

# **The Impact of Artificial Intelligence on Financial Performance: A Sample Study of Iraqi Banks**

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## **Abstract**

Previous studies have not investigated directly at the influence of AI on the financial performance of the banking industry in Iraq. To address this gap, our research examines the influence of AI on the financial performance of the banking sector in Iraq. For this objective, we utilized secondary data sources from data streams and bank annual financial reports. This data covers the year 2025. In addition, we gathered data from 120 bank workers for descriptive and demographic purposes. All analyses were carried out using SPSS software. The findings revealed that AI has a positive and significant influence on banks' financial performance. Our research gives practical suggestions on how banks might employ AI to enhance their performance while requiring minimal human engagement and greatly increasing operational efficiency.

Keywords: Artificial intelligence, financial performance, Banks, Regression, Automation

## **1. Introduction**

It is one of the most major technological advances that is fundamentally altering many different sectors, including artificial intelligence (AI) in enterprises. This revolution is occurring with the help of this technology. Recent years have seen a number of Iraqi banks use artificial intelligence (AI) technology in an effort to improve the quality of service they provide to their customers and to increase the effectiveness of their internal operations. The use of artificial intelligence (AI) by Iraqi financial institutions makes it possible for them to deploy customer experience bots that are powered by AI to provide individualized services to their customers. Consumers may get quick responses from these bots at any time of the day or night. In addition, artificial intelligence helps to improve the user experience by making it possible to provide tailored suggestions for financial products. This has the effect of enhancing the overall quality of the user experience. Artificial intelligence has a remarkable capacity to collect data from a wide range of sources, such as the online transactions carried out by Iraqi banks, mobile, digital payment systems, and direct connection between staff and consumers. This makes it feasible for AI to do this. These data can be evaluated by AI in a quick and accurate way, which allows it to find patterns of customer behavior and offer deeper insights that may aid in

making strategic decisions that are both more accurate and more exact. Procedures that are automated using: AI technology has the potential to aid in automating a variety of routine banking tasks, including but not limited to financial reporting, order processing, and data entry operations. It is because of this that both the reduction of expenditures and the increase of efficiency are greatly assisted (Abrokwah-Larbi, & Awuku-Larbi, 2023). Credit Analysis: Asian Iraqi banks rely on AI to assess customers' ability to repay loans by analyzing big financial data. The intelligent system can predict loan risks more accurately than traditional models. Examples of AI applications in world companies: Industrial and Commercial Bank of China (ICBC): uses AI to improve customer service through chatbots and data analysis to offer personalized financial products. (Omar et al., 2017 & Loong Ko, & Siripipatthanakul, 2023). Challenges and opportunities: despite the significant benefits of AI, there are challenges related to privacy protection and the high cost of implementing these technologies, training the employees in banks to work on AI, which helps to achieve high-level financial results and gives quick results to problems in banks. There is also a need to train human resources to keep pace with these new technologies. Modernization: AI represents a significant opportunity for Iraqi banks to expand their customer base and achieve higher sales by offering more services. It also contributes to improving operational efficiency and reducing costs. The fact that the performance of the banking sector is not as successful as it ought to be is the primary issue that this study aims to address. Therefore, the purpose of this research is to investigate the degree to which artificial intelligence has a positive influence on the banking industry, particularly with regard to the performance of the sector. Another essential and major contribution that our study makes is that it takes into consideration data from the years 2020 to 2025, in addition to using both primary and secondary sources of information. Furthermore, we have made a substantial addition to the body of literature by presenting a theory that is relatively fresh and effective. Following the presentation of an introduction in the first section of the study, a literature review is presented in the second section, the research technique is presented in the third section, the findings are presented in the fourth section, and lastly, the conclusion and suggestions are included in the final section.

## **2. Literature review and hypotheses development**

### **2.1. Theory**

Growth was projected by the Fred Davis Technology Acceptance Model (TAM). TRA claims PU and PEOU limit tech adoption. Perceived utility evaluates how much technology will improve financial performance, whereas perceived ease of use reflects its simplicity. Perceptions affect IT use and behavior. TAM may be used to study AI in banking. Worker opinions affect the value of AI systems like robo-advisors, fraud detection, and virtual assistants. Organizational support and training affect banking AI adoption. Financial services organizations may improve staff perception of ease-of-use using training and AI. Efficiency, customer service, and risk management improve AI utilization and financial performance. Positive user experiences and perceived value improved technology adoption and performance. The Unified Theory of Technology Acceptance and Use was produced by TAM. This original TAM may still study early-stage technology adoption, such as AI in developing countries, where ease of use and perceived advantages are key. TAM evaluates branch, department, and job AI adoption in Iraq, where certain financial institutions are still using it.

### **2.2. Literature review**

Previous studies linking artificial intelligence (AI) to companies' financial performance demonstrate growing interest in using AI technologies to improve financial operations within Iraqi banks and increase financial efficiency. The following are some of the areas that earlier studies have

concentrated on in this field: data analysis and financial forecasting. Several studies have shown that AI can help Iraqi banks improve their ability to predict financial performance by analyzing massive amounts of financial data using techniques such as machine learning and big data analysis. These techniques contribute to improving the accuracy of forecasting future revenues, expenses, and risks. Improving credit decisions: Studies have shown that Iraqi banks that rely on AI to analyze customer credit profiles and improve their credit ratings increase their ability to more accurately identify risks. This can contribute to reducing non-performing loan losses and increasing company profitability. Automating Iraqi banks' operations: AI helps automate many routine processes that previously relied on manual labor, such as customer service via chatbots, payment processing, and identity verification. This reduces operational costs and increases efficiency (Milana, Ashta, 2021).

Risk Management: Other studies demonstrate that AI enhances the ability to assess risks more accurately and quickly. For instance, AI can be utilized to analyze market data and predict price fluctuations, helping Iraqi banks make informed financial decisions based on real data. Innovation in company by using AI contributes to innovation in iraqi banks services, such as improving customer experience through personalized services, providing intelligent financial advice, and improving digital systems. These innovations can improve customer satisfaction and thus recover the company's financial performance. Quantitative Analysis and Financial Planning: AI technologies support advanced quantitative analysis, helping Iraqi banks develop more effective financial strategies. These technologies can improve future financial planning and help improve returns on investments. Sentiment Analysis in Markets: Using AI to analyze unstructured data, for example, news or social media, to identify general developments in financial markets may help Iraqi banks predict market volatility and improve strategies to improve the company's overall performance (Lachuer, & Jabeur, 2022 & Izzaty Roszelan, & Shahrom, 2025).

Numerous studies have shown that Iraqi banks that rely on AI achieve better financial performance compared to traditional companies. This is due to the ability to reduce costs and improve the quality of services provided. Despite the many benefits, there are also challenges in relating AI in companies, for instance, security issues, data privacy, and legal issues connected to the usage of AI technologies in financial decisions. Therefore, previous studies indicate that artificial intelligence represents a significant opportunity to improve the financial performance of companies, but with the need to address (ng, & Hashim, 2019 & Khalid, 2020).

The importance of information is hence evident from a banks's perspective, which displays a few things about AI and financial performance". Therefore, this paper explains this contribution by examining this connection by proposing:

**H1:** There is a statistically significant correlation between artificial intelligence applications and financial performance in the Iraqi banks.

### **3.Research methods**

AI has become an essential part of improving companies' financial performance, contributing to improved efficiency, reduced costs, and increased customer satisfaction. There are several approaches used to integrate AI into companies' financial performance, which can be briefly in the next points: Big Data Analytics: AI is used to analyze the massive data Iraqi banks collect from financial transactions and customers. This helps Iraqi banks extract useful insights into customer behavior, economic trends, and predict future needs. This leads to improved financial performance by providing

targeted and accurate services. Machine learning: Iraqi banks can use “machine learning” techniques to examine historical transaction data and forecast market developments. This technology allows Iraqi banks to improve investment strategies, identify risks, and enhance financial decision-making. AI in risk management, the AI is used to analyze risk data, such as credit risk or market risk. Using techniques such as neural networks, Iraqi banks can better identify high-risk customers or anticipate financial crises.

Iraqi banks are using “AI-powered chatbots and virtual assistants to develop customer service”. This not only increases customer experience but also assistances decreased e the companies’ operational costs. Artificial Intelligence in Fraud Control. Iraqi banks rely on AI to identify suspicious patterns in financial transactions, which helps with early detection of financial fraud. Through AI algorithms, iraqi banks can examine transactions and analyze data in real time to reduce losses resulting from fraudulent activities. Improving marketing and advertising strategies, the AI helps improve companies' marketing and advertising strategies by analyzing customer data and behavioral patterns. This contributes to tailoring financial offers and products to suit customer needs and preferences, enhancing the company’s financial returns (Shiyyab et al., 2023).

Financial personalization and analysis, using AI technologies, iraqi banks can provide modified financial advice to customers depend on sophisticated analyses of their financial behavior, strengthening bank-customer relationships. All these methodologies directly contribute to improving the financial performance of iraqi banks by increasing operational efficiency, reducing risks, and providing better services to customers, which positively reflects on financial performance and profitability.

The study methodology of this paper depends on the “empirical analysis”. It dealt with the “independent variable”, artificial intelligence, and the corporate financial performance. The study population included 112 Iraqi banks in Iraq. This paper utilized the OLS regression to examine the model. “The measurements of all the variables mentioned as below”. The variables measured in this paper are the AI measured by using the disclosure, when the company discloses AI information refers to 1 when the company does not disclose any AI information refer to 0. The corporate financial performance is measured by using return on assets (ROA). “Company size measured by the natural logarithm of the total assets” at the date of the Iraqi banks' financial companies. The age of the company is tested by employing the log of a number for the years since its establishment.

This paper displays the model that is associated with the association between two basic variables in which displays the impact of artificial intelligence and the financial performance in Iraqi companies. The model regression in this paper shows this relation.

$$FP =_{it} \beta_0 + \beta_1 AI_{it} + \beta_2 CSIZE_{it} + \beta_3 CAGE_{it} + \varepsilon$$

#### **4. Results**

AI impacts banks' financial management and contributes to enhancing operational efficiency, enhancing customer experience, reducing risk, and facilitating financial innovation (Muhammad, Yulia, & Haim, 2024). AI can help target the right customers: AI helps Iraqi banks better identify target groups, increasing the chances of selling appropriate financial products to customers, thus improving investment strategies. AI can be used to analyze financial markets more deeply, helping Iraqi banks make informed investment decisions. The findings of this paper are explained below.

**Descriptive statistics test**

**Research Sample and Reliability Analysis**

For testing the research hypotheses, a questionnaire was designed to collect the opinions of employees in several Iraqi banks, who are directly involved in financial, accounting, and regulatory work, in order to measure the level of use of artificial intelligence technologies and their impact on the bank's financial performance.

3.1 Total Questionnaires Distributed

3.1.1 Number of Questionnaires Distributed:

Table 1: Total Sample of the Study			
Details	Total Distributed	Valid	Excluded
Number	120	96	24
Percentage	100%	80%	20%

3.1.2 Academic Achievement

Table 2: Research Sample by Academic Qualification				
	Higher Education	Basic Education	Diploma	Bachelor's Degree
	18	52	26	96
	18.7%	54.2%	27.1%	100%

3.1.4 Cronbach's Alpha for Measuring Reliability

Table 4: Cronbach's Alpha

Cronbach's Alpha	N of Items
0.812	20

The alpha coefficient value (0.812) indicates that the measurement tool has a high degree of internal consistency, suggesting the reliability of the questionnaire and its potential dependability in measuring the research variables.

3.2 Descriptive Analysis and Results Interpretation

The responses from the sample were analyzed based on the questionnaire items using statistical methods such as percentages, means, and standard deviations.

3.2.1 Analysis of Sample Responses by Questionnaire Items

Analysis of the Table

The table presents the descriptive statistics of respondents' perceptions regarding the impact of artificial intelligence (AI) on the financial performance of Iraqi banks. The results indicate that AI plays a significant and positive role in enhancing various financial and operational aspects of banking performance.

The mean values range from 3.29 to 4.32, which reflects a moderate to high level of agreement among respondents on the importance of AI applications in improving financial performance. The relatively low standard deviations for most items indicate consistency in respondents' opinions.

Item (2), *Artificial intelligence contributes to enhancing transparency and accuracy of financial information*

**Analysis of the Table**

The table presents the descriptive statistics of respondents’ perceptions regarding the impact of artificial intelligence (AI) on the financial performance of Iraqi banks. The results indicate that AI plays a significant and positive role in enhancing various financial and operational aspects of banking performance.

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Item (2), “Artificial intelligence contributes to enhancing transparency and accuracy of financial information

All indicators of success as demonstrated by the Research. This indicator also had the highest standard deviation from the Research Sample, indicating a relatively high level of variation among the responses provided regarding the relationship between banks' use of Artificial Intelligence (AI) and the improvement in the reliability and quality of financial statements provided to their clients. The majority of Research Participants agreed that Banks’s use of AI is essential to provide accurate and reliable financial information to the public. There were high mean scores in paragraphs (1), (3), (5), and (7). The highest mean score is found in paragraph 10, while the highest standard deviation is found in paragraph 11. The mean score of (4.18) for paragraph (1) indicates that when banks incorporate AI into their decision-making process, they are better able to make timely, effective, and accurate financial decisions. The mean scores of paragraphs (3), (5), and (7) all reflect the same general conclusion. The mean scores show that AI has a positive effect on increasing the financial performance of financial institutions as it relates to: (3) Profitability; (5) Risk Assessment, and (7) Operational Efficiency. transaction time and the accuracy of financial transactions. Although financial stability is not as clearly defined as profitability, risk assessment, or operational efficiency, banks that successfully integrate AI into their existing operations will likely experience improved financial performance through a combination of all four measures. Using AI to reduce costs associated with banking operations has not been fully appreciated at this time. For instance, the mean score for paragraph 12 is the lowest of all of the paragraphs (3.29) and has the highest standard deviation (0.274). The high level of variation in this area indicates that there are mixed feelings among the Research Sample regarding whether or not AI will help banks reduce costs. As such, the contributions made by banks to their operational cost reductions using AI have not yet been fully realized or understood by banks operating in Iraq. Paragraphs (10) and (11) in relation to the use of AI in Operational Efficiency also have high mean scores when compared to the combined overall average for banks' use of AI based on the results from the Research.

NO	Statement	Mean	Standard Deviation	Variation Degree	Relative Importance
1	Artificial intelligence improves the efficiency of financial decision-making in banks.	4.18	0.624	0.149	2
2	Artificial intelligence contributes to enhancing transparency and accuracy of financial information.	4.32	0.587	0.136	1
3	Artificial intelligence helps improve risk assessment and credit analysis.	4.05	0.702	0.173	4

4	Artificial intelligence supports forecasting financial performance more accurately.	3.89	0.748	0.192	6
5	Artificial intelligence contributes to improving profitability indicators in banks.	4.11	0.681	0.166	3
6	Artificial intelligence enhances cost control and financial planning processes.	3.74	0.812	0.217	8
7	Artificial intelligence improves the speed and efficiency of financial operations.	3.96	0.734	0.185	5
8	Artificial intelligence contributes to optimal utilization of financial resources.	3.68	0.779	0.212	9
9	Artificial intelligence improves the quality of financial reports issued by banks.	3.82	0.716	0.187	7
10	Artificial intelligence enhances banks' ability to detect financial fraud.	3.55	0.854	0.241	10
11	Artificial intelligence supports compliance with financial regulations and standards.	3.47	0.889	0.256	11
12	The use of artificial intelligence contributes to reducing operating costs in banks.	3.29	0.901	0.274	12

### 3.3 Testing Research Hypotheses and Interpreting Results

This section aims to test the research hypotheses in order to determine whether they can be accepted or rejected, based on appropriate statistical methods. The study relies on simple linear regression analysis to examine the impact of artificial intelligence as an independent variable on financial performance as the dependent variable in Iraqi banks. The analysis includes the correlation coefficient (R) to measure the strength of the relationship, the significance level (Sig.) to determine statistical validity, the F-value to assess the overall significance of the regression model, and the coefficient of determination (R<sup>2</sup>) to explain the proportion of variation in financial performance attributable to artificial intelligence. In addition, the beta coefficient ( $\beta$ ) and the t-test are used to evaluate the magnitude and significance of the effect between the study variables.

#### 3.3.1 Testing the First Hypothesis:

"There is a significant correlation between social accounting and the increase in the economic unit's value.

The Pearson correlation coefficient was used to examine the relationship between social accounting and the increase in the economic unit's value. The results are presented in Table (6)

Independent Variable	Dependent Variable	Correlation Coefficient (r)	Significance Level (p)
Artificial Intelligence	Financial Performance	0.584	0.000

The Pearson correlation analysis shows a moderate positive relationship between artificial intelligence and financial performance in Iraqi banks. The correlation coefficient ( $r = 0.584$ ) indicates that improvements in the adoption and use of artificial intelligence are associated with noticeable, but not excessive, improvements in financial performance. The significance level ( $p = 0.003$ ) is below the accepted threshold of 0.05, confirming that this relationship is statistically significant. These results suggest that while artificial intelligence positively contributes to financial performance, other factors also play an important role in shaping financial outcomes in Iraqi banks.

### 3.2.2 Testing the Second Hypothesis:

Simple linear regression analysis was used to examine the effect of artificial intelligence on financial performance in Iraqi banks. The results of the regression analysis are presented in Table (7).

Table (7): Impact of Artificial Intelligence on Financial Performan

Independent Variable	Dependent Variable	Correlation R	R <sup>2</sup>	F-value	Significance F	Constant (a)	Beta (B)	t-value	Significance t
Artificial Intelligence	Financial Performance	0.584	0.341	35.571	0.000	0.412	0.647	5.964	0.000

The results indicate that artificial intelligence has a positive and statistically significant effect on financial performance in Iraqi banks. The correlation coefficient ( $R = 0.584$ ) reflects a moderate positive relationship between the two variables. Moreover, the coefficient of determination ( $R^2 = 0.341$ ) shows that artificial intelligence explains approximately 34.1% of the variance in financial performance, while the remaining percentage is attributed to other influencing factors not included in the model.

The calculated F-value (35.571) is statistically significant at the level ( $p = 0.001$ ), indicating that the regression model as a whole is valid. In addition, the t-test results confirm that the beta coefficient ( $\beta = 0.647$ ) is statistically significant, demonstrating that artificial intelligence has a meaningful impact on financial performance.

## 5. Conclusions and recommendations

Artificial intelligence (AI) has become an essential tool impacting various industries, including businesses in financial and banking. With regard to financial performance, many conclusions and recommendations can be drawn when integrating AI into corporate operations. This study found a positive and essential link between AI and the financial performance of Iraqi companies. Improving operational efficiency: AI contributes to improving corporate operational efficiency through automation and reducing the need for human intervention. Using technologies such as “machine learning”, Iraqi banks can automate many processes, for instance, “data processing”, monitoring financial transactions, and analyzing customer data, thereby reducing costs. Predicting financial trends: AI can practice “machine learning algorithms to analyze historical data and predict future trends”. These predictions help Iraqi banks make strategic financial decisions, such as allocating resources or providing loans based on available data. Improving customer experience: AI can be utilized to effectively analyze customer data and improve customer service, such as using chatbots to provide immediate support or recommend financial products based on customer needs. Improving risk management: AI can enhance companies' risk management capabilities by detecting unusual patterns in financial transactions and predicting fraudulent activity. It can also be used to analyze risks associated with loans and investments. Innovation and product offerings. AI opens the way for Iraqi

banks to offer innovative financial products, such as predictive analytics for portfolio allocation or the use of AI in personal financial applications. Furthermore, as a result of the study's practical suggestions, it is abundantly evident that financial institutions need to use AI-based technologies in order to enhance their overall performance. When applied to domains like as credit scoring, risk management, and fraud detection, artificial intelligence (AI) has the potential to improve the accuracy and timeliness of judgments while simultaneously lowering the need for human involvement via the automation of routine and repetitive operational activities. Not only will this cut down on operating expenses, but it will also cut down on mistakes by a large amount. Additionally, chatbots and virtual assistants have the ability to give clients with services that are both constant and improved, which will lead to an improvement in customer happiness. AI-based data analytics should be included into strategic decision-making at the management level of banks, particularly with respect to the rules governing investment and lending. While this is going on, it is essential to make sure that employees get sufficient training, as well as to have robust cybersecurity and data protection safeguards in place, so that the efficient use of technology can also help to keep the confidence of customers.

The findings of this research suggest that Iraqi financial institutions should make investments in digital infrastructure, including sophisticated servers, large data stores, and sophisticated AI tools, in order to guarantee that they reap the full benefits of these innovations. Training for employees is ongoing. Employees should be taught how to understand and analyze data, as well as how to utilize smart technologies in their everyday job. It is essential to provide them with training on how to use these technologies. Additionally, the capabilities of bank workers in the use of AI technologies may be improved. In order to secure the adoption of new technical solutions and optimize the advantages that these solutions provide, Iraqi banks should engage with other Iraqi banks that provide sophisticated AI technologies. Because AI processes enormous volumes of sensitive data, Iraqi banks need to beef up their security measures in order to ward off potential fraudsters who would use these technologies to commit fraud. Creating strategies that are sustainable means: If Iraqi banks want to reach their financial objectives in a sustainable manner, they need design strategies that make use of artificial intelligence (AI), while also taking into consideration the social and environmental factors that have an influence on their operations. Furthermore, artificial intelligence has the potential to improve operational efficiency, raise the predictability of financial risk, and deliver creative solutions for the customer experience. In a nutshell, AI has a huge influence on the financial performance of businesses. Nevertheless, in order to capitalize on these technologies to their full potential, significant expenditures in technology and personnel training are required.

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