness and empathy dimensions.
9. Design personalized banking services based on big data analytics for each individual customer.

10. Establish strategic partnerships with local and international FinTech companies to develop innovative AI solutions that meet the needs of the Iraqi market.
11. Work with regulatory bodies (Central Bank of Iraq) to update legal and regulatory frameworks supporting AI applications in the banking sector, ensuring the safe and effective use of these technologies.
12. Necessity of conducting future research to assess the long-term impact of AI on the financial and investment aspects of Iraqi banks, and to study the experiences of other banks in this field.
13. Conduct comparative studies between government and private banks in adopting AI technologies and their impact on banking service quality.

REFERENCES

1. Abdul Khaliq, Ahmed Ragab. (2023). Legal Regulation of Artificial Intelligence and Its Role in the Banking Sector. *International Journal of Jurisprudence, Judiciary, and Legislation*, 5(1).
2. Abu Al-Nasr, Medhat Mohammed. (2022). *Smart Organizations in Light of the Knowledge Age and Artificial Intelligence*. Cairo: Arab Group for Training and Publishing.
3. Al-Alaq, Bashir Abbas. (2010). *Marketing of Services*. Amman: Dar Al-Yazouri Scientific for Publishing and Distribution.
4. Al-Anzi, Mohammed et al. (2021). *Total Quality Management in Service Institutions*. Amman: Dar Al-Masirah for Publishing and Distribution.
5. Al-Astal, Mohammed Zakaria, Aqeel, Magdy Said El-Agha, & Eid, Mohammed. (2021). Developing a Proposed Model Based on Artificial Intelligence and Its Effectiveness in Developing Programming Skills among Students of University College of Science and Technology in Khan Yunis. *Journal of the Islamic University for Educational and Psychological Studies*, 29(2).
6. Al-Atal, Mohammed Hamad, Al-Anzi, Ibrahim Ghazi, & Al-Ajmi, Abdul Rahman Saad. (2021). The Role of Artificial Intelligence in Education from the Perspective of Students of the College of Basic Education in the State of Kuwait. *Journal of Educational Studies and Research*, 1(1).
7. Al-Bahrawi, Mohanny Mohammed, & Shaker, Hossam. (2022). *Dialogue and Investigative Journalism: Theory and Practice*. Egypt: University Education House.
8. Al-Janabi, Saad Ali. (2018). *Management of Commercial Banks*. Amman: Dar Safaa for Publishing and Distribution.
9. Al-Jubouri, Mohammed, & Al-Faisal, Ahmed. (2018). Predicting Consumer Behavior Using Artificial Neural Networks Techniques. *Journal of Economics and Scientific Efficiency*, 6(14).
10. Al-Muqeeti, Sajoud Ahmed Mahmoud. (2021). *The Reality of Employing Artificial Intelligence and Its Relationship to the Quality of Performance of Jordanian Universities from the Perspective of Faculty Members*. (Unpublished Master's Thesis). Middle East University.
11. Al-Otaibi, Abdul Aziz Ali Marzouq. (2024). The Role of Artificial Intelligence in Improving the Quality of Digital Services: An Applied Study. *Arab Journal of Digital Management*, 5(2).
12. Al-Safarini, Enas Jamal. (2024). The Impact of Artificial Intelligence on the Quality of Banking Services Provided to Customers in Tulkarm Governorate. *Journal of Financial and Banking Studies*, 8(2).

-
13. Al-Saqqat, Firas Mohammed Saud, & Al-Saqqaf, Ahmed Abdel Qader. (2025). The Impact of Artificial Intelligence on Risk Management in Saudi Banks: A Survey Study of Bank Employees' Opinions in Jeddah. *Journal of Financial and Commercial Research*, 12(1).
 14. Al-Ta'i, Hamid Abdel Nabi, & Al-Abadi, Hashem Fawzi. (2011). *Service Quality Management*. Amman: Dar Al-Yazouri Scientific for Publishing and Distribution.
 15. Al-Toukhi, Mohammed El-Sayed. (2021). Artificial Intelligence Techniques and Technological Risks. *Police Thought Journal*, 30(1).
 16. Bouzaïdi, Lamjad, & Aichouche, Riyad. (2017). The Role of Artificial Neural Networks Technology in Risk Management in Industrial Enterprises. *Journal of Financial and Business Economics (JFE)*, 4(4).
 17. Diab, Reham Mahmoud. (2022). The Role of Artificial Intelligence in Improving Banking Services Performance. *Arab Journal of Financial and Banking Studies*, 6(1).
 18. Ghasouli, Yasmine, & Ben Cheikh, Yosra. (2024). *Artificial Intelligence and Improving Banking Sector Performance: An Analytical Study of Global Indicators during 2014-2022*. (Unpublished Master's Thesis). University of Mohamed El Bachir El Ibrahimi, Bordj Bou Arreridj, Algeria.
 19. Kadhem, H. F., Jawad, M. K., & Mawlood, S. J. (2025). The Role of Artificial Intelligence in Improving Banking Service Quality: An Analytical Study. *Journal of Information Systems Engineering and Management*.
 20. Mohammed, A. M., & Wahhab, A. M. A. (2024). The Relationship Between Artificial Intelligence and E-Accounting Programs: Impact on the Quality of Financial Reports in Iraqi Banks. *Financial and Credit Activity: Problems of Theory and Practice*, 6(59), 180-193.
 21. Musa, Abdullah, & Bilal, Habib Ahmed. (2019). *Artificial Intelligence: A Revolution in Era Technologies*. Cairo: Arab Group for Training and Publishing.
 22. Othman, A. T., & Al-Kassab, M. M. (2025). Analysis of Challenges and Obstacles to Artificial Intelligence Adoption in the Banking Sector in Iraq: Opportunities and Challenges. In *Applied Artificial Intelligence in Business*. Springer.
 23. Russell, S. J., & Norvig, P. (2016). *Artificial Intelligence: A Modern Approach* (3rd ed.). Pearson.
 24. Sardouk, Ali. (2020). The Use of Intelligent Robots in University Libraries: Global Experiences and the Current Reality in Maghreb Countries. *Journal of Information and Technology Studies*, 3(2).
 25. Shalabi, Elham. (2016). Implementing the Railway Transport Development Strategy in Algeria Using Intelligent Transport Systems as an AI Application. *Journal of Financial and Accounting Studies*, 7(1).
 26. Sheli, Elham. (2023). Human Resource Management in Light of the Challenges of Implementing Artificial Intelligence. *Arsad Journal of Economic and Administrative Studies*, 6(1).
- Tbiby, Ikram, & Mowali, Omnia. (2023). The Impact of Artificial Intelligence on Banking Service Quality (Case Study of Commercial Banks in Yetti El Beidh/Tiaret). *Journal of Economic and Financial Research*, 9(3)