



## Effectiveness of AI-Driven Knowledge Management System in Improving the Performance of Banking Sector in Jordan

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### Abstract

The present research examines the benefits of implementing knowledge management (KM) principles in the Jordanian banking sector to enhance performance. The study emphasizes the significance of Artificial Intelligence (AI) and how Jordanian banks utilize it to improve the quality of customer service they provide. This study targets managers at all levels and focuses on the Jordanian banking sector as its research environment. A questionnaire is created to gather information from a random sample to achieve the research's objectives. The study involves a sample of 250 managers. Additionally, the research adopts a descriptive methodology, and SPSS is used to analyze the data. The statistical findings provide robust

evidence for the importance of performance expectations, social influence, and perceived risk in influencing consumer intentions. Marketers and decision-makers within the banking industry can leverage these insights to shape their long-term strategies for effectively utilizing and maximizing AI technology in the banking sector. Furthermore, by providing policymakers and practitioners of Jordanian commercial banks with insight into the variables influencing user satisfaction, the findings will help these complex institutions operate more effectively.

**Keywords:** Artificial intelligence (AI), Banking sector, Customer satisfaction, Jordan, Knowledge Management, Service quality.

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## Introduction

As a developing country with few resources of natural origin, Jordan's service sector plays a key role in its enlargement and social well-being. Jordanian banks offer loans to people, businesses engaged in production, and farms to enable them to make profitable investments at the beginning and, as a result, boost Jordan's economic development. When banks continue to function well, it will boost their profitability as well as boost the growth and enhancement of a nation's economy. In Jordan, banks are seen as tremendously significant financial institutions that seek to make money by providing a range of services to clients while managing a variety of risks. Taking risks is usually thought of as the single best predictor of financial success. Yet, the Jordanian banks' evaluation of granting credit is unique. This calls for manually evaluating each loan request while enforcing the credit executive's biases, which include expertise, personal insights, and instinct. In a small number of institutions, systems of credit scoring have taken the place of this method to make informed credit choices. Banks, on the other hand, store information about customers in data warehouses, which may be thought of as hidden knowledge resources that are accessible and utilized by data mining tools. As a result, to increase the predicted accuracy of credit risk assessments, Jordanian banks with responsibility for managing credit must develop more practical systems (Alzeaideen, 2019). Because of Jordan's extensive economic liberalization, the banking industry there performs a significant part in the nation's transition to free market commerce. As a result, this industry is regarded as one of the foundational cornerstones of the Jordanian economy. The potential for growth and diversity in the banking industry is immense. It made up 44.6% of the entire stock market capitalization and 18.7% of the GDP in 2004. The government of Jordan has thus been

paying close focus to the growth of banking organizations. The major goals of this initiative are to raise the standard of banking services, strengthen this industry's competitive edge, and promote foreign investment in the nation. By the end of 1999, there were 22 domestic and 5 foreign business banks functioning in the nation, with an organizational structure of 466 branches that are crucial to the growth of the Jordanian economy (Madanat, 2018).

Organizations are realizing more and more that information is the most priceless asset and the finest foundation for enhancing their competitiveness. Ensuring the appropriate knowledge and its resources are timely access to the appropriate individuals is the essence of managing knowledge. The most crucial aspect of knowledge management is sharing information because knowledge has the extraordinary property that its worth grows whenever workers have immediate accessibility to, actively utilize, and share it. Yet, the capacity and desire of knowledge employees to engage, seek out, or be responsive to information resources is essential to the effectiveness of knowledge management activities (Frost, 2015). Assessing and promoting information exchange among employees is therefore essential for maintaining a competitive advantage. Thus, it is crucial to look at the factors that influence real knowledge-sharing behavior as well as employees' motivating intentions to do so. Knowledge management (KM), which involves distributing, discussing, and developing information and then passing it on to the business's future members, has emerged as an essential resource for achieving a sustained competitive edge (Trivellas, 2015). The six components of knowledge management—creation, capturing, organization, preservation, propagation, and application are divided into tangible written or verbal tacit expertise and intangible explicit knowledge the latter of which must be utilized and handled successfully after being transformed from tacit knowledge into explicit knowledge the latter of which is intangible because it is derived from the worth, expertise, opinions, and know-how of employees and how to apply them effectively (Al-Abdullat et al., 2015). Arab firms must comprehend the phenomena of knowledge management system utilization. The Arab setting has seen minimal study about systems for managing knowledge. Most banks in poor countries, including Jordanian banks, continue to be unwilling to generate and use their organizational knowledge to its fullest potential (Easa, 2019). Certain Arab organizations, who insist on utilizing the conventional ways for knowledge management varied practices, nevertheless do not want the knowledge management framework. Due consideration ought to be provided to the Jordanian banks' use of appropriate knowledge management technology for them to develop the core competencies necessary for them to finish more successfully in the current dynamic marketplaces (Amyan, 2020).

In a market that is controlled by customers, strong customer relationships are an essential strategic source for businesses (Li et al., 2020). The objective of a banking institution, including customer satisfaction, can be achieved through the implementation of customer relationship management (CRM) strategies to manage its interactions with customers, clients, and prospects for sales. It involves using technology to coordinate,

automate, and organize business processes. CRM seeks to boost revenue, profit, and satisfaction with customers. Many businesses use a variety of instruments, technologies, and procedures to support customer relationships to boost revenue and accomplish CRM. So, rather than being technology trouble, CRM becomes more of an organizational plan and procedural issue. CRM is a tactic for managing a company's interactions with customers, clients, and prospective customers (Azzam, 2014). The competitive edge of e-commerce businesses may be significantly increased by enhancing customer interactions and CRM effectiveness. CRM frequently makes use of the eccentric emerging technology known as AI to get a competitive edge (Saura, 2021). Businesses use technology to handle various marketing initiatives, as well as to attract, keep, and handle loyal clients. A significant amount of consumer data may be handled and analyzed by Artificial Intelligence (AI) to create insights that assist organizations in making better choices and responding immediately to client needs (Johnson et al., 2022). Additionally, AI may provide tailored suggestions to customers, cutting the cost of data searching and enhancing the compatibility of customers and goods (Olan, 2022). The use of AI in marketing apps creates an interactive setting that may quickly satisfy client needs and build a sizable consumer base for enterprises, enhancing CRM effectiveness (Al-Kasasbeh et al., 2011). Financial companies are unable to afford to disregard digital developments in the current banking environment; they are now required to do so to compete in an increasingly competitive market and meet shifting client demands (Valsamidis et al., 2020).

AI has been the primary engine driving many emerging digital technologies in the period of contemporary banking, disrupting traditional banking pathways, assistance, and solutions in novel ways. Banks may save \$447 billion by 2023 by utilizing artificial intelligence-based software. Approximately eighty percent of banks in the USA are aware of the potential benefits that AI may offer (Digalaki, 2019). The advancement of AI has created a broad spectrum of opportunities and difficulties. The use of AI in the banking industry has made sales go more smoothly and helped develop effective methods for maintaining client interactions (Tarafdar, 2019). Despite the reality that automation of the credit rating, evaluation, and rewards process is utilized as a major goal, capabilities have emerged to support internal procedures and activities. Considering how heavily they depend on data and experience to develop their products and services, banks today immediately need to employ systems for managing knowledge (Cham et al., 2016). The business operations of the bank may be improved in terms of efficiency and effectiveness to fulfill stakeholder and customer requirements (Putri et al., 2019). Thus, it is advised that bank workers become sufficiently skilled at gathering and putting to use the necessary information for making strategic judgments (Easa, 2019).

Modern automation and artificial intelligence are demonstrated by robots. ML is the process through which a computer learns and applies information on its own, allowing it to be used in a wide range of circumstances. Recent firm transformations have tended to reduce

certain of the initial complexities of tasks while increasing speed and efficiency (Filiari et al., 2021). Organizations may benefit from using AI better, cutting-edge technology to enhance problem-solving, work automated processes, and customer service. AI can be utilized to automate managing information tasks, enhance credit scores, and spot possibly fraudulent activities (Duan et al., 2019). Due to the characteristics of the modern global economy, artificial intelligence is used in almost all sectors, from taking deposits and borrowing to the banking sector and asset management. To improve speed, precision, and effectiveness, banks might therefore considerably benefit from automated data management that doesn't require human involvement (Ballestar et al., 2019).

Even though managers are becoming more aware of the value of AI technology, there continues to be a lack of expertise because of the paucity of relevant literature. Concerning the influence of AI usage on CRM efficiency, earlier research has offered contradictory findings. Although certain investigators claim that using AI increases customer satisfaction by giving customers access to detailed and reliable data, personalized customization, and precise problem-solving techniques (Rahman et al., 2023; Nazir et al., 2023) others contend that using AI decreases customer independence or makes consumers feel their interactions are forced, which lowers favorability and intention to purchase (Jan et al., 2022; Mikalef et al., 2021). The investigation into the issue concentrates on the reality that the majority of banking industry employees require ongoing advancement and growth to meet the strategic goals of the organization, making it highly difficult for organizations to hire competent workers owing to the dearth of qualified human resources (Abusalma, 2021). Thus, to increase staff efficiency and productivity, organizations turn to trained systems, artificially intelligent structures, and smart agents. To accomplish the required aims, they also enhance their abilities.

A wide range of organizations today are looking for an effective strategy to boost their productivity and accomplishments by creating and implementing new work practices that increase sustainable levels of high productivity and satisfaction with work. A well-known management concept that has grown essential to boosting a company's competitive edge is AI-driven systems for knowledge management. Additionally, it is acknowledged as a crucial instrument for boosting customer happiness, loyalty, and retention, all of which have a favorable impact on organizational success. The most valuable resources of an organization are managed strategically and coherently by an AI-driven system for knowledge management, which also aligns them with the strategic needs of the business. It is now understood that organizations may compete and win in business by obtaining a competitive edge through a qualified workforce.

The primary goals of the current research are as follows:

1. Evaluate the significance of AI-driven systems for knowledge management in Jordan's banking sector to enhance customer satisfaction.
2. Identify the essential components of an AI-driven knowledge management system utilized in Jordan's banking sector.
3. Assess the relationship between the knowledge management system and customer satisfaction in Jordan's banking sector.
4. Provide valuable insights and recommendations to Jordan's banking sector for fostering positive client relationships and satisfaction.

The subsequent sections of the paper are organized as follows: The literature review provides an overview of relevant scholarly works, setting the context for the study. Following that, Section 3 introduces a proposed conceptual framework and associated assumptions to guide the research. Methodological aspects are detailed in Section 4, outlining the procedures and techniques utilized in the study. Section 5 presents the findings obtained from the research, offering insights into the investigated phenomenon. Finally, Section 6 encapsulates the main conclusions drawn from the study, highlighting key implications and potential avenues for future research.

## **Literature Review**

The intended purpose of this work is to use a newly created Supply Chain Integration (SCI) model to analyze the effects of various links between SCI and internal monitoring of the economic performance in the Jordan bank industry. SCI includes both internal as well as external integrations. Consumer and supplier collaboration are examples of external connectivity. Utilizing survey responses from 249 banking industry personnel in Jordan, this investigation uses exploratory analysis of factors to assess the study's structure and hypothesis. The financial outcome was greatly impacted by both the internal and external combining of the supply chain as well as internal control. In order of decreasing significance, internal coordination, provider integration, client cooperation, and internal control all affect the financial outcomes. The two primary findings of this study concerning the leadership of the supply chain are the incorporation of SCI and internal supervision aspects to produce a practical framework for the banking sector to use and the development of a measurement tool for administrators to evaluate the effects of both outside and inside integration and internally control the financial results. The gathering of data was a cross-section which is a drawback of the study (Pakurár et al., 2019).

This study investigates how the Jordanian banking industry's supply chain integration has affected organizational effectiveness. Client and internal collaboration are the two subcategories of supply chain collaboration. Client, internalized, organizational capability,

and stewardship views are all included in an organization's effectiveness. The findings show a strong correlation between integration of the supply chain and organizational success. Comments from several of the examined banks offer proof of enhanced organizational effectiveness. Each of the four organizational effectiveness aspects is impacted by internal integration, while only the customer viewpoint is impacted by integration with customers. The findings imply that more consumer interaction might aid in the successful development of banks. At Jordanian banks, primary data was gathered through questionnaires. The study approach was put to examination using information from a sample (n=112) of Jordan's nine banks. An exploratory factor approach was used to assess the information. Multiple regression study findings demonstrate that supply chain collaboration has a considerable impact on organizational effectiveness. The scope of this study included several restrictions. Initially, the authors' administrative status presented a challenge since it was challenging to speak with executives or other officials in the administration at a higher rank. Secondly, since the research used closed-ended questionnaires as the primary gathering information tool, respondents were unwilling to provide in-depth responses on the impact of integrating supply chains on organizational efficiency using the balanced scoring approach (Pakurár et al., 2019).

The current analysis examines the economic supervision of Jordanian-listed banking at that point in time to ascertain whether the COVID-19 pandemic influenced the efficiency of Jordan banking's economic supervision during the outbreak. To determine the effectiveness of Jordanian banks throughout the COVID-19 epidemic, this investigation also uses a method of quantitative study and integrates financial oversight aspects such as managing liquidity, financial achievements, return on capital, and resources. Financial performance metrics for banks listing on the stock exchange in Amman are displayed in the study. The economic success of these banks has been determined to have been impacted by the epidemic. The ratio of debt to assets has grown, which has had a considerable negative influence on financial outcomes, even though the overall assets (size) of the banking industry have expanded on one side. The findings so indicate that the Jordan government and banks should continue to focus on enhancing the health of Jordan's banking system's finances and eliminating COVID-19's impacts on the sector. Additionally, the Central Bank of Jordan's regulations play a vital part in the listing banks' performance. This study has demonstrated that Jordan has an efficient banking sector that is capable of handling such unforeseen circumstances due to its effective financial management practices. To additionally contribute to the nation's economic growth, the Jordanian government ought to improve the skills of the financial services sector therein (Aldomy, 2022).

For equitable growth to take place, banks must satisfy the demands of their clients. This study looks at the SERVQUAL strategy to improve quality of service measurements, including tangibles, adaptability, compassion, confidence, trustworthiness, accessibility, financial element, and employee competencies, and how they affect client fulfillment in Jordanian banks. 825 clients in the Jordanian banking industry provided the information. The

SPSS program statistically evaluated the collected data using exploratory factor analysis to establish the opinion of customer service and their satisfaction. The findings show that instead of eight subsections as in the first approach, the updated SERVQUAL Model only retrieved four subscales in the updated version. Four characteristics make up the initial subscale: confidence, dependability, accessibility, and staff competencies. The ability to respond and empathic aspects constitute the following subscale. The economic aspects and tangible aspects, the third and fourth subscales, are different elements. To increase overall satisfaction among consumers in the banking industry, further research should take into account the factors of access, the financial aspect, and personnel competencies as vital components of the dimensions of service quality along with the remaining subscales. The updated SERVQUAL approach, from the authors' perspective, helps tackle consumer satisfaction in the banking industry. In some industries, it is not possible to measure service quality using the standard metrics (Pakurár et al., 2019).

Among the most recent offerings provided by commercial banks in Jordan is the beginning of financial services through mobile devices on a big scale. As the researcher links financial services via smartphone to affect client E-satisfaction, customers are therefore obtaining financial services on their smartphones without needing assistance from bank personnel when performing banking operations via handheld devices. This investigation employs seven criteria that are essential to deliver this type of service which are as follows: trustworthiness, adaptability, confidentiality, accessibility, simple navigation, effectiveness, and security. This investigation's objective is to ascertain how using banking services via handheld devices affects customer e-satisfaction. This study highlights the importance of the mobile banking sector and the need to focus on the services provided by banks. The research samples included 360 consumers out of 400 who used mobile banking facilities at the following four banking institutions: Capital Bank, HSBC Bank, Union Bank, and Jordan Ahli Bank. Each of the hypotheses was verified using simple regression, and the findings showed that using mobile banking support has an impact on customer online satisfaction. The results demonstrated that every aspect of the mobile banking platform and customer online fulfillment had a potentially important link. According to a straightforward analysis of regression, accessibility, and secrecy are more crucial for mobile banking functions than other characteristics. The research recommended that the bank invest a greater amount of time and money in introducing and expanding mobile banking capabilities to attain customer E-satisfaction. It strongly advises enhancing the level of service to boost client e-satisfaction, meaning the dependability dimensions are crucial for promoting excellent service (Asfour et al., 2014).

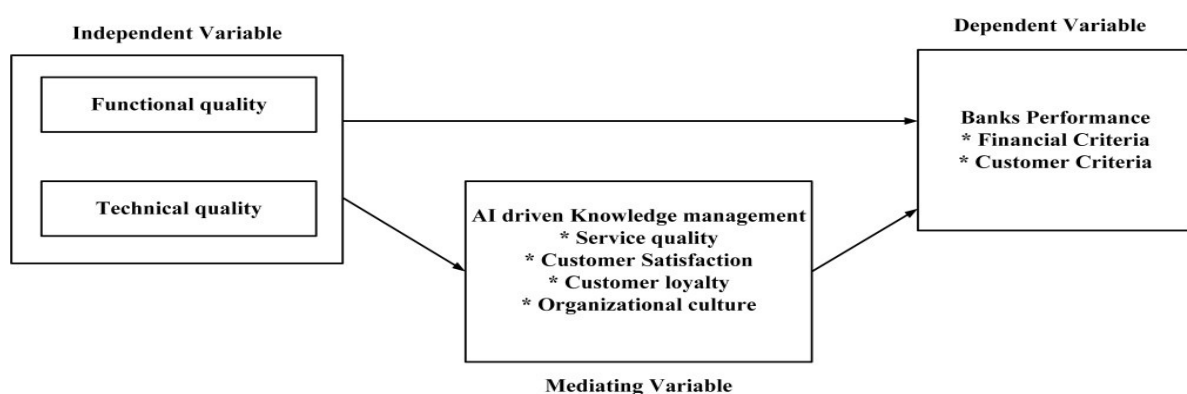
Utilizing investigating the standard of employment as a mediator variable in Jordanian financial institutions, the present research sought to determine the efficiency of organizational DNA with its elements in attaining cutting-edge performance in those areas. The investigation depended on a quantitative strategy that was suitable for its goals. The research group was



made up of each of the branch executives of Jordanian commercial banking institutions, which totaled 13 banks and 638 branches. The research method employed was the publication of an electronic questionnaire (217). The surveys were entirely completed, and valid for statistical evaluation, and many statistical techniques that matched the research's goals were applied. In Jordanian banking organizations, the examination found a statistically significant connection between organizational DNA and the components that were examined to achieve successful leadership. It also found a statistically significant connection among both dependent and independent variables through a mediation aspect of Jordan banks. Several suggestions were put forward, the most crucial of which is that the upper management of the investigated banks pay consideration to activate decentralization and allow employees to be involved in making choices associated with their work, forcing individuals to adhere to and safeguard the choices that are implemented, and enhancing the organizational framework so that it is adaptable and aids employees in achieving the objective of those financial institutions via enhanced systems. To enhance the services offered with better levels of excellence and creativity, both internal and external interaction is necessary (Nawahda et al., 2022).

### Framework model

The following are the key aspects that set the present research apart from other relevant past studies that have been analyzed and examined concerning the study's topics. To establish the potential impact of every aspect on the Jordanian banking sector, this study investigates four deployment variables for AI: service quality, consumer satisfaction, customer loyalty, and organizational culture. Figure 1 depicts the model of AI-driven knowledge Management for enhancing the performance in Jordan's banking sector.



**Figure 1. Model of AI-driven Knowledge Management**

### AI-driven Knowledge Management on Service Quality

Millions of customers make recurrent transactions each day. Customers provide information as a result, which is handled and stored in a large database. Furthermore, the majority of

banking activities require a lot of physical work; however, AI has made it easier for them to do away with employee and customer labor. This traditionally difficult procedure has been brought to an unparalleled level of simplification due to the machine learning technique. The banking industry has also raised the caliber of its goods by offering a variety of workable solutions to ensure ease and protection. Technology is constantly developing, and it is best to use these advancements throughout all of a company's departments (Ameen et al., 2021).

H1: In the Jordanian banking industry, there is no statistically significant relationship between artificial intelligence and service quality ( $\alpha \leq 0.05$ ).

### **AI-driven Knowledge Management on Customer Satisfaction**

Artificial intelligence improves banking for millions of clients and bank workers. AI makes it possible to do a variety of tasks that need less work from staff members, like checking credit scores, predicting system failure, giving urgent warning systems, detecting fraud, identifying phishing websites, assessing the risk of liquidity, assessing retention of clients, and developing intelligent platforms. Similarly to this, numerous apps like virtual reality and mobile banking improve the customer experience. The accessibility of recently announced products and services created by banks to speed up banking operations captivates customers (Laketa et al., 2015). The quality of services a bank provides clients determines how efficient it is and gives it an edge over rivals.

H2: In the Jordanian banking industry, there is no statistically significant relationship between artificial intelligence and customer satisfaction ( $\alpha \leq 0.05$ ).

### **AI-driven Knowledge management on Customer loyalty**

Loyalty to consumers is a key factor in enhancing a company's sustainability by keeping current customers and establishing relationships. To do this, businesses engage in marketing operations to develop and preserve connections with customers and increase consumer value. To increase the value of customers via management, efforts are taken to recognize customer equity as an essential indicator of upcoming consumer behavior in the highly competitive.

H3: In the Jordanian banking industry, there is no statistically significant relationship between artificial intelligence and customer loyalty ( $\alpha \leq 0.05$ ).

### **AI-driven Knowledge Management on Organizational Culture**

Among the most significant problems in management practice is organizational culture. Given that it constitutes the standard that directs employee behavior and attitudes in every organization, it encourages more efficient administrative action and reflection on organizational operations. The kind of organization, its structure, and the strategy used by senior management are only a few of the many variables that influence how intense

organizational cultures are. Since it has such a strong impact on successful criteria such as excellence, efficiency, effectiveness, reliability of goods, client satisfaction, and creativity, an organization's culture is consequently highly important. As organizational culture is the cornerstone of effective knowledge administration, it is crucial to comprehend how it supports knowledge activities.

H4: In Jordan's banking industry, organizational culture has no significant positive effect on knowledge management ( $\alpha \leq 0.05$ ).

## Methodology

### Data Collection and Analysis

18 banking institutions that are active in Jordan and recognized by the Central Bank of Jordan make up the study's sample. Every manager functioning at bank headquarters who is engaged in creating and putting into practice quality of service plans is included in the study's sample. The study looked at every bank's organizational framework to see how many managers were based in the corporate office and involved in developing and executing excellent service policies. This procedure showed that 250 managers were employed at the banks' corporate headquarters, of which 170 managers were qualified to respond to the study questions.

In-depth interviews with bank managers were performed as part of this study to learn more about potential barriers to the adoption of AI-driven knowledge management. From January to March 2023, 10 in-depth interviews were conducted with bank management. The leaders were questioned on the variables that impacted the implementation of excellent service in their banks as well as the significance of these variables about the hypothesized connection among dimensions of service quality and profitability during the previous three years. The semi-structured interviews, lasting one to two hours each, were conducted face-to-face at the managers' workplaces. The managers who were questioned were selected depending on their positions and duration of banking expertise, and suggestions from other executives who described them as "professionals" to be evaluated for their knowledge and skills in the marketing of banking goods and services in Jordan. Utilizing content evaluation techniques, the transcripts of the qualitative information were examined to look for "common concepts" across every interview, which may vary from word to sentence. The main way of gathering information was a self-fulfillment survey. To analyze the results of the questionnaires, a five-point Likert scale with the choices "strongly agree," "strongly disagree," "somewhat agree," and "strongly disagree" was used.

### Qualitative Research

In-depth interviews with managers in the Jordanian banking sector were undertaken as part of this study to elucidate potential influencing variables. The managers all agreed that

implementing excellent service is a significant obstacle to achieving performance goals and an excellent standard of service. Managers concurred that getting other bank divisions to collaborate to deliver higher service quality throughout the execution phase constitutes one of the key challenges. Additionally, several managers emphasized the skills and knowledge that an excellent service team has to have to carry out a plan. Certain executives concentrate on developing an individual identity in the marketplace that enables a bank to offer high-quality services.

### **Statistics treatment**

The data collected from the responses to the study questionnaire is managed by the Statistics Package for Social Sciences (SPSS), which is used for carrying out the proper statistical analysis. To analyze the study's subjects, the research reports employed descriptive statistics including means, frequency ranges, and standard deviations. The validity and uniformity of the data collecting method (questionnaire) in this research were also evaluated using Cronbach's alpha test. The study report used multiple regression to assess the study's hypotheses.

### **Functional Quality**

The way that the technical quality is transmitted to the client is characterized as the functional aspect. It refers to the method by which the quality of service (the operational or process-related aspect) is provided to the client. The internal as well as external structure of the service firm, consumer and supplier conversations, firm assets, the internet, individual skills and excellence, the process of service tasks, and other conventional marketing elements are some of the factors that have an impact on the functional aspect of the dimensions.

### **Technical Quality**

The output of the service production procedure - communication in which the assets are employed (the technological or outcome aspect of the procedure), for example, the usage of a security deposit box in a banking institution - is what is meant by the quality of the technical aspect. There aren't many tools available to managers to evaluate the technical excellence of financial services. To create items to evaluate technical competence, executives were interviewed in-depth.

### **Business Performance Assessment**

To incorporate many aspects of service excellence, business achievement should be evaluated in several aspects within a larger definition of business effectiveness. Due to the business's multidimensionality, it is important to consider both financial-based (such as revenue and selling growth) and customer-based (such as customer fulfillment) metrics when assessing its success. The financial-based indications provide evidence of an organization's ability to

properly and effectively employ its resources to achieve its specified goals. The organization's success in providing value to its clients is shown by customer-based metrics.

### **Design and Development of the Questionnaire**

The procedure of developing and designing the questionnaire was performed following principles offered by marketing research study, depending on prior empirical studies, and included certain findings from the qualitative interviews done early in the project. The questionnaire was initially prepared, pre-tested, and then revised in an iterative approach to arrive at the best design via performing in-person interviews for designing pre-testing, and problem-solving.

### **Research Data Analysis, Validation, and Reliability**

The manager who worked at the bank's main office in Jordan served as the research's analytical section. The study is more interested in assessing managers' views of the quality of service and its execution than banks' viewpoints, which is why the manager is used as the basis of assessment. The validity of face and content validation are two separate types of validation that may be used to evaluate a scale's psychometric soundness. The level that which the scale elements are significant and seem to accurately reflect the concept being assessed is known as the validity of the face, and it is a subjective measure. A construct's or variable's content validity refers to how well its features were captured by the study measurements that were utilized. The reliability of the research topics might be evaluated by investigators by measuring Cronbach's Alpha Coefficient. Whenever the alpha coefficients are more than 0.60, it means that the measurements are good and trustworthy.

### **Hypotheses Testing Model**

To assess the proposed hypotheses, descriptive data analysis, reliability, associations, and multiple regression analyses were performed on the findings. To accomplish the study goals, the study results were acceptable for regression modeling and could be used to evaluate the study's hypotheses. Regression modeling was used for evaluating the study's model at four distinct phases. To investigate the connection between effectiveness and service quality parameters, multiple regressions were initially used. Secondly, partial regression models were used to investigate the connection among every aspect of service quality and effectiveness while accounting for every implementation-related variable to see if those factors act as a mediating factor in the interaction.

## Results

### Descriptive statistics

It was decided to create a questionnaire that would represent the goals and inquiries of the research. To 250 managers who work in the Jordanian banking industry, the questionnaire was given out. There were 150 respondents overall, and 10 responses were disregarded from the questionnaires that were submitted because they had numerous responses to the same topic or were otherwise incorrect. Only 170 replies were therefore thought to be reliable enough to use in the data evaluation. This section of the research's methodology relies heavily on the descriptive analysis of data to calculate the means and standard deviations for the study's constructs and related items. On a Likert-style scale, the subsequent questions were graded: Neutral: 3, strongly disagree: 2, agree: 4, strongly agree: 5, and disagree: 1. The research's sample was drawn from the Jordanian banking industry, and it estimated the means and standard deviations for the research's variables as well as the items depending on the answers. The mean and standard deviations for every of the research's constructs are then shown in Table 1 together with the research's elements.

**Table 1. Descriptive Analysis of AI-driven Knowledge Management**

Various Dimension	Mean	Standard Deviation	Rank	Level
Service Quality	3.860	1.04	5	Medium
Customer Satisfaction	3.721	1.12	4	Medium
Customer Loyalty	3.545	1.18	3	Medium
Organizational Culture	3.216	0.99	2	Medium
Overall Mean	3.585	1.08		Medium

### Evaluating Reliability

The reliability of the research constructs was assessed using Cronbach's Alpha Coefficient. The alpha coefficients imply sound and trustworthy measurements if they are greater than 0.60. The reliability of every factor is evaluated in the study using the criteria that if it has a value lower than 0.60, it is regarded to have low dependability. If the parameter's dependability is more than 0.60, the statistic is regarded as sound and dependable. The dependability coefficients for the research constructs are shown in Table 2. It demonstrates that each of the study's factors' reliability coefficients were higher than the alpha cutoff employed in this study, which was 0.60. Each of the factors' dependability coefficients fell within the range of 0.712 to 0.956. As a result, it is possible to rely on the measuring device and the constructions to evaluate the study information.

**Table 2. Reliability Coefficients**

Dimension	Reliability Coefficients
Functional Quality	0.925
Technical Quality	0.826
AI-driven Knowledge management	
Service Quality	0.956
Customer Satisfaction	0.912
Customer Loyalty	0.865
Organizational Culture	0.712
Performance Measure	
Financial Measures	0.924
Customer Measures	0.885

### Validating the Study's Framework and Hypotheses

The data were analyzed using descriptive statistics, reliability, correlations, multiple regression analysis, and regression partial correlation. These approaches were also utilized to examine the hypotheses. Regression analysis could be performed on the study's data and was successful in achieving the goals of the study by testing the hypotheses being investigated. Regression analysis was used in four different stages for evaluating the framework developed for the investigation. To investigate the connection between the effectiveness of the AI-driven knowledge management system and its aspects, multiple regressions were initially used. Secondly, partial regression models were used to investigate the connection among all aspects of AI-driven knowledge management and effectiveness whilst controlling for every component of service quality execution to see if those factors act as a mediating factor in the connection. The following technique was employed in this research to assess the impact of mediated factors: initially, the original association among every aspect of AI-driven knowledge management and efficiency was examined without taking the impact of mediating factors into account. The size of the  $r$  coefficient, the direction of the association (positive or negative), and its relevance have to be looked at concerning this connection. Secondly, while accounting for the impact of every mediated variable, regression partial correlations among every aspect of AI-driven knowledge management and efficiency are undertaken.

### Analysis and Findings

The study's approach was put to evaluation, and its four stages' hypotheses were looked at using numerous simple regression analyses. Table 3 shows the outcomes of multiple regressions on the efficiency of banking institutions for the operational and technical excellence categories. The results show that every indicator of performance and the service aspects of quality have a favorable and substantial association. Table 3 demonstrates that the quality aspects account for 25% (R Square) of the variability in profitability for banks. According to the data, the profitability of the banking institution has the most impact on its economic performance parameters related to service excellence. The findings of the reliability factors' multiple regression analysis on the banks' customer satisfaction are shown in Table 3.

The outcome shows a strong and positive correlation between consumer satisfaction and quality aspects. The results show that the operational quality dimensions have a greater impact on the efficiency of banks than their technical quality dimensions, as shown in Table 3. According to R Squares and Beta values, the operational factor accounted for the bulk of variances in the performance of banks. Evaluating the standardized beta coefficients for every model of regression in Table 3 has substantial and significantly higher than the technical quality confirms this. The beta coefficient, for instance, is 0.516 for profitability and 0.073 for technical excellence. These results offer H1 a lot of support.

Table 3 demonstrates that the quality factors account for 15.5% (R Square) of the difference in bank client fulfillment. According to the investigation, the bank's customer fulfillment has a 15.5% (R square) impact on client retention metrics, which highlights the importance of service quality's influence on customer contentment. As a result, the results back up hypotheses H2 and H3. The research on the quality of service that argued that service excellence correlates positively with business performance would receive strong support if this hypothesis were to exist.

**Table 3. Using Multiple Regression Analysis for Assessing Service Effectiveness and Qualities**

Variable	Overall Profitability	
The outcome of Multiple Regression for the independent variable	Coefficient of determination (0.25)	Significant F (0.0)
Functional Quality	0.516	0.00
Technical Quality	0.073	0.524
	Customer Satisfaction & Loyalty	
The outcome of Multiple Regression for the dependent variable	0.155	0.00
Functional Quality	0.412	0.00
Technical Quality	0.054	0.726

Whenever organizational considerations are taken into account, the regression r coefficients among functional excellence and economic performance have reduced, although all connections are still substantial. Therefore, part of hypothesis H4 is validated. When skill abilities are taken into account, the regression r coefficients among the functional aspect and financial outcome criterion have reduced, although all associations are still substantial. As a result, part of hypothesis H4 is supported.

## Conclusion

In Jordan's banks, knowledge management has just recently been developed and put to use. The bank mostly shares expertise internally and makes minimal effort to get knowledge from the outside world, especially its clients. Jordanian banks must improve their AI-driven knowledge for the enhancement of performance to manage data effectively. To investigate the relationships among service quality and artificial intelligence, customer fulfillment, customer loyalty, and organizational culture (the dependent variable), correlation analysis was used in



this study. There have been evaluations of the connections between variable dependence and artificial intelligence. The effectiveness of alternative regression models was also tested through these tests. The evaluation of the current study leads to the conclusion that knowledge management driven by AI is essential for building consumer fulfillment and loyalty. This suggests that banks' administration should place more attention on the level of customer care offered and place the greatest emphasis on resolving customer issues and complaints that were primarily accountable for the enhancement of performance as demonstrated by this research. To generalize the findings, future studies are planned for similar factors, but for a different country.

### Conflict of interest

The authors declare no potential conflict of interest regarding the publication of this work. In addition, the ethical issues including plagiarism, informed consent, misconduct, data fabrication and, or falsification, double publication and, or submission, and redundancy have been completely witnessed by the authors.

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