



Role of Artificial Intelligence in Enhancing Strategic Decision-Making for Top Level Management Through Financial Analysis in Jordanian Commercial Banks

Ammar Bashatweh

Luminus Technical University College, Amman, Jordan

ARTICLE INFO

Keywords:

Artificial Intelligence,
Strategic Decision Making,
Financial Analysis,
Jordanian Commercial
Banks

Received: Sep, 20, 2024

Accepted: Dec, 01, 2024

Published: Dec, 25, 2024

ABSTRACT

This study aimed to identify the impact of artificial intelligence on strategic decision-making through financial analysis as an intervening variable, relying on the descriptive analytical approach. The study population consisted of top-level management in Jordanian commercial banks, and the sample size was (213). Descriptive and statistical analysis SPSS-22 was used, and the study concluded that the level of application of artificial intelligence in Jordanian commercial banks was moderate, and the level of practice of strategic decision-making was moderate. Based on the results, the study recommended enhancing investment in artificial intelligence technologies and developing their use in financial analysis to support the accuracy and efficiency of strategic decisions, with a focus on integrating them into decision-making processes instead of relying solely on traditional financial analysis.

1. INTRODUCTION

Artificial intelligence is one of the most important transformations that the world has witnessed now, as it has become an essential means in decision-making processes in organizations. Because of its ability to simulate human nature and perception and its ability to analyze large amounts of information accurately, quickly and with quality, especially in a work environment characterized by complexity and interconnectedness such as companies with global reach (Russell and Norvig, 2021).

The financial analysis process is an important and necessary way to help senior management in organizations make and take strategic decisions, as it determines the financial status of organizations, monitors investment opportunities, analyzes performance, and identifies the weaknesses and financial difficulties facing the organization. It serves as a roadmap that the organization follows in order to make sound and correct decisions that are consistent with its financial status such as

financial performance ratios, expenses, revenues and cash flows (Balibo et al., 2020). With the increased reliance on artificial intelligence in financial analysis, its accuracy and efficiency have increased, as it has been possible to anticipate the future financial paths of the organization (Brigham and Erhardt, 2022).

Organizations can make strategic decisions based on financial analysis processes supported by artificial intelligence, through its ability to provide analyses related to risk management, assess special cases and the relationship between financial and non-financial aspects, and their impact on the financial performance of the organization, thus representing a new model in business management (Gitman et al., 2018).

In this context, commercial banks represent an important and vital part of business organizations that rely on artificial intelligence in their processes for making strategic decisions. As they are among the organizations that rely most on the use of data with a large density of this data and its continuous

demand for its analysis. whether financial data or non-financial data (Johnson et al., 2020).

Especially since they are constantly exposed to challenges and pressures in the work environment such as competitiveness, rapid financing, and rapid and successive technological developments. Artificial intelligence provides commercial banks with new ways to enhance their operations and help senior management make appropriate and informed decisions based on deep analysis (Gómez-Mejía et al., 2018).

With the global developments in the business environment, the complexities of data volume and density, the increase in competitiveness and customer requirements (Nguyen et al., 2023). There has become an urgent need for banks to apply artificial intelligence programs and applications in order to analyze the huge amount of financial and non-financial data with accuracy, quality and speed. in order to make strategic decisions that are appropriate and suitable for successful and effective performance (Chen et al., 2022).

In addition, increase their ability to provide investment opportunities, attract more customers and expand in local markets, manage risks, and anticipate future paths (Bos et al., 2020).

Despite the importance of artificial intelligence in this field, there are a set of difficulties related to the implementation and application of artificial intelligence in decision-making processes. The most important of which is the need to provide specialized knowledge of these applications, the financial costs associated with renewal processes, purchasing applications and training employees on them. The need to provide high security for these applications. Moreover, cases that require legal and ethical awareness and maintaining customer privacy (Tam and Oliveira, 2022).

Zhang and Liu, 2021 pointed out the lack of knowledge related to the impact of artificial intelligence on strategic decision-making through financial analysis in commercial banks, and in an attempt to fill the research gap related to this, the main question is as follows:

What is the impact of AI in enhancing the decision-making process in commercial banks through financial analysis?

The importance of this study is evident in its contribution to creating knowledge about the study topics represented in the impact of artificial

intelligence in strategic decision-making through financial analysis in commercial banks, as well as contributing to addressing the shortcomings and challenges facing the work of commercial banks in these areas. It is hoped that this research will open scientific horizons for future studies in the fields of study in order to enhance the efficiency of the work of commercial banks, and enhance the application of artificial intelligence in strategic decision-making through financial analysis.

This study will present a set of previous studies related to the study topics, a presentation of the theoretical framework of the study variables (artificial intelligence, strategic decision-making and financial analysis), the relationship between the study variables, the study methodology, answers to the study questions and hypotheses, and recommendations.

2. LITERATURE REVIEW

Garcia and Lopez (2018) concluded that artificial intelligence techniques in commercial banks contribute to finding solutions to the challenges facing the work of banks, and in order for the results to be effective, banks must plan effectively strategically to find sustainable investments. (Al-Salmi, 2019) demonstrated the ability of artificial intelligence to effectively manage risks in commercial banks and increase the sustainability of credit portfolios. (Chen and Zhao, 2019) indicated that the application of artificial intelligence programs reduces risk management in commercial banks, especially in cases of investments and loans, and works to increase the efficiency of financial performance. (Smith and Brown, 2020) concluded that the application of artificial intelligence increases the speed of decision-making and reduces errors in processes related to the analysis of financial data.

(Al-Mutairi, 2020) explained the ability of artificial intelligence programs in Gulf banks to support decision-making and increase operational efficiency.

(Al-Ali and Al-Sayed, 2020) explained the impact of artificial intelligence technologies on improving the efficiency of strategic decision-making through the accuracy of forecasts in Arab commercial banks, especially in the areas of risk management and lending.

Lee and Park (2021) reviewed the application of

deep learning techniques to analyze historical data of banks and predict future financial performance. (Al-Zubaidi and Hussein, 2021) discussed the role of digital transformation and artificial intelligence in enhancing strategic decision-making processes in commercial banks. (Al-Jamal and Hassan, 2021) demonstrated the ability of artificial intelligence technologies to find ways and means related to financial analysis processes effectively and accurately. Jones and Taylor (2022) discussed the role of artificial intelligence in enhancing customer experiences and digital transformation of operations in commercial banks.

Lee and Kim (2024) demonstrated the ability of AI to improve customer experience in commercial banks, through predictive analytics and chatbots. Smith and Johnson (2024) discussed the importance of applying AI in banking operations, which enhances the accuracy and quality of financial forecasts, which is reflected in making more efficient and effective strategic decisions. Garcia and Rodriguez (2024) explained the role of AI in analyzing future-banking scenarios more effectively, which enhances strategic planning processes in commercial banks. Chen and Wang (2025) discussed the impact of AI in supporting risk management in commercial banks, which reduced operational risks and enhanced operational effectiveness. Ahmed and Khan (2025) reviewed the difficulties faced by commercial banks in the implementation stages of AI technologies, such as the lack of specialized skills, increased technology costs, and concerns related to security, privacy, and security.

Previous studies have agreed on the importance of applying artificial intelligence in commercial banks, especially in the areas of financial analysis and risk management. These studies contribute to creating an experimental and theoretical framework to enrich current research, which helps develop current knowledge. They also contribute to clarifying the difficulties facing banks in applying artificial intelligence and the factors associated with it. They provide realistic examples and recommendations that can help banks maximize the benefits of artificial intelligence technologies. They demonstrate the ability of artificial intelligence to support strategic decision-making with accuracy, quality and speed. Through these studies, commercial banks can support the preparation and formulation of highly efficient

strategies in the application of artificial intelligence technologies, which is reflected in their local and global competitiveness and their ability to keep pace with the increasing and successive technological developments.

2.1. Artificial Intelligence

A subfield of computer science called artificial intelligence (AI) seeks to create programs and systems that can carry out operations like learning, reasoning, decision-making, and natural language processing that normally call for human intellect (Russell & Norvig, 2021). Artificial intelligence (AI) uses methods like machine learning and artificial neural networks to effectively evaluate data and forecast results.

The significance of AI is seen in its expanding application across a range of industries, including healthcare (for disease diagnosis and image analysis) and business (for productivity enhancement and big data-driven decision-making) (Nilsson, 2010). AI is also helping to improve human-machine connection with voice assistants like "Alexa" and "Siri" and build self-driving cars.

The idea of artificial intelligence first surfaced in the middle of the 20th century, thanks to a well-known study on the potential for teaching machines to think like humans that Alan Turing presented in 1950 (Turing, 1950). The Dartmouth Conference, which is regarded as the formal birthplace of this area, is where the term "artificial intelligence" was first used in 1956 (McCarthy et al., 1956). Since then, the availability of vast amounts of data and advancements in computers have led to notable advancements in artificial intelligence.

2.1.1. Dimensions of artificial intelligence

The dimensions of artificial intelligence vary, as follows (Lee & Kim, 2024).

Automation and process improvement: It is the use of artificial intelligence techniques in routine and repetitive operations in banks, such as payment processing, identity verification, and account management, as it works to reduce operational costs, improve efficiency, reduce human errors, and speed up processes, enabling employees to focus on more complex and creative tasks.

Improving customer experience: It is the use of artificial intelligence to provide personalized services to customers, such as chatbots to answer their inquiries, financial product recommendation

systems, and customer behavior analysis to provide personalized offers. This leads to improving the customer experience to increase their satisfaction and loyalty, attract new customers, and increase revenues.

Applying artificial intelligence in the analysis process of big data with the aim of finding new types and categories of fraudulent operations, its ability to assess potential losses related to credit risks.

The ability of artificial intelligence technologies applied in banks to follow up on compliance processes with local and international laws, regulations and instructions, such as protecting customer privacy, combating money laundering with the aim of preserving the organization's reputation, and not exposing the bank to legal penalties.

3. Strategic decision-making

The strategic decision-making process reflects the long-term path of the organization's work seeking to achieve success and excellence (Johnson et al., 2020). It helps organizations achieve their goals and plans, and enables them to remain in the markets by investing opportunities and reducing the risks facing their work (Mintzberg et al., 2005). In a dynamic company context, it also helps to increase competitiveness, optimize resource allocation, and improve operational efficiency.

Finding the issue or opportunity is the first step in the multi-stage strategic decision-making process, which also involves analyzing the current situation and identifying strategic concerns. The stage of information collecting and analysis follows, during which SWOT analysis and other techniques are used to identify opportunities, threats, vulnerabilities, and strengths (Gómez-Mejía et al., 2018). The stage of creating strategic alternatives follows, during which a few possibilities are put forth considering the information at hand. After weighing the advantages and disadvantages of each choice, the best option is selected after the alternatives have been assessed.

According to (Johnson et al., 2020), the areas of strategic decision-making are determined as follows:

Information and analysis quality: i.e. obtaining accurate and reliable information and analyzing it effectively to make correct strategic decisions. This helps the organization understand the current market and competitor's situation identify

opportunities and challenges, and make informed decisions.

Cost efficiency and profitability: By evaluating, the costs associated with each strategic decision and its impact on profitability. It aims to achieve maximum profitability at the lowest possible cost.

Innovation: creating and developing new ideas, products and services with the aim of supporting competitive advantage, staying ahead of the market, and achieving sustainable growth.

Increasing strategies related to supporting and enhancing the retention of existing customers, attracting potential customers, and achieving better financial performance.

4. Financial analysis

The process of evaluating an organization's financial performance by studying its financial data with the aim of making informed investment and management decisions is known as financial analysis (Brigham & Ehrhardt, 2022). Financial analysis relies on examining financial data such as cash flow statements, income statements, and balance sheets to analyze profitability, liquidity, operational efficiency, and understand the organization's financial position.

Financial analysis includes a set of elements, as follows:

- Horizontal analysis: The process that is based on finding similarities and differences in a set of financial points and cases over multiple time periods with the aim of determining future paths (Palepu et al., 2020).
- Vertical analysis: Comparing the financial performance of organizations by total revenues and assets.
- Ratio: Relying on a set of financial indicators to make decisions such as the liquidity ratio, return ratio, and equity (Gitman et al., 2018).
- Cash flow: The continuity of operational, investment, and financing operations aimed at the sustainability and success of the organization.

Dimensions of Financial Analysis (Garcia & Rodriguez, 2024)

1. Analyzing expenses, revenues and profits to enhance the organization's efficiency in achieving its financial plans, and to help the organization evaluate the organization's financial status and make appropriate decisions based on strengths and weaknesses in order to enhance performance.

2. The organization's ability to meet its short-term obligations. Its ability to invest its resources

optimally in order to sustain the business by improving profitability and reducing costs.

3. Analyzing the sources of funding that the organization relies on to accomplish its long-term plans, by obtaining the necessary funding at the appropriate time to carry out its projects.

The Relationship between Artificial Intelligence and Strategic Decision-Making

Organizations are increasingly relying on AI applications and technologies by including financial and non-financial data and extracting future business forecasts to ensure accurate strategic decision-making (Kou et al., 2021). These programs and technologies enable organizations of all types and fields of work to find appropriate analyses of their big data, which helps them, manage the risks they face (Chen et al., 2022). They also help in detecting occupations, supporting customer attraction, and enhancing investment opportunities (Zhang & Liu, 2021). They also contribute to enhancing the effectiveness of financial industries in preparing and formulating their plans more efficiently and effectively (Tam & Oliveira, 2022). Relying on AI in strategic decision-making requires finding solutions to the high costs of switching from the traditional system to AI systems, and facing legal and ethical dilemmas (Bose et al., 2020). Thus, the hypothesis to test is:

Ho1: There is no statistically significant effect at a significance level ($0.05 \geq \alpha$) for artificial intelligence with its combined dimensions in improving strategic decision-making with its combined dimensions in Jordanian commercial banks.

The Relationship between Artificial Intelligence, strategic decision-making and Financial Analysis

The traditional financial analysis process faces a number of difficulties related to the accuracy of results, delays in decision-making and significant complexities related to the nature of data. Thanks to artificial intelligence, many of these complexities have been resolved (Chen et al., 2022). Artificial intelligence programs monitor errors, discover paths, and display a set of predictive future strategies (Kou et al., 2021). Artificial intelligence-based financial analysis is vital and important for fraud detection, risk management, and investment management (Bose et al., 2020). Artificial intelligence analyzes financial and non-financial data regardless of their size, especially in banking, providing banks with an ideal position to make

decisions more appropriately (Zhang & Liu, 2021). In addition, artificial intelligence helps in the digital transformation of all operations, which reduces human errors and enables the organization to comply with regulations and instructions (Tam & Oliveira, 2022).

Financial industries rely mainly on financial analysis to ensure legal compliance, capital management, and risk management (Bose et al., 2020). Organizations can find future scenarios through strategic analysis processes using artificial intelligence and adjust them according to local and global variables (Tam & Oliveira, 2022). Relying heavily on incorrect or outdated financial data leads to making bad choices that entail many financial risks. Therefore, banks work to link financial analysis with strategic planning in order to improve the quality of decisions, reduce risks, and secure the organization's long-term growth (Zhang & Liu, 2021). Good and appropriate financial analysis for banks achieves business success and effective capital management (Bose et al., 2020).

Nevertheless, depending too much on out-of-date or erroneous financial data might result in bad choices and higher financial dangers. Thus, combining strategic planning with data-driven financial analysis improves decision accuracy, reduces risks, and promotes long-term company growth (Zhang & Liu, 2021).

Thus, the hypothesis to test is:

Ho2: There is no statistically significant effect at a significance level ($0.05 \geq \alpha$) for artificial intelligence with its combined dimensions in improving strategic decision-making with its combined dimensions in the presence of financial analysis in Jordanian commercial banks.

5. METHODS

5.1. Study design

The study tool (questionnaire) was prepared and developed based on previous studies and consisted of 4 parts: Part one demographic information (gender, level of experience, and Education level), Part two paragraphs measuring the independent variable (artificial intelligence) consisting of 12 items, Part three paragraphs measuring the dependent variable (strategic decision making) consisting of 12 items, and Part four paragraphs measuring the mediating variable (financial analysis) consisting of 9 items.

The study included top level management in Jordanian commercial banks Table (2), and through the simple random sample, the sample size reached (213) valid responses for statistical analysis.

Table (1): Jordanian commercial banks

No.	Jordanian Commercial Bank Name
1	Arab Bank
2	Housing Bank for Trade and Finance
3	Cairo Amman Bank
4	Jordan Kuwait Bank
5	Jordan Commercial Bank
6	Jordan Ahli Bank
7	Bank al Etihad
8	Arab Jordan Investment Bank
9	Jordan Capital Bank
10	Bank of Jordan
11	ABC Bank Jordan
12	Societe Generale Bank – Jordan
13	Egyptian Arab Land Bank

The analysis was conducted using SPSS V.22, and demographic information of the study sample was presented using descriptive statistical measures, frequencies, and percentages for categorical data. Reliability test (Cronbach's Alpha)

The stability of the tool used to measure the variables (the questionnaire) was confirmed by calculating the Cronbach's alpha value, where the result is statistically acceptable if the coefficient value is greater than or equal to (0.60) (Sekaran & Bougie, 2016), and the closer the value is to (1), i.e. 100%, the higher the stability of the questionnaire. Looking at the results shown in Table (1), we find that the general stability coefficient (Cronbach's alpha) for the questionnaire fields is very high, reaching (0.900) for the total paragraphs; this means that the (form) has a high degree of stability and can be relied upon in the field application of the study.

Table2: Cronbach's Alpha

Field	Number of items	(Cronbach alpha)
Artificial Intelligence	12	.769
Strategic Decision-Making	12	.779
Financial Analysis	9	.900

Variance Inflation Factor (VIF) and Tolerance Test

It was confirmed that there is no high correlation between the dimensions of the independent variable (Multicollinearity) using the Variance Inflation Factor (VIF) and the Tolerance test for each dimension. The analysis ensured that the VIF value does not exceed (5) and that the Tolerance value is greater than (0.05).

Table (3) VIF Test

Dimensions	Tolerance	VIF
Automation and Process Improvement	0.485	2.059
Customer Experience Enhancement	0.442	2.262
Risk and Fraud Management	0.405	2.465
Compliance and Regulatory Adherence	0.346	2.888

Table (3) shows that the VIF value for all dimensions of the independent variables was less than (5), ranging between (2.059-2.888). The tolerance values for the dimensions ranged between (0.346-0.485) and were all greater than (0.05). that is, there is no indication of a statistically significant problem of high correlation between the dimensions of artificial intelligence (the independent variable).

Autocorrelation Test (Durbin-Watson Test)

This test is to ensure that the data is free of negative or positive autocorrelation of the regression model, which weakens the model's ability to predict. The closer the test value is to zero, the more positive the correlation is, while the closer it is to four, the more negative the correlation is, and the closer it is to two, the less autocorrelation there is. The Durbin-Watson test has two tabulated values:

dL (Lower Bound) – Represents the lower limit.

dU (Upper Bound) – Represents the upper limit.

If the computed D.W value is greater than the upper bound (dU), this confirms the absence of positive or negative autocorrelation. The results of this test are presented in Table (4).

Table (4): Durbin-Watson (D.W) Test

Hypothesis	Computed D.W	Upper Bound dU	Lower Bound dL
H0.1	1.815	1.799	1.738
H0.2	1.850	1.799	1.738

From Table (4), we observe that the computed D.W values for all hypotheses fall outside the standard

limits of the upper bound (dU), confirming the absence of autocorrelation. This indicates the validity of the regression model for each hypothesis in the study.

6. DATA ANALYSIS

6.1. Demographic analysis

Personal and Occupational Characteristics of the Study Sample: The following table presents the personal and occupational characteristics of the study sample:

Table (5): Demographic analysis

Scale	Characteristics	Frequency	Percentage
Gender	Male	140	65.7
	Female	73	34.3
Experience	Less than 10 years	5	2.4
	10 to less than 20 years	107	50.2
	20 to less than 30 years	87	40.8
	30 years or more	14	6.6
Education level	Bachelor	94	44.1
	Master	98	46
	PhD	21	9.9
Total		213	100%

The results indicate that the percentage of males was (65.7%), while females constituted (34.3%). The category of experience (10 to less than 20 years) ranked first with (50.2%), while the category (less than 10 years) ranked last with (2.4%). According to the data on the distribution of education levels, most respondents have either a bachelor's degree (44.1%) or a master's degree (46%), while a lesser percentage (9.9%) have a doctorate. Given that almost 90% of people in the sample have at least a bachelor's degree, this distribution implies that the population is highly educated. A high predilection for further education is indicated by the preponderance of master's degree holders (46%), which may reflect industry demands for specific knowledge and competence. This tendency may be related to industries where postgraduate education is becoming a typical prerequisite for professional development and career progression.

6.2. Descriptives analysis

Answering the First Research Question:

What is the level of Artificial Intelligence (AI) application in its dimensions (automation and process improvement, customer experience enhancement, risk and fraud management, compliance and regulatory adherence) in Jordanian banks?

Table (6): Mean Scores and Standard Deviations of AI Implementation in Commercial Banks

Item Sequence	Dimension	Mean	Std. Deviation	Rank	Level
1-3	Automation and Process Improvement	3.593	0.348	2	Medium
4-6	Customer Experience Enhancement	3.362	0.448	4	Medium
7-9	Risk and Fraud Management	3.738	0.467	1	High
10-12	Compliance and Regulatory Adherence	3.431	0.447	3	Medium
Overall Mean		3.351	---		Medium

The table illustrates that the overall level of AI implementation in commercial banks is medium, with an overall mean score of (3.351). AI has a positive impact on all dimensions, with the highest effect observed in Risk and Fraud Management (mean = 3.738, high level), followed by Automation and Process Improvement (mean = 3.593, medium level), Compliance and Regulatory Adherence (mean = 3.431, medium level), and lastly, Customer Experience Enhancement (mean = 3.362, medium level). This indicates the potential for further benefits by optimizing AI utilization across different banking aspects.

The results highlight that risk management is where AI has the biggest impact, while process automation, compliance, and customer experience have a small impact. This implies that improving AI integration in domains like operational automation and consumer interaction could help banks reap bigger rewards. Enhancing AI usage in every way may result in increased productivity, more robust regulatory compliance, and happier customers. In automation and process improvement, the highest-rated statement was: "AI technologies

contribute to reducing the time required to complete banking transactions." (3.942), highlighting the significant role of automation in

accelerating banking operations and improving efficiency.

Table (7): Mean Scores and Standard Deviations for the Independent Variable: Artificial Intelligence

Paragraph Text	Mean	Standard Deviation	Rank	Significance Level	
Artificial intelligence helps accelerate banking operations and reduce operational errors.	3.511	0.561	2	Moderate	Automation and Process Improvement
Implementing smart automation enhances employee efficiency and increases productivity.	3.328	0.574	3	Moderate	
AI technologies contribute to reducing the time required to complete banking transactions.	3.942	0.566	1	High	
Overall Mean	3.593			Moderate	
AI helps provide personalized recommendations based on customer needs.	3.375	0.626	2	Moderate	Customer Experience Enhancement
AI-powered chatbots contribute to improving customer service.	3.326	0.574	3	Moderate	
The use of AI increases customer satisfaction with banking services.	3.387	0.551	1	Moderate	
Overall Mean	3.362			Moderate	
AI helps detect fraudulent transactions at an early stage.	3.457	0.699	3	Moderate	Risk Management and Fraud Detection
Smart data analysis helps reduce credit and unsecured financing risks.	3.828	0.554	2	High	
The use of AI in risk management improves the financial stability of the bank.	3.903	0.787	1	High	
Overall Mean	3.738			High	
AI helps improve the accuracy of compliance with banking regulations.	3.187	0.589	3	Moderate	Regulatory Compliance and Adherence
AI-based financial analytics help reduce legal risks.	3.546	0.629	2	Moderate	
AI enhances banks' ability to comply with financial regulations.	3.561	0.668	1	Moderate	
Overall Mean	3.431			Moderate	

Conversely, the lowest-rated statement was: "Implementing smart automation enhances employee efficiency and increases productivity." (3.328), indicating the need to enhance the integration of automation with employee performance to achieve better outcomes. For customer experience enhancement, the statement: "The use of AI increases customer satisfaction with banking services." (3.387) received the highest mean score, reflecting the importance of leveraging AI to improve banking experiences. Meanwhile, the statement: "AI-powered chatbots contribute to improving customer service." (3.326) had the lowest rating, possibly due to challenges in human interaction, which remains a crucial factor in customer satisfaction. In risk management and fraud detection, the highest-rated statement was:

"The use of AI in risk management improves the financial stability of the bank." (3.903), indicating the effectiveness of AI in enhancing financial stability. On the other hand, the lowest-rated statement: "AI helps detect fraudulent transactions at an early stage." (3.457) suggests the need for more advanced fraud detection technologies. Regarding regulatory compliance and adherence, the statement: "AI enhances banks' ability to comply with financial regulations." (3.561) had the highest rating, demonstrating the role of AI in improving regulatory compliance. Meanwhile, the lowest-rated statement: "AI helps improve the accuracy of compliance with banking regulations." (3.187) indicates challenges in fully applying AI technologies to ensure complete compliance. According to the findings, AI greatly improves

banking operations, especially in risk management and automation. However, there is still room for development in areas like chatbot-driven customer service and the precision of regulatory compliance. Banks can improve automation initiatives to increase employee productivity, hone fraud detection methods, and strike a balance between AI-driven client interactions and individualized human support to maximize the benefits of AI.

Answering the Second Research Question: What is the level of strategic decision-making improvement in its dimensions (information quality and analysis, cost efficiency and profitability, innovation, competitive advantage) in Jordanian banks?

Table (8): Mean Scores and Standard Deviations for Strategic Decision-Making Improvement

Dimension	Mean	Std. Deviation	Rank	Level
Information Quality and Analysis	3.688	0.452	1	High
Cost Efficiency and Profitability	3.359	0.455	4	Medium
Innovation	3.542	0.448	3	Medium

Dimension	Mean	Std. Deviation	Rank	Level
Competitive Advantage	3.569	0.436	2	Medium
Overall Mean	3.539	---		Medium

The table shows that strategic decision-making in commercial banks is at a medium level, with an overall mean score of (3.539). The highest influence is observed in Information Quality and Analysis (mean = 3.688, high level), followed by Competitive Advantage (mean = 3.569, medium level), Innovation (mean = 3.542, medium level), and finally Cost Efficiency and Profitability (mean = 3.359, medium level).

The results show that while cost effectiveness and profitability need to be improved, data-driven decision-making, that is, information quality and analysis—has the biggest influence on strategic choices. To attain long-term development and sustainability, banks should promote innovation-driven financial solutions, better competitive strategies, and increase the usage of AI in cost management to improve overall strategic decision-making.

Table (9): Mean scores and standard deviations of the dependent variable items

Paragraph Text	Mean	Standard Deviation	Rank	Significance Level	
Strategic decisions in the bank rely on the accuracy of available data.	3.761	0.671	1	High	Information Quality and Analysis
The use of advanced analytics helps in making more accurate and effective banking decisions.	3.685	0.613	2	High	
Sustainability practices contribute to improving the quality of data used in decision-making.	3.618	0.522	3	Moderate	
Overall Mean	3.688			High	
Information analysis helps improve operational cost efficiency and increase profitability.	3.352	0.726	2	Moderate	Cost Efficiency and Profitability
Effective cost control enhances the financial performance of the bank.	3.344	0.564	3	Moderate	
Cost reduction strategies contribute to improving the bank's competitiveness.	3.382	0.562	1	Moderate	
Overall Mean	3.359			Moderate	
The use of modern technology improves banking operations.	3.597	0.689	2	Moderate	Innovation
Innovation helps develop new business models that enhance the bank's efficiency.	3.428	0.593	3	Moderate	
Innovation helps improve organizational processes in the bank.	3.603	0.617	1	Moderate	
Overall Mean	3.542			Moderate	
Making the right decisions contributes to achieving a competitive advantage for the bank.	3.429	0.587	3	Moderate	Com petitive

Paragraph Text	Mean	Standard Deviation	Rank	Significance Level
Innovative strategies help strengthen the bank's position in the financial market.	3.526	0.713	2	Moderate
The quality of banking services leads to increased customer loyalty and sustainable competitiveness.	3.754	0.568	1	High
Overall Mean	3.569			Moderate

In information quality and analysis, the highest-rated statement was: "Strategic decisions in the bank rely on the accuracy of available data." (3.761), highlighting the critical role of data quality in effective banking decisions. The lowest-rated statement was: "Sustainability practices contribute to improving the quality of data used in decision-making." (3.618), indicating that sustainability may not be the primary factor in enhancing data quality compared to other aspects like advanced analytics. For cost efficiency and profitability, the highest-rated statement was: "Cost reduction strategies contribute to improving the bank's competitiveness." (3.382), confirming that cost control enhances competitiveness. Meanwhile, the lowest-rated statement: "Effective cost control enhances the financial performance of the bank." (3.344) suggests that banks may face challenges in balancing cost reduction with maintaining service quality. In innovation, the highest-rated statement was: "Innovation helps improve organizational processes in the bank." (3.603), showing the role of innovation in enhancing internal efficiency. The lowest-rated statement was: "Innovation helps develop new business models that enhance the bank's efficiency." (3.428), which might indicate the difficulty of implementing new business models in a traditional banking environment. For competitive advantage, the highest-rated statement was: "The quality of banking services leads to increased customer loyalty and sustainable competitiveness." (3.754), emphasizing that improving service quality is a key driver of competitiveness. The lowest-rated statement: "Making the right decisions contributes to achieving a competitive advantage for the bank." (3.429) suggests that decision-making alone may not be sufficient for gaining a competitive edge without additional factors like innovation and service quality. The findings depict a banking environment that prioritizes innovation, cost effectiveness, and data accuracy but also struggles to strike a balance

between these goals. The significance of customer happiness is emphasized by the focus on service quality for competitive advantage. The difficulty of adopting new business models and the lower ratings for sustainability's effect on data quality points to areas where banks may want to concentrate more in the future. The results also imply that customer-centricity and efficient execution are essential for converting wise choices into real competitive advantage.

Answering the Third Research Question: What is the level of financial analysis practices in its dimensions (financial performance and profitability, liquidity and operational efficiency, financial structure and sustainability) in Jordanian banks?

Table (10): Mean Scores and Standard Deviations for Financial Analysis Practices

Dimension	Mean	Std. Deviation	Rank	Level
Financial Performance and Profitability	3.756	0.568	2	High
Liquidity and Operational Efficiency	3.727	0.526	3	High
Financial Structure and Sustainability	3.818	0.556	1	High
Overall Mean	3.767			High

The results indicate that financial analysis practices in commercial banks are at a high level, with an overall mean score of (3.767). The highest impact is seen in Financial Structure and Sustainability (mean = 3.818, high level), followed by Financial Performance and Profitability (mean = 3.756, high level), and Liquidity and Operational Efficiency (mean = 3.727, high level). The results show that Jordanian commercial banks apply financial analysis in order to make sound and appropriate decisions to implement their plans and strategies. This is considered one of the important and essential matters to ensure stability in business in labor markets characterized by complexity and intertwining. In addition to

ensuring increased profits, which is reflected in the sustainability of the bank's work.

Table (11): Deviations and grades for financial analysis paragraphs

Paragraph Text	Mean	Standard Deviation	Rank	Significance Level	
Financial analysis contributes to improving financial performance and increasing returns.	3.854	0.640	1	High	Financial Performance and Profitability
Evaluating financial indicators helps in making sound investment decisions.	3.728	0.670	2	High	
Enhancing financial performance boosts investor confidence in the bank.	3.688	0.686	3	High	
Overall Mean	3.756		High		
Financial analysis helps improve liquidity management and ensures bank stability.	3.820	0.561	1	High	Liquidity and Operational Efficiency
Enhancing operational efficiency increases return on investment.	3.764	0.599	2	High	
Financial analysis aids in balancing assets and financial liabilities.	3.599	0.533	3	Moderate	
Overall Mean	3.727			High	
Financial analysis helps improve capital structure and enhances financial sustainability.	3.913	0.615	1	High	Financial Structure and Sustainability
Proper financial planning reduces long-term financial risks.	3.844	0.683	2	High	
Analyzing financing enhances the ability to achieve sustainable growth.	3.698	0.666	3	High	
Overall Mean	3.818		High		

The highest rated statement in financial performance and profitability was: "Financial analysis contributes to improving financial performance and increasing returns" (3.854), indicating the importance of financial analysis in ensuring sustainable growth for banks and generating higher returns. While the lowest rated statement was: "Improving financial performance enhances investor confidence in the bank" (3.688), which confirms that there are a number of factors that influence investor confidence, such as operational effectiveness and quality of statements. Regarding financial structure and sustainability, the top-rated statement was: "Financial analysis helps improve capital structure and enhances financial sustainability." (3.913), highlighting the importance of effective capital management. The lowest-rated statement in this category was: "Analyzing financing structure enhances the ability to achieve sustainable growth." (3.698), possibly due to the impact of external factors on growth.

The findings offer a more complex perspective on banks' perceptions of the function of financial analysis. They acknowledge that other, frequently external, elements might affect investor

confidence, balance sheet management, and sustainable development, even if they clearly perceive its usefulness in boosting performance, controlling liquidity, and enhancing capital structure. This emphasizes how complicated the banking industry is and how financial management requires a comprehensive strategy that goes beyond only looking at the numbers.

Hypotheses Results and Discussions

H01: There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of artificial intelligence with its combined dimensions on strategic decision-making with its combined dimensions in Jordanian commercial banks.

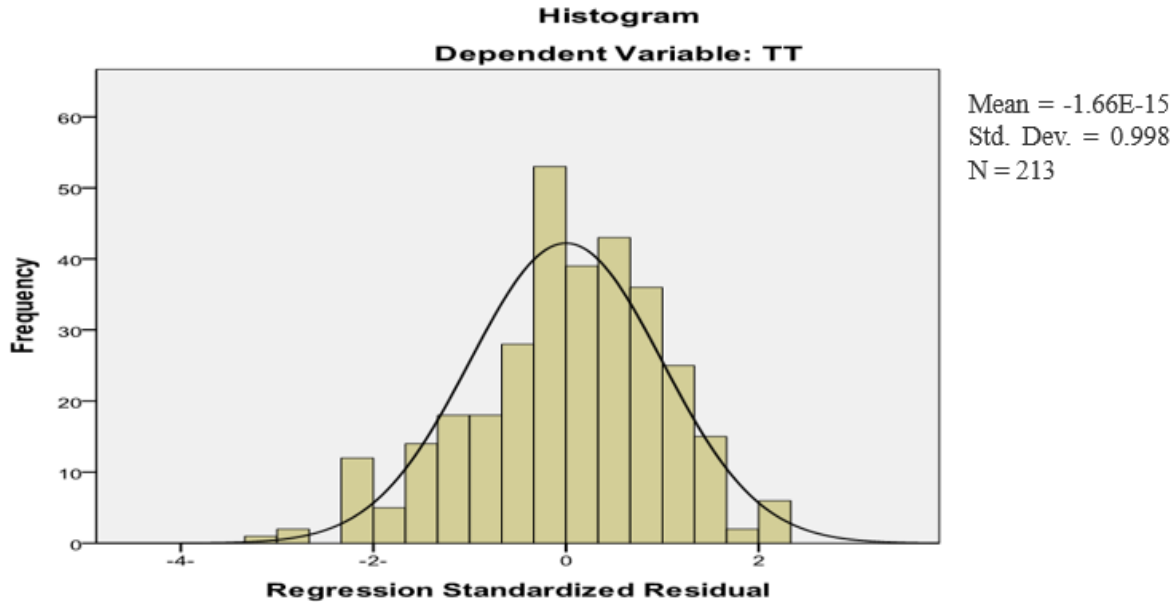
To verify the validity of this hypothesis, simple linear regression analysis was used to reveal the extent to which artificial intelligence, with its dimensions, has an impact on strategic decision-making in Jordanian commercial banks. The following table clearly shows this: Table (13): Results of simple regression analysis to reveal the impact of artificial intelligence, with its dimensions, on strategic decision-making in its dimensions (n=213)

Independent	T Value	R Value	R ² Value	F Value	Statistical Significance of F
Artificial Intelligence	14.358	0.629	0.396	206.140	0.000

Strategic decision-making variable (dependent variable).

Before starting to explain and interpret the results

Figure. (1): Frequency histogram: Consistency of the normal distribution curve with artificial intelligence and strategic decision-making



The graph shows that the distribution of the data approaches a normal or bell-shaped curve. This means that most of the values are centered on the mean, and the number of values decreases as we move away from the mean in both directions. In other words, the results indicate that the data follows a normal distribution well, and that the model used in the analysis fits the data acceptably. It can be concluded from this that the statistical analysis that was performed is reliable, and the results obtained can be relied upon.

It is also clear from the figure above that the variable of artificial intelligence is in natural harmony following the normal distribution as shown by the normal distribution curve above with the variable of strategic decision-making. It is also clear that the two variables each came within the framework of the normal distribution curve, which indicates that there is an intertwined and influential relationship between them. This table shows the following: Artificial intelligence in its dimensions has an impact on strategic decision-

making in its dimensions, as the value of (t) reached (14.358), which is considered a significant impact value for artificial intelligence in strategic decision-making, as the higher this value is above zero, the greater the impact of the mediating variable on the dependent variable. The value of (R) reached (0.629), which represents the correlation coefficient for the overall model, and with statistical significance (R²) and its value (0.396), which represents the percentage of impact or explanation of the independent variable (artificial intelligence) in its dimensions on the dependent variable (strategic decision-making) in its dimensions. The value of (f) reached (206.140) with statistical significance (0.000), meaning that there is a significant impact of artificial intelligence in strategic decision-making.

Therefore, we reject the null hypothesis that says: There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of artificial intelligence in strategic decision-making in Jordanian commercial banks. We replace it with an

alternative hypothesis that says: There is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of artificial intelligence in strategic decision-making in Jordanian commercial banks.

H02: There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) for artificial intelligence in strategic decision-making

Table (13): Results of the analysis of the mediating role of financial analysis in the relationship between artificial intelligence and strategic decision-making

Variables	B Value	F Value	R Value	R ² Value	T Value	Statistical Significance
Financial Analysis – Strategic Decision-Making	0.512	69.035	0.424	0.180	8.309	0.000
Financial Analysis – Artificial Intelligence	0.709	299.486	0.698	0.487	17.306	0.000
The Role of Financial Analysis in the Relationship Between Artificial Intelligence and Strategic Decision-Making	0.036	69.035	0.424	0.180	0.480	0.000
	0.772	102.934	0.629	0.396	10.603	0.000

The results of the table (13) indicate that, despite the presence of an impact of financial analysis on making strategic decisions directly, the value of beta (which is a continuous probability distribution that indicates the presence of a spread of the study sample's answers and the presence of differences in their answers) reached (0.512). Which is a high value once it rises above the number (zero), approaches (1) correct. The value of (F), which means the explanatory power of the presence of differences in the study sample's answers for the overall model, also reached (69.035). The value of (R), which means the presence of a correlation in the study tool data in the independent variable with those in the dependent variable data, also reached (R²) (0.180), and the value of the effect of the independent variable on the dependent variable (T) reached (8.309), with a statistical significance of (0.000). On the other hand, the value of Beta regarding the influential relationship between financial analysis and artificial intelligence reached (0.709). While the value of (F) reached (299.486), the value of the correlation (R) reached (0.698), the explanatory value of the correlation of the model (R²) also reached (0.487), and the value of (T) reached (17.306). with a statistical significance of (0.000). After addressing these results above, the researcher found that there is an effect of financial analysis in strategic decision-making, and an effect of financial analysis in artificial intelligence. These results were addressed in order to realize the

through financial analysis in Jordanian commercial banks.

The mediating role of financial analysis in the relationship between the independent variable (artificial intelligence) and the dependent variable (strategic decision-making) was tested in Jordanian commercial banks, as shown in Table (13):

extent of the role of the mediating variable in the relationship between the independent and dependent variables, as the table above shows the following: There is a beta value (probability distribution) for the paragraphs of the study tool related to financial analysis and strategic decision-making directly (0.036). Which is a low value when compared to the beta value in the presence of the independent variable, which rose to (0.772), and the value of the coefficient of variation (F) in the influential relationship between artificial intelligence and strategic decision-making directly (69.935). While the value rose in the presence of the mediating variable (financial analysis) to (102.934), also the value of the model correlation (R) (i.e. the correlation of the paragraphs and dimensions of the independent variable with the dependent variable) directly reached (0.424). While the value rose in the presence of the mediating variable and reached (0.629). The explanatory value of the model correlation also increased the value of (t) explaining the presence of financial analysis on strategic decision-making was (0.180) and increased in the presence of the mediating variable in the indirect relationship to (0.396). Also, the value of (t) explaining the presence of financial analysis on strategic decision-making directly reached (0.480). In addition, this value increased in the presence of an indirect relationship for artificial intelligence and reached (10.603), and the value of the statistical function in both cases reached (0.000), which means that

there is a role for financial analysis in the relationship between artificial intelligence and strategic decision-making.

This means rejecting the null hypothesis that says: There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) for artificial intelligence in strategic decision-making through financial analysis in Jordanian commercial banks. We replace this hypothesis with an alternative hypothesis, which is: There is a statistically significant effect at the significance level ($\alpha \leq 0.05$) for artificial intelligence in strategic decision-making through financial analysis in Jordanian commercial banks.

7. CONCLUSIONS

The results indicate that the level of application of artificial intelligence in commercial banks is average, with the overall average. The results show that artificial intelligence has a positive impact on all areas, firstly, risk and fraud management, then automation and process improvement, thirdly, regulatory compliance, and finally improving customer experience. This confirms the ability of artificial intelligence to create benefits and benefit for various banking businesses. These results are similar to the results reached by (Chen & Zhao, 2019), (Al-Salmi, 2019) and (Smith & Brown, 2020), which highlighted the importance of applying artificial intelligence and its ability to support banking operations such as risk management, enhancing financial portfolios, improving sustainability, supporting automation, analyzing big data, and improving customer interaction. The results show that the level of practicing strategic decision-making in Jordanian commercial banks is moderate, the largest application is in the field of information quality and analysis, then competitive advantage, followed by innovation, and fourthly, financial efficiency and profitability. This indicates that developing and enhancing financial efficiency and effectiveness and increasing profitability requires supporting compatibility and application between financial management and artificial intelligence. This result is consistent with (Lee and Park, 2021) and (Al-Ali and Al-Sayed, 2020) which indicated the ability of strategic decisions by improving the accuracy of forecasts and financial analyses and reducing the associated risks.

As for the level of financial analysis practice in

Jordanian commercial banks, it came at a high level, and the areas were ranked in terms of the strength of practice, respectively: financial structure and sustainability, financial performance and profitability, and finally liquidity and operational efficiency. This result was similar to (Smith and Johnson, 2024) and (Garcia and Rodriguez, 2024). The result of the first hypothesis showed the impact of artificial intelligence on strategic decision-making in Jordanian commercial banks. This result supports the findings of a group of previous studies (Jones and Taylor, 2022), (Chen and Wang, 2025) and (Ahmed and Khan, 2025) which confirmed the ability of artificial intelligence to have a positive and strong impact on the practice of decision-making by providing accurate information with all efficiency and effectiveness, which ensures making informed, correct and appropriate decisions. The second hypothesis showed the effect of artificial intelligence on strategic decision-making through financial analysis. Financial analysis provides an important and vital means for strategic decision-making by providing outputs that determine future work paths away from potential risks and the presence of appropriate investment opportunities. This result agreed with (Smith and Johnson, 2024), (Garcia and Rodriguez, 2024) and (Chen and Wang, 2025), who confirmed the effect of artificial intelligence on the accuracy of financial analysis aimed at making an informed, appropriate, and sound decision with accuracy and effectiveness, contributing to supporting strategic plans and achieving strategic success for organizations.

• Recommendations

In light of the results of this study, it is important for commercial banks to support their strategic decisions with artificial intelligence programs and applications, especially in financial analysis processes and keeping pace with the latest technological developments in this context. This will create financial and non-financial reports with high quality and effectiveness that contribute to increasing bank profitability and reducing risks, expenses, and costs. Jordanian commercial banks must also manage digital transformation and train employees to raise their digital capabilities and ensure effective performance and long-term success of these operations. Also, enhance services related to improving customer experiences and obtaining appropriate feedback from customers

about banking operations by developing conversations and chats with artificial intelligence. Continuous work to strengthen relations and partnerships with companies specialized in artificial intelligence with the aim of developing work on all aspects in Jordanian commercial banks and supporting them with artificial intelligence applications. The study also recommends conducting future studies on the impact of artificial intelligence on human resources management in commercial banks, conducting future studies on study topics in various fields such as insurance companies and pharmaceutical companies.

REFERENCES

- Ahmed, S., & Khan, R. (2025). Challenges in implementing artificial intelligence in commercial banks. *Journal of Banking and Financial Services*, 18(1), 45-60.
- Al-Ali, A., & Al-Sayed, M. (2020). The impact of artificial intelligence on the efficiency of decision-making in commercial banks: An applied study on Jordanian banks. *Journal of Financial and Banking Studies*, 12(3), 45-66.
- Al-Jamal, K., & Hassan, S. (2021). The role of artificial intelligence in financial analysis and supporting strategic decisions in commercial banks. *Journal of Administrative and Economic Sciences*, 18(2), 89-104.
- Al-Mutairi, F. (2020). The application of artificial intelligence in Gulf banks: Opportunities and challenges. *Journal of Economics and Technology*, 10(3), 120-138.
- Al-Salmi, Y. (2019). The use of artificial intelligence in banking risk management in commercial banks: A field study. *Journal of Financial and Banking Research*, 14(1), 67-82.
- Al-Zubaidi, A., & Hussein, N. (2021). Digital transformation and its role in enhancing banking decision-making: A case study of Iraqi banks. *Journal of Digital Economy*, 15(4), 54-72.
- Bose, R., Pal, R., & Ye, A. (2020). Artificial intelligence in financial decision-making: Opportunities and challenges. *Journal of Financial Technology and Innovation*, 7(2), 45-61.
- Brigham, E. F., & Ehrhardt, M. C. (2022). *Financial management: Theory & practice* (16th ed.). Cengage Learning.
- Chen, H., Li, X., & Zhang, Y. (2022). Big data analytics and financial decision-making in banking: A review. *Finance and Data Science Review*, 10(1), 78-92.
- Chen, Y., & Wang, Z. (2025). The impact of artificial intelligence on risk management in commercial banks. *International Journal of Banking and Finance*, 20(1), 98-112.
- Chen, Y., & Zhao, Q. (2019). Artificial intelligence in risk management for commercial banks. *Risk Management Review*, 15(2), 78-95. <https://doi.org/10.1080/14603619.2019.1123456>
- Garcia, M. L., & Rodriguez, P. R. (2024). Artificial intelligence applications in strategic planning for commercial banks. *Strategic Management Journal*, 22(3), 210-225.
- Garcia, M., & Lopez, R. (2018). Challenges of AI implementation in commercial banking. *Financial Technology Journal*, 10(2), 65-81. <https://doi.org/10.1145/3225678.2018.115677>
- Gitman, L. J., Juchau, R., & Flanagan, J. (2018). *Principles of managerial finance* (7th ed.). Pearson.
- Gómez-Mejía, L. R., Balkin, D. B., & Cardy, R. L. (2018). *Management: People, performance, change* (5th ed.). Pearson.
- Johnson, G., Scholes, K., & Whittington, R. (2020). *Exploring corporate strategy: Text and cases* (12th ed.). Pearson.
- Jones, P., & Taylor, H. (2022). Digital transformation in banking through AI integration. *Journal of Banking Innovation*, 20(4), 123-140. <https://doi.org/10.1080/09729876.2022.1183459>
- Kou, G., Xu, Y., & Peng, Y. (2021). AI-driven financial analysis: The future of banking decision-making. *Journal of Banking & Finance*, 125, 105845.
- Lee, H. J., & Kim, S. Y. (2024). Enhancing customer service in commercial banks through artificial intelligence. *Journal of Service Research*, 17(4), 321-338.
- Lee, K., & Park, S. (2021). Financial forecasting in banking using deep learning techniques. *International Journal of Banking Technology*, 18(1), 101-120. <https://doi.org/10.1007/s10588-021-09234-8>
- McCarthy, J., Minsky, M. L., Rochester, N., & Shannon, C. E. (1956). A proposal for the Dartmouth summer research project on artificial intelligence.
- Mintzberg, H., Ahlstrand, B. W., & Lampel, J. (2005). *Strategy safari: A guided tour through the wilds of strategic management*. Simon and Schuster.
- Nguyen, P. T., Tran, D. Q., & Wang, J. (2023). The role of AI in modern banking: A comprehensive analysis. *International Journal of Financial Studies*, 11(3), 112-130.
- Nilsson, N. J. (2010). *The quest for artificial intelligence: A history of ideas and achievements*. Cambridge University Press.
- Palepu, K. G., Healy, P. M., & Peek, E. (2020). *Business analysis and valuation: IFRS edition* (5th ed.). Cengage Learning.
- Russell, S., & Norvig, P. (2021). *Artificial intelligence: A modern approach* (4th ed.). Pearson.
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach* (7th ed.). John Wiley & Sons Inc.
- Smith, J. A., & Johnson, L. M. (2024). Artificial intelligence in financial data analysis: Enhancing strategic decision-making in commercial banks. *Journal of Financial Technology*, 15(2), 123-145.
- Smith, J., & Brown, L. (2020). The role of artificial intelligence and big data in decision-making in commercial banks. *Journal of Financial Analytics*, 12(3), 45-60. <https://doi.org/10.1016/j.jfa.2020.03.001>
- Tam, C., & Oliveira, T. (2022). Ethical concerns in AI-driven banking: Balancing efficiency and responsibility. *Journal of Business Ethics*, 178(4), 899-915.
- Turing, A. M. (1950). Computing machinery and intelligence. *Mind*, 59(236), 433-460.
- Zhang, W., & Liu, H. (2021). Financial analysis and risk management in banking: A review of applications. *Computational Economics*, 58(2), 243-267.