

DOI: 10.5281/zenodo.20459535

# DIGITAL TRANSFORMATION IN ISLAMIC BANKS AND ITS ROLE IN SUPPORTING THE EFFICIENCY AND SUSTAINABILITY OF FINANCIAL SERVICES: A FIELD STUDY ON EMPLOYEES OF ISLAMIC BANKS IN JORDAN

Wasif Naif Nahar Daqamseh<sup>1\*</sup>

<sup>1</sup>Ajloun National University, Email: [dgamseh@anu.edu.jo](mailto:dgamseh@anu.edu.jo)

Received: 04/03/2026  
Accepted: 27/04/2026

Corresponding Author: Wasif Naif Nahar Daqamseh  
([dgamseh@anu.edu.jo](mailto:dgamseh@anu.edu.jo))

## ABSTRACT

*This study investigates the current state of digital transformation in Islamic banks in Jordan and examines its role in enhancing operational efficiency and financial sustainability from the perspective of employees. Despite the growing global adoption of digital technologies in the banking sector, Islamic banks in Jordan continue to face challenges related to technological infrastructure, regulatory frameworks, Sharia compliance, and limited awareness and training. The study adopts a descriptive analytical approach and relies on a field survey conducted on a purposive sample of 98 employees from three Islamic banks in Jordan. Data were collected using a structured questionnaire and analyzed to identify the relationships between digital transformation, operational efficiency, and financial sustainability. The findings reveal a strong positive relationship between digital transformation and operational efficiency, as well as between operational efficiency and financial sustainability. Digital transformation contributes to reducing operational costs, improving service quality, accelerating transaction processes, and enhancing customer satisfaction and financial inclusion. The results also indicate high levels of efficiency and sustainability within the studied banks, supported by strategic planning, diversification of income sources, and effective risk management practices. However, the study identifies several challenges that hinder the effective implementation of digital transformation, including cybersecurity risks, infrastructure limitations, regulatory constraints, and the need to ensure compliance with Sharia principles. At the same time, significant opportunities exist, particularly in developing Sharia-compliant digital products, strengthening cybersecurity systems, improving digital services, upgrading technological infrastructure, and investing in human capital development. The study concludes that digital transformation plays a critical role in improving both efficiency and sustainability in Islamic banks in Jordan. It recommends adopting comprehensive digital strategies, enhancing technological readiness, and strengthening employee capabilities to ensure successful and sustainable digital transformation.*

**KEYWORDS:** Digital Transformation, Islamic Banks, Operational Efficiency, Financial Sustainability, Jordan.

## 1. INTRODUCTION

The world is currently experiencing a rapid digital transformation that is reshaping the banking and financial sector, making it a strategic necessity for institutions seeking competitiveness and sustainability. This transformation also extends to Islamic banks, which face the dual challenge of adopting advanced technologies while maintaining compliance with Sharia principles (Mansori & Maatuk, 2023).

Islamic banks, as a unique financial model based on Islamic law, have witnessed significant global growth, with assets exceeding \$3 trillion, reflecting increasing demand for Sharia-compliant services (Islu, 2024). However, despite this expansion, the sector faces challenges related to technological infrastructure, regulatory frameworks, and awareness of digital transformation, particularly in Jordan, where limitations still exist despite strong technological potential (Tawati, 2021).

Digital transformation plays a critical role in enhancing both efficiency and financial sustainability in Islamic banks. It improves operational efficiency through automation, reduces costs, enhances customer satisfaction, and supports financial inclusion and innovation (Mansori & Maatuk, 2023; Al-Haija et al., 2025). Additionally, it contributes to financial sustainability by improving resource management, strengthening risk management, supporting strategic planning, and increasing institutional resilience (Riza et al., 2024).

Accordingly, this study aims to examine the reality of digital transformation in Jordanian Islamic banks from employees' perspectives and to analyze its impact on efficiency and financial sustainability. It also seeks to provide practical recommendations that support the development of this sector, particularly in light of the economic challenges facing Jordan and the growing need for effective and context-sensitive digital transformation strategies.

### Study problem:

Despite the growing importance of digital transformation in the banking sector globally, Islamic banks in Jordan face significant challenges in keeping pace with this shift. The literature indicates that most modern technologies have a low level of adoption in Islamic banking operations worldwide, with the exception of mobile banking (Aysan et al., 2022). In the Jordanian context, this problem is exacerbated by several factors related to technological infrastructure, the regulatory framework, and the level of awareness and training.

The problem of the study is represented in several

main dimensions, including the weak level of digital transformation in Jordanian Islamic banks, the ambiguity of the relationship between digital transformation and operational efficiency, the lack of clarity regarding the role of digital transformation in promoting financial sustainability, in addition to the lack of field studies from the perspective of employees, the challenges related to Sharia compliance, the limited technological infrastructure, and the lack of awareness and training.

In light of the above, the study problem is crystallized in the following main question: What is the reality of digital transformation in Jordanian Islamic banks, and what is its role in enhancing the efficiency and sustainability of financial services from the employees' point of view?

### Research Questions:

This study seeks to answer the central question: **What is the current state of digital transformation in Jordanian Islamic banks, and what role does it play in enhancing the efficiency and sustainability of financial services from the employees' perspective?**

**The following sub-questions stem from this central question:**

1. What is the current state of digital transformation in Jordanian Islamic banks?
2. What is the level of operational efficiency in Jordanian Islamic banks?
3. What is the level of financial sustainability in Jordanian Islamic banks?
4. Is there a statistically significant relationship between digital transformation and operational efficiency in Jordanian Islamic banks?
5. Is there a statistically significant relationship between digital transformation and financial sustainability in Jordanian Islamic banks?
6. Is there a statistically significant relationship between operational efficiency and financial sustainability in Jordanian Islamic banks?
7. What challenges does digital transformation face in Jordanian Islamic banks from the employees' perspective?
8. What opportunities exist to enhance digital transformation in Jordanian Islamic banks from the employees' perspective?
9. What recommendations and proposals are necessary to enhance digital transformation in Jordanian Islamic banks in a way that serves the goals of efficiency and sustainability?

### Study Objectives:

This study aims to achieve a primary objective: **to determine the current state and role of digital transformation in supporting the efficiency and sustainability of financial services in Jordanian Islamic banks from the perspective of employees.**

#### Sub-Objectives:

1. To diagnose the current state of digital transformation in Jordanian Islamic banks.
2. To analyze the level of operational efficiency in Jordanian Islamic banks.
3. To identify the level of financial sustainability in Jordanian Islamic banks.
4. To analyze the relationship between digital transformation and operational efficiency in Jordanian Islamic banks, and to determine the nature, direction, and strength of this relationship.
5. To analyze the relationship between digital transformation and financial sustainability in Jordanian Islamic banks, and to determine the nature, direction, and strength of this relationship.
6. To analyze the relationship between operational efficiency and financial sustainability in Jordanian Islamic banks, and to understand how each affects the other.
7. To identify the challenges facing digital transformation in Jordanian Islamic banks from the perspective of employees, and to rank them according to their importance and impact.
8. To explore the available opportunities to enhance digital transformation in Jordanian Islamic banks, and to identify priorities and promising areas.
9. To provide practical and applicable recommendations to decision-makers in Jordanian Islamic banks and regulatory bodies to enhance digital transformation in a way that serves the goals of efficiency and sustainability.
9. To contribute to the scholarly literature by enriching knowledge about digital transformation in Islamic banks within the Jordanian context and bridging the research gap in this field.

#### Significance of the Study:

This study derives its significance from several theoretical and applied aspects:

#### Theoretical Significance

1. Enriching the Scientific Literature: This study contributes to enriching the Arabic and international literature on digital

transformation in Islamic banks, especially in the Jordanian context, which suffers from a clear lack of specialized academic studies.

2. Developing a Comprehensive Theoretical Framework: The study presents a comprehensive theoretical framework that links three key variables (digital transformation, efficiency, and financial sustainability) within the context of Islamic banks, thus providing a theoretical foundation for future studies.
3. Understanding Sharia-Compliant Specificity: The study helps in understanding how digital transformation is implemented in an Islamic banking environment that adheres to Sharia principles, which distinguishes it from studies that address conventional banks.
4. Contributing to Institutional Theory: The study contributes to understanding how institutional, organizational, and cultural factors influence the adoption of digital transformation in Islamic banks.
5. Building a Knowledge Base: The study provides a knowledge base that can be used to develop new models and theories on digital transformation in the Islamic financial sector.

#### Practical Significance

1. Supporting Decision-Makers: The study provides field data and information to help decision-makers in Jordanian Islamic banks make informed decisions regarding digital transformation strategies.
2. Improving Institutional Performance: By identifying the relationship between digital transformation, efficiency, and sustainability, banks can develop effective strategies to improve their institutional performance.
3. Directing Technology Investments: The study's findings help direct technology investments toward areas with the greatest impact on efficiency and sustainability, ensuring the optimal use of limited resources.
4. Developing Training Programs: By identifying challenges and knowledge gaps, targeted training programs can be designed to develop the capabilities of employees in the field of digital transformation.
5. Enhancing Competitiveness: The study helps Jordanian Islamic banks enhance their

competitiveness by adopting best practices in digital transformation.

6. **Supporting Regulators:** The study provides valuable information to regulators to develop policies and legislation that support digital transformation in the Islamic banking sector.
7. **Improving Customer Experience:** By understanding the role of digital transformation in enhancing efficiency and customer satisfaction, banks can improve their customers' experience and better meet their needs.
8. **Enhancing Financial Inclusion:** This study contributes to understanding how digital transformation can be used to enhance financial inclusion and reach broader segments of Jordanian society.
9. **Contributing to Economic Development:** By promoting the efficiency and sustainability of Islamic banks, this study indirectly contributes to supporting economic development and financial stability in Jordan.
10. **A Viable Model:** The findings of this study can be useful in developing a model that can be applied or adapted in other Arab and Islamic countries facing similar challenges.

## 2. STUDY TERMINOLOGY

### 2.1. Digital Transformation

Digital transformation is a comprehensive strategic process that involves integrating digital technology into all aspects of banking operations, leading to a fundamental change in how services are delivered and value is created for customers (Mansori & Maatuk, 2023)

**Operational Definition:** In the context of this study, digital transformation is operationally defined as the level of adoption and use of modern digital technologies by Jordanian Islamic banks in their banking operations. This includes:

- Technological Infrastructure (Hardware, Networks, Systems)
- Digital Banking Services (Online Banking, Mobile Applications, ATMs)
- Internal Process Automation (Process Management Systems, Electronic Archiving)
- Data Analytics and Artificial Intelligence
- Cybersecurity and Data Protection

It is measured through a questionnaire that includes a set of statements assessing these

dimensions from the employees' perspective.

### 2.2. Efficiency

Efficiency is the bank's ability to achieve its objectives with the least amount of resources and time, while maintaining the quality of services provided (Al-Haija et al., 2025).

**Operational Definition:** In the context of this study, efficiency is operationally defined as the level of operational performance of Jordanian Islamic banks, encompassing the following dimensions:

1. **Operational Efficiency:** The bank's ability to complete transactions and operations quickly, accurately, and with minimal errors.
2. **Customer Satisfaction:** The level of customer satisfaction with the quality of services provided, responsiveness, and ease of access to services.
3. **Financial Inclusion:** The bank's ability to reach broader segments of society and provide accessible financial services.
4. **Innovation:** The bank's ability to develop new products and services that meet evolving customer needs.
5. **Cost Reduction:** The bank's ability to reduce operating costs while maintaining service quality.

Efficiency is measured through a questionnaire containing a set of statements that assess these dimensions from the employees' perspective.

**Financial Sustainability:** Financial sustainability is the bank's ability to continue providing its services efficiently over the long term, while balancing financial, social, and environmental objectives (Riza et al., 2024).

**Operational Definition:** In the context of this study, financial sustainability is operationally defined as the ability of Jordanian Islamic banks to achieve financial stability and sustainable growth.

**It encompasses the following dimensions:**

1. **Financial Balance:** The bank's ability to balance revenues and expenses and maintain sustainable profitability levels.
2. **Diversification of Income Sources:** The bank's ability to diversify its income sources by offering a variety of products and services, thus reducing reliance on a single source.
3. **Strategic Planning:** The existence of clear, long-term strategic plans that take into account economic and technological changes.
4. **Risk Management:** The bank's ability to identify, assess, and manage various risks (credit, operational, market, and cyber risks).

5. Resilience: The bank's ability to adapt to economic, political, and technological changes and crises.

This is measured through a questionnaire that includes a set of statements assessing these dimensions from the employees' perspective.

### 2.3. Islamic Banks

Islamic banks are financial institutions that provide banking and financial services in accordance with the provisions of Islamic Sharia. They adhere to the principles of prohibiting interest (riba), profit and loss sharing, and avoiding investment in activities prohibited by Sharia.

**Operational Definition:** For the purposes of this study, Islamic banks include all banks operating in Jordan that offer Islamic banking services, whether they are fully-fledged Islamic banks or conventional banks with Islamic windows or branches.

### 2.4. Financial Services

Financial services are the range of services that financial institutions provide to their clients, including deposits, financing, transfers, investment, and others.

**Operational Definition:** For the purposes of this study, financial services encompass all Islamic banking products and services offered by Jordanian Islamic banks to their clients, such as:

- Deposit accounts (current accounts, savings accounts, investment accounts)
- Islamic financing structures (Murabaha, Mudaraba, Musharaka, Ijara, Istisna, Salam)
- Banking services (transfers, currency exchange, letters of guarantee, letters of credit)
- Investment services (portfolio management, Sukuk, investment fund)

### 2.5. Islamic Bank Employees

**Operational Definition:** For the purposes of this study, Islamic bank employees refer to all staff working in Jordanian Islamic banks or in Islamic branches and windows of conventional banks, across all job levels (senior management, middle management, executive staff) and specializations (banking operations, information technology, marketing, human resources, Sharia compliance, etc.). Financial Technology (FinTech)

**Theoretical Definition:** Financial technology is the use of modern technology to deliver innovative financial services in more efficient and effective ways (Rahman et al., 2023; Atif et al., 2021).

**Operational Definition:** In the context of this study,

**financial technology encompasses all technological applications used in delivering Islamic financial services, such as:**

- Mobile banking applications
- E-wallets
- Electronic payment systems
- Islamic crowd funding platforms
- Block chain and smart contract technologies
- Artificial intelligence and machine learning in banking

**Business Process Management (BPM):** Business process management is a structured methodology for improving and automating business processes to achieve efficiency and effectiveness (Mansori & Maatuk, 2023).

**Operational Definition:** In the context of this study, business process management refers to the systems and tools used in Jordanian Islamic banks to design, implement, monitor, and improve banking processes digitally.

**Previous Studies:**

Previous studies were organized into four main axes covering different aspects of the research topic: digital transformation in Islamic banks, efficiency and performance, financial sustainability, and the Arab and regional context.

#### *First Axis: Studies Addressing Digital Transformation In Islamic Banks*

The study by Mansori and Maatuk (2023) examined the role of technology in Islamic banks and proposed a Business Process Management (BPM) model for digital transformation, which was partially implemented at the Libyan Islamic Bank, yielding promising results and demonstrating its applicability in similar contexts. Similarly, Aysan et al. (2022) investigated the digital readiness of Islamic banks using a quantitative approach and found that, despite progress in mobile banking, the adoption of advanced technologies such as AI and blockchain remains limited, highlighting the need for further investment in fintech.

Khemgani (2024) proposed strategies to accelerate digital transformation based on case studies of leading Islamic banks, revealing that successful transformation requires an integrated approach combining technology, processes, and organizational culture. In the same context, Rahman et al. (2023) emphasized the role of fintech in enhancing Islamic banking performance, noting that the COVID-19 pandemic accelerated digital transformation, despite challenges related to cybersecurity and Sharia compliance.

Furthermore, Al-Hajja et al. (2025) found a

positive relationship between digital transformation and both profitability and operational efficiency in Islamic banks through an empirical quantitative study. Finally, Masrina et al. (2024) highlighted that Islamic banking is moving toward "Islamic Finance 5.0," characterized by full digital integration and the adoption of advanced technologies, creating new opportunities for innovation in financial services.

### ***Second Axis: Studies That Addressed Efficiency And Performance In Islamic Banks***

The study by Nofinawati et al. (2025) examined digital financial transformation in Islamic banking and found a positive relationship between digitization and operational efficiency, as well as improvements in cost reduction and service quality. Similarly, Al-Aib (2025) conducted a comparative analysis of FinTech adoption between Jordanian, Arab, and international banks, revealing a clear gap in adoption levels and highlighting infrastructure and regulatory challenges in Jordan despite existing opportunities.

Mohamed (2025) identified key barriers to digital service adoption in Libya through a mixed-methods approach, emphasizing the critical role of trust and service quality. In the MENA context, Boubaker et al. (2025) reported rapid FinTech growth alongside regulatory and infrastructural challenges. Likewise, Meero (2025) found that Islamic banks face unique challenges in adopting financial technologies compared to conventional banks, resulting in efficiency gaps despite ongoing business model evolution.

Riza et al. (2024) confirmed that digital banking supports financial sustainability by enhancing balance across financial, social, and environmental objectives, while Othman et al. (2024) highlighted the role of digital Islamic finance in achieving sustainable development goals through Maqasid and Maslahah principles. Additionally, Jibo (2025) emphasized the potential of green FinTech in promoting environmental sustainability and competitiveness in Islamic banking, and Fahad et al. (2024) stressed the importance of integrating sustainability into digital financial transformation.

From a broader perspective, Isliu (2024) demonstrated that digital FinTech solutions contribute to sustainable growth in the Islamic economy and enhance financial inclusion, while also confirming the effectiveness of Islamic financial systems within digital environments, particularly in Libya. Similarly, Al-Madani and Al-Dhabah (2024) identified digital transformation as a key driver of sustainable development, despite existing structural

challenges.

Finally, Lemhishi et al. (2024) highlighted the importance of Sharia compliance and financial feasibility in developing sukuk markets, while Tawati (2021) revealed the slow pace of Islamic banking transformation in Jordan, characterized by weak investment in Islamic products and inefficiencies in resource utilization.

### **Commentary on Previous Studies:**

**A review of previous studies yielded several important observations:**

#### **Areas of Agreement:**

1. Most studies agree on the importance of digital transformation in enhancing the efficiency and performance of Islamic banks (Mansori et al., 2023; Nofinawati & Nasution, 2025; Al-Haija, 2025; and Riza, 2024).
2. Studies confirm a positive relationship between digital transformation and operational efficiency (Nofinawati & Nasution, 2025; Al-Haija, 2025; and Meero, 2025).
3. Studies indicate that digital transformation contributes to enhancing financial sustainability (Othman, 2024; Jibo, 2025; Fahad, 2024; Nuriya, 2024; and Riza, 2024).
4. Studies agree that Islamic banks face unique challenges related to Sharia compliance (Islwi et al., 2024; Rahman et al., 2023; Aysan et al., 2022).
5. Studies emphasize the importance of technological infrastructure and a regulatory framework for successful digital transformation (Saeed & Bampton, 2013; Boubaker et al., 2025).

#### **Differences:**

1. The studies differ in their methodologies. Some used quantitative methods (Al-Haija et al., 2025; Aysan et al., 2022), others qualitative (Othman et al., 2024; Jibo, 2025), and still others a mixed approach (Mohmed, 2025).
2. Studies vary in their geographical focus, with some concentrating on the Libyan context (Mansori & Maatuk, 2023; Isliou et al., 2024; Saeed & Bampton, 2013; Lemhishi et al., 2013; Touati, 2021; Mohamed, 2025), while others focus on the global context (Aysan et al., 2022) or the regional context (Boubaker et al., 2025).
3. Studies vary in the dimensions they address. Some focus on efficiency (Al-Haija et al., 2025), others on sustainability (Othman et al., 2024; Jibo et al., 2025; Fahad et al., 2024;

Nuriya et al., 2024; Riza et al., 2024), and still others on both (Meero, 2025).

#### Research Gaps:

1. A lack of field studies in the Jordanian context that survey the opinions of employees in Jordanian Islamic banks.
2. A lack of studies linking the three variables: No previous studies have comprehensively linked digital transformation, efficiency, and financial sustainability within a single context, particularly in the Jordanian environment.
3. A lack of studies on specific dimensions: There is a shortage of studies addressing specific dimensions of efficiency (such as financial inclusion and innovation) and sustainability (such as resilience and diversification of income sources) within the context of digital transformation.
4. Limited Studies on Challenges and Opportunities: Although some studies have identified challenges (Rahman et al., 2023), more detailed studies are needed to identify challenges and opportunities from the perspective of employees in Jordanian Islamic banks.

#### Distinguishing Features of the Current Study:

1. Focus on the Jordanian Context: This study focuses specifically on Jordanian Islamic banks, a context that suffers from a clear lack of academic research.
2. Fieldwork Approach: This study employs a fieldwork approach, surveying employees in Islamic banks and providing valuable primary data.
3. Interrelationship Between the Three Variables: This study integrates digital transformation, efficiency, and financial sustainability, providing a comprehensive understanding of the relationships between these variables.
4. Multidimensional Focus: This study addresses multiple dimensions of efficiency (operational, customer satisfaction, financial inclusion, innovation, and cost reduction) and sustainability (financial balance, diversification of income sources, strategic planning, risk management, and resilience).
5. Utilizing previous studies: This study benefits from the results and recommendations of previous studies in building its theoretical framework and designing its research tools.

### 3. THEORETICAL FRAMEWORK

Studies highlight limitations in digital transformation within Jordanian banks, including Islamic banks, due to low deposit utilization and weak investment in Islamic products, with a noticeable gap between strategic aspirations and actual implementation. Although digital transformation is widely associated with improved operational efficiency, there is a lack of empirical evidence in the Jordanian context to assess its impact on key dimensions such as transaction speed, cost reduction, service quality, and customer satisfaction (Mansori & Maatuk, 2023; Al-Haija et al., 2025).

Similarly, despite the recognized importance of financial sustainability—encompassing financial balance, income diversification, risk management, and resilience—there is limited research examining how digital transformation supports these dimensions in Jordanian Islamic banks (Riza et al., 2024). In addition, most prior studies are theoretical or based on international contexts, with a shortage of field-based research reflecting employees' perspectives, despite their central role in identifying operational challenges and system effectiveness.

Furthermore, Islamic banks face the dual challenge of ensuring Sharia compliance in digital solutions while overcoming infrastructural and organizational barriers, including limitations in telecommunications, lack of technical expertise, and insufficient employee training. These factors collectively hinder the effective implementation of digital transformation in the Jordanian Islamic banking sector.

#### 3.1. Digital Transformation In Islamic Banks: Concept And Dimensions

##### 3.2. The Concept Of Digital Transformation

Digital transformation is a comprehensive strategic process that involves integrating digital technology into all aspects of banking operations, leading to a fundamental change in how services are delivered and value is created for customers (Mansori & Maatuk, 2023). Digital transformation goes beyond simply applying technology; it includes redesigning processes, changing corporate culture, and developing new business models.

In the context of Islamic banks, digital transformation acquires an additional dimension: the necessity of complying with the provisions of Islamic Sharia. Islamic banks are obligated to ensure that all implemented technological solutions do not conflict with Sharia principles, such as the prohibition of *riba* (interest), *gharar* (uncertainty), *maysir* (gambling),

and investment in prohibited activities (Rahman et al., 2023)

### **3.3. The Importance Of Digital Transformation In Islamic Banks.**

**Digital transformation is of particular importance to Islamic banks for the following reasons:**

1. **Enhancing Competitiveness:** In light of intense competition from conventional banks and fintech companies, digital transformation becomes essential for Islamic banks to maintain their market share and attract new customers (Aysan et al., 2022).
2. **Improving Operational Efficiency:** Digital transformation helps automate processes, reduce human error, and expedite transactions, thus enhancing operational efficiency (Mansori & Maatuk, 2023; Al-Haija et al., 2025).
3. **Enhancing Customer Experience:** Digital solutions provide customers with faster, more convenient services, accessible anytime and anywhere, thereby boosting customer satisfaction and loyalty (Al-Haija et al., 2025).
4. **Achieving Financial Inclusion:** Digital technology helps reach wider segments of society, including remote areas and those underserved by traditional banking (Riza et al., 2024).
4. **Reducing Costs:** Digital transformation reduces the need for physical branches and staff, significantly lowering operating costs (Al-Haija et al., 2025).
5. **Fostering Innovation:** Digital technology provides a platform for innovation in Islamic financial products and services, meeting evolving customer needs (Rahman et al., 2023).
6. **Enhancing Risk Management:** Digital systems offer advanced tools for identifying, assessing, and managing various risks, including cyber risks (Rahman et al., 2023; Riza et al., 2024).
7. **Supporting Sustainability:** Digital transformation contributes to financial, environmental, and social sustainability by improving efficiency and reducing waste (Riza et al., 2024).

### **3.4. Dimensions Of Digital Transformation In Islamic Banks**

**Digital transformation in Islamic banks encompasses several key dimensions:**

#### **1. Technological Infrastructure**

**Technological infrastructure includes all the hardware, networks, and underlying systems necessary to operate digital services. This includes:**

- Servers and data centers
- Communication and internet networks
- Core banking systems
- Cybersecurity and data protection systems (Mansori & Maatuk, 2023) (Saeed & Bampton, 2013)

#### **2. Digital Banking**

**Digital banking services include all digital channels through which customers can access banking services. These include:**

- Internet banking
- Mobile banking applications
- ATMs
- E-wallets
- Electronic payment systems (Rahman et al., 2023) (Aysan et al., 2022).

#### **3. Internal Process Automation**

**Internal process automation involves using technology to automate internal banking processes, including:**

- Business Process Management (BPM) systems
- Electronic archiving
- Customer Relationship Management (CRM) systems
- Electronic Human Resources systems (Mansori & Maatuk, 2023)

#### **4. Data Analytics And Artificial Intelligence**

**This dimension encompasses the use of advanced technologies for data analysis and decision-making, including:**

- Big Data Analytics
- Artificial Intelligence
- Machine Learning
- Chatbots (Aysan et al., 2022)

#### **5. Blockchain And Smart Contract Technologies**

**These emerging technologies, which could revolutionize Islamic financial services, include:**

- Blockchain technology
- Smart Contracts
- Digital Sukuk (Aysan et al., 2022)

#### **6. Cybersecurity And Data Protection**

**This dimension includes all Procedures and systems designed to protect data and systems from cyber threats:**

- Threat detection systems

- Encryption
- Multi-factor authentication
- Data protection policies (Rahman et al., 2023).

### 3.5. Challenges Facing Digital Transformation In Islamic Banks

Despite the significant benefits of digital transformation, Islamic banks face several challenges:

1. **Sharia Challenges:** The need to ensure that all technological solutions comply with Sharia principles, and a shortage of qualified personnel specializing in Sharia supervision of modern technologies (Rahman et al., 2023).
2. **Technological Challenges:** Limited technological infrastructure in some countries, and a lack of specialized technical expertise (Saeed & Bampton, 2013).
3. **Regulatory Challenges:** The absence of clear regulatory frameworks for Islamic financial technology in some countries, and the slow pace of legislation in keeping up with technological developments.
4. **Financial Challenges:** The high cost of investing in technology, especially for small and medium-sized Islamic banks (Aysan et al., 2022).
5. **Human Resources Challenges:** A lack of awareness of the importance of digital transformation, resistance to change among some employees, and a lack of adequate training.
6. **Security Challenges:** Increasing cyber risks, data breach threats, and online fraud (Rahman et al., 2023)
7. **Cultural Challenges:** Low levels of trust in digital services among some segments of society.

### 3.6. Opportunities For Digital Transformation In Islamic Banks

On the other hand, digital transformation offers significant opportunities for Islamic banks:

1. **Geographic Expansion:** Access to new markets without the need to open physical branches (Riza et al., 2024).
2. **Product Innovation:** Development of innovative Islamic financial products that meet evolving customer needs (Rahman et al., 2023)
3. **Financial Inclusion:** Access to broader segments of society, including those underserved by banking (Riza et al., 2024)
4. **Green Finance:** Leveraging technology to

develop Islamic green finance products.

5. **Collaboration with Fintech Companies:** Potential partnerships with Fintech companies to develop innovative solutions (Rahman et al., 2023).
6. **Improved Efficiency:** Achieving high levels of operational efficiency through automation (Mansori & Maatuk, 2023; Al-Haija et al., 2025).

Enhanced Sustainability: Contributing to the achievement of the Sustainable Development Goals through digital solutions (Riza et al., 2024).

### 3.7. Dimensions Of Efficiency In Islamic Banks

Efficiency is a bank's ability to achieve its objectives with minimal resources and time, while maintaining the quality of services provided (Al-Haija et al., 2025).

**In the context of this study, efficiency encompasses five main dimensions:**

#### 3.8. Operational Efficiency

Operational efficiency refers to a bank's ability to complete transactions and operations quickly, accurately, and with minimal errors. Key indicators include:

- Speed of transaction completion
- Accuracy of operations and low error rate
- Efficient use of resources
- Employee productivity
- Quality of internal processes

**The Role of Digital Transformation: Digital transformation contributes to enhancing operational efficiency through:**

- Automating routine processes, thus reducing the time and effort required.
- Reducing human error through automated systems.
- Improving workflow and process coordination (Mansori & Maatuk, 2023)
- Providing accurate and timely information for decision-making (Al-Haija et al., 2025).

Al-Haija et al. (2025) demonstrated that digital banking transformation platforms have a positive impact on the efficiency of Islamic banks. Nofinawati et al. (2025) also confirmed that digital financial transformation enhances efficiency in Islamic banking systems.

**Customer Satisfaction:**

**Customer satisfaction refers to the level of customer satisfaction with the quality of services provided, the speed of response, and the ease of access to services. Key indicators include:**

- Level of customer satisfaction with services

- Speed of response to customer inquiries and complaints
- Ease of access to services
- Quality of customer experience
- Customer retention rate

**The Role of Digital Transformation: Digital transformation contributes to enhancing customer satisfaction by:**

- Providing services available 24/7
- Offering faster and more convenient services (Al-Haija et al., 2025)
- Personalizing services based on individual customer needs
- Improving communication channels with customers.

Al-Haija et al. (2025) (2025) Digital transformation enhances customer satisfaction in Islamic banks (Al-Haija et al., 2025). A study by Nisa et al. also emphasized the importance of digital services in improving customer experience.

**Financial Inclusion:**

**Financial inclusion refers to a bank's ability to reach broader segments of society and provide accessible financial services, including those underserved by traditional banking. Key indicators include:**

- Percentage of the population with access to banking services
- Access to remote areas
- Access to services for low-income groups
- Diversification of the customer base
- Ease of account opening

**The Role of Digital Transformation: Digital transformation contributes to enhancing financial inclusion through:**

- Access to remote areas without the need for physical branches (Riza et al., 2024)
- Reducing the cost of services, making them more accessible to low-income groups (Riza et al., 2024)
- Simplifying account opening and service access procedures
- Providing efficient microfinance services.

Nuriyah et al. (2024) confirmed that digital fintech solutions can enhance financial inclusion, and Riza et al. (2024) highlighted the role of digital banking in achieving financial inclusion.

**Innovation:**

**Innovation refers to a bank's ability to develop new products and services that meet evolving customer needs and adopt new business practices. Key indicators include:**

- Number of new products and services

developed

- Speed of new product development and launch
- Level of investment in research and development
- Adoption of new technologies
- Culture of innovation within the organization

**The role of digital transformation: Digital transformation contributes to fostering innovation by:**

- Providing technological platforms that facilitate the development of new products (Rahman et al., 2023)
- Enabling open innovation and partnerships with fintech companies (Rahman et al., 2023)
- Utilizing big data and artificial intelligence to understand customer needs.
- Accelerating the development and testing of new products.

Rahman et al. (2023) indicated that fintech innovations play a crucial role in improving the performance of Islamic banks. Masrina et al. (2024) also emphasized the opportunities for innovation in the era of Islamic finance (Saeed & Bampton, 2013)

**Cost Reduction:**

**Cost reduction refers to a bank's ability to reduce operating costs while maintaining service quality.**

**Key indicators include:**

- Cost-to-Income Ratio
- Cost per transaction
- Cost of acquiring a new customer
- Cost of branches and physical infrastructure
- Efficiency in the use of human resources

**The Role of Digital Transformation: Digital transformation contributes to cost reduction by:**

- Reducing the need for physical branches (Al-Haija et al., 2025)
- Automating processes, thus reducing the need for staff
- Reducing the use of paper and physical materials (Riza et al., 2024).
- Improving Resource Efficiency (Al-Haija et al., 2025)

Al-Haija et al. (2025) demonstrated that digital transformation helps reduce operational costs. Nofinawati et al. also confirmed that digital transformation helps reduce costs.

### **3.9. Dimensions Of Financial Sustainability In Islamic Banks**

Financial sustainability is a bank's ability to continue providing its services efficiently over the long term, while balancing financial, social, and environmental objectives (Riza et al., 2024). In the context of this study, financial sustainability

encompasses five key dimensions:

### 3.10. Financial Balance

**Financial balance refers to a bank's ability to balance revenues and expenses and maintain sustainable profitability levels. This includes:**

**Key Indicators:**

- Return on Assets (ROA)
- Return on Equity (ROE)
- Profit Margin
- Capital Adequacy Ratio
- Financial Stability

**The Role of Digital Transformation: Digital transformation contributes to enhancing financial balance through:**

- Increasing revenues by offering new services (Al-Haija et al., 2025)
- Reducing operating costs (Al-Haija et al., 2025)
- Improving asset and liability management (Riza et al., 2024).
- Enhancing Profitability Through Efficiency (Al-Haija et al., 2025)

Al-Haija et al. (2025) demonstrated that digital banking transformation platforms have a positive impact on the profitability of Islamic banks. Tuwati's (2021) study also highlighted the importance of financial equilibrium in Jordanian Islamic banks.

### 3.11. Income Diversification

**Income diversification refers to a bank's ability to diversify its revenue streams by offering a variety of products and services, thereby reducing reliance on a single source. These include:**

**Key indicators:**

- Percentage of income from non-traditional sources
- Diversification of products and services
- Distribution of revenue across different sectors
- Stability of income streams
- Resilience of the business model

**The role of digital transformation: Digital transformation contributes to enhancing the diversification of income sources through:**

- Enabling the development of new digital products and services (Rahman et al., 2023)
- Opening new channels for revenue generation (such as mobile banking) (Aysan et al., 2022)
- Facilitating entry into new markets (Riza et al., 2024)
- Enabling innovative business models (Masrina et al., 2024)

Rahman et al. (2023) indicated that fintech innovations provide opportunities for diversifying income sources. Masrina et al. (2024) also confirmed

the potential for developing new products in the era of Islamic finance.

### 3.12. Strategic Planning

Strategic planning refers to the existence of clear, long-term strategic plans that take into account economic and technological changes. **Key indicators include:**

- A clear strategic plan
- Alignment of strategy with technological developments
- Flexibility and adaptability of strategy
- Participation of all levels in planning
- Monitoring and evaluation of strategy implementation

**The Role of Digital Transformation: Digital transformation contributes to enhancing strategic planning by:**

- Providing accurate and timely data to support strategic decision-making (Al-Haija et al., 2025)
- Enabling data-driven planning
- Facilitating continuous monitoring and evaluation of performance (Al-Haija et al., 2025)
- Enhancing the ability to predict future trends (Meero, 2025)

Evidence from Previous Studies: Khamqani's study (2024) emphasized the importance of having a clear strategy for digital transformation (Meero, 2025). Aysan et al. also pointed to this. This highlights the need for Islamic banks to adopt the right approach to digitalization strategies (Aysan et al., 2022).

### 3.13. Risk Management

**Risk management refers to a bank's ability to identify, assess, and manage various risks (credit, operational, market, and cyber). Key indicators include:**

- Effectiveness of risk management systems
- Non-performing loan ratio
- Level of exposure to various risks
- Efficiency of internal control systems
- Ability to handle cyber risks

**The Role of Digital Transformation: Digital transformation contributes to enhancing risk management by:**

- Providing advanced systems for identifying and assessing risks (Rahman et al., 2023; Riza et al., 2024).
- Improving internal controls through automated systems (Mansori & Maatuk, 2023)
- Enabling real-time risk monitoring (Al-Haija et

al., 2025)

- Enhancing cybersecurity through advanced technologies (Rahman et al., 2023)

Rahman et al. (2023) highlighted the importance of cyber risk management in the fintech era. Riza et al. (2024) also emphasized the role of digital banking in improving risk management.

### 3.14. Resilience

**Resilience refers to a bank's ability to adapt to economic, political, and technological changes and crises. These include:**

**Key indicators:**

- Adaptability to change
- Rapid response to crises
- Business model resilience
- Ability to continue providing services in challenging circumstances
- Rapid recovery from crises

**The role of digital transformation: Digital transformation contributes to enhancing resilience through:**

- Enabling remote work and business continuity (Rahman et al., 2023; Riza et al., 2024).
- Providing multiple service delivery channels (Nisa et al., 2025)
- Enhancing the ability to adapt quickly to changes (Riza et al., 2024)
- Reducing reliance on physical infrastructure (Riza et al., 2024)

Rahman et al. (2023) emphasized the role of financial technology in enhancing the resilience of Islamic banks in the post-pandemic era. Riza et al. also indicated this. (2024) to the importance of flexibility in achieving sustainability (Riza et al., 2024)

### 3.15. The Relationship Between Digital Transformation and Efficiency

The literature indicates a strong positive relationship between digital transformation and efficiency in Islamic banks.

**Digital transformation enhances efficiency through several mechanisms:**

1. Automation: Automating processes reduces the time and effort required to complete transactions and minimizes human error (Mansori et al., 2023; Nofinawati & Nasution, 2025).
2. Improved Workflow: Business process management systems help improve workflow and streamline processes (Mansori & Maatuk, 2023).

3. Information Provision: Digital systems provide accurate and timely information for decision-making (Al-Haija et al., 2025; Meero, 2025).

4. Enhanced Customer Experience: Digital services provide a better customer experience, which boosts customer satisfaction and loyalty (Al-Haija et al., 2025; Nisa et al., 2025). 5. Cost Reduction: Digital transformation significantly reduces operating costs (Nofinawati & Nasution, 2025; Al-Haija et al., 2025).

A study by Al-Haija et al. (2025) demonstrated that digital banking transformation platforms have a positive impact on the efficiency of Islamic banks. A study by Nofinawati et al. (2025) confirmed that digital financial transformation enhances efficiency in Islamic banking systems (Nofinawati & Nasution, 2025).

**The Relationship between Digital Transformation and Financial Sustainability:**

The literature also indicates a positive relationship between digital transformation and financial sustainability in Islamic banks.

**Digital transformation enhances sustainability through several mechanisms:**

1. Improved Profitability: Digital transformation helps increase revenues and reduce costs, thereby enhancing profitability and financial stability (Al-Haija et al., 2025).
2. Diversifying Income Sources: Digital transformation enables the development of new products and services, which helps diversify income sources (Rahman et al., 2023; Masrina et al., 2024).
3. Enhancing Risk Management: Digital systems provide advanced risk management tools (Rahman et al., 2023; Riza et al., 2024).
4. Enhancing Resilience: Digital transformation enhances a bank's ability to adapt to changes and crises (Rahman et al., 2023; Riza et al., 2024).
5. Supporting Strategic Planning: Digital systems provide accurate data that supports strategic planning (Al-Haija et al., 2025; Meero, 2025).

A study by Riza et al. (2024) confirmed that digital banking plays a crucial role in enhancing the sustainability of the Islamic finance industry. A study by Othman et al. also indicated this. (2024) that digital Islamic finance can contribute to achieving the Sustainable Development Goals (Othman et al., 2024).

**The Relationship between Efficiency and Financial Sustainability:**

There is also a positive relationship between

efficiency and financial sustainability.

**More efficient banks are generally more sustainable, and vice versa:**

1. Efficiency Enhances Profitability: More efficient banks achieve higher profitability, which enhances financial stability and sustainability (Al-Haija et al., 2025).
2. Efficiency Reduces Risk: More efficient operations reduce operational risks (Mansori & Maatuk, 2023).
3. Sustainability Requires Efficiency: Achieving long-term sustainability requires high efficiency in resource utilization (Riza et al., 2024).

Innovation Links Them: Innovation enhances efficiency and supports sustainability simultaneously (Rahman et al., 2023; Masrina et al., 2024).

#### 4. METHODOLOGY

This study falls under the category of descriptive studies, as it aims to record, analyze, and interpret the phenomenon in its current state. This is achieved by collecting the necessary and sufficient data about the phenomenon and its components through a set of organized procedures that define the type of data, its source, and the methods of obtaining it. The descriptive approach focuses on collecting, classifying, and categorizing data and facts, in addition to conducting thorough, accurate, and in-depth analysis. It also includes a degree of interpretation of these results. Therefore, measurement, classification, and interpretation methods are used to extract meaningful conclusions and then arrive at generalizations about the phenomenon under study. (Saber & Khafaja, 2002, p. 87)

**Study Population:**

The study population consists of employees at the (senior management, middle management, and executive) levels in three Islamic banks in Jordan (Jordan Islamic Bank, Arab Islamic International Bank, and Al Safwa Islamic Bank).

**Study Sample:** The researcher selected the study sample using purposive sampling, as it was impossible to accurately enumerate the study population from employees at the (senior management, middle management, and executive) levels in the three Islamic banks in Jordan (Jordan Islamic Bank, Arab Islamic International Bank, and Al Safwa Islamic Bank). The study included (98) participants (male and female) representing the field study population.

**Study Instruments:** After reviewing the literature

and previous studies related to the study topic, the researcher designed a questionnaire directed at employees at the (senior management, middle management, and executive) levels in three Islamic banks in Jordan (Jordan Islamic Bank, Arab Islamic International Bank, and Safwa Islamic Bank).

**Study Procedures: In accordance with the study's limitations and to answer its questions, the researcher followed these steps:**

- 1) Reviewing numerous previous studies and research in this field, both Arabic and foreign.
- 2) Identifying, preparing, and developing the study instrument, which is the questionnaire.
- 3) Presenting the study instrument to the supervisor to ensure its validity and suitability for the study questions, and then making any necessary deletions or modifications based on their suggestions.
- 4) The study instrument was administered to a pilot sample of 30 employees at the (senior management, middle management, and executive) levels in three Islamic banks in Jordan (Jordan Islamic Bank, Arab Islamic International Bank, and Safwa Islamic Bank). The study aimed to verify the validity and reliability of the current research instrument.
- 5) The study sample was selected using purposive sampling from employees at the (senior management, middle management, and executive) levels in three Islamic banks in Jordan (Jordan Islamic Bank, Arab Islamic International Bank, and Safwa Islamic Bank).
- 6) The researcher distributed the questionnaire to the study sample during the 2025-2026 academic year through direct distribution via personal visits to ensure the accuracy of the responses.
- 7) The results were recorded, analyzed, interpreted, and recommendations and suggestions were presented.

**Validity Test:**

The study instrument was reviewed by experienced and specialized referees (Dr. Muhammad Fakhri Suwailih and Dr. Hashim Ahmad Al-Balas) to ensure its validity and suitability for the study's questions. Any necessary deletions or modifications were then made based on their suggestions.

**Reliability Test:**

The instrument's Cronbach's alpha coefficient was 0.979, exceeding 0.7. Therefore, the questionnaire possesses a high reliability rate, fulfilling the study's objectives. The highest reliability scores were

observed among the opinions regarding [the following]. The questionnaire consisted of 15 statements, each with a five-point Likert scale ranging from the highest degree of agreement (5) to the lowest degree of disagreement (1), with a neutral middle score of (3).

**Statistical Analysis:** Based on the nature of the research and its objectives, the data will be analyzed using the Statistical Package for the Social Sciences (SPSS).

**Results will be extracted using the following statistical methods:**

- a. Frequencies and Percentages: To identify the characteristics of the research sample based on their personal data.
- b. Arithmetic means and standard deviations: To

calculate the means of the questionnaire items and the total scores for the questionnaire dimensions based on the responses of the research sample.

- c. Pearson correlation coefficient: To calculate the relationship between the questionnaire axes.
- d. Cronbach's alpha coefficient: To calculate the reliability of the questionnaire dimensions.
- e. Multiple regression test to determine the significance of differences between the arithmetic means.
- f. Range equation: To describe the arithmetic mean of responses for each item and dimension as follows:

*Table No. (1): Range Equation.*

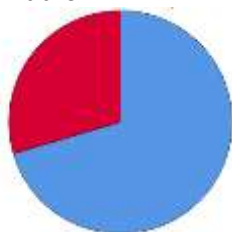
| Mean Category | Degree options    | Agreement Percentage | Degree of Agreement |
|---------------|-------------------|----------------------|---------------------|
| 1.00-1.8      | Strongly disagree | 36%                  | Very low            |
| 1.81-2.60     | Disagree          | 36.1% - 52%          | Low                 |
| 2.60-3.40     | Neutral           | 35% - 68.9%          | Medium              |
| 3.41-4.20     | Agree             | 69% - 84.9%          | high                |
| 4.21-5.00     | Strongly agree    | 85% - 100%           | Very high           |

## 5. STUDY RESULTS

**First: Demographic Characteristics of the Study**

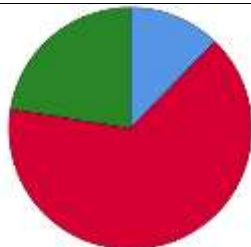
**Sample:** The following table illustrates the demographic characteristics of the sample of employees at the (senior management - middle

management - executive) levels in Islamic banks in Jordan, which amounted to five variables: gender, age, educational qualification, number of years of experience, job level:



*Table No. (2): Distribution Of The Sample Members According To Demographic Characteristics (Gender).*

| Variables | Classification | Frequency | Ratio |
|-----------|----------------|-----------|-------|
| Sex       | Male           | 69        | 70.4  |
|           | Female         | 29        | 29.6  |



*Table No. (3): Distribution Of The Sample Members According To Demographic Characteristics (Age).*

| Variables | Classification     | Frequency | Ratio |
|-----------|--------------------|-----------|-------|
| age       | 20 to 30 years old | 12        | 12.2  |
|           | 31 to 40 years old | 64        | 65.3  |

|  |                    |    |      |
|--|--------------------|----|------|
|  | 41 to 50 years old | 22 | 22.4 |
|  | Over 50 years old  | 00 | 0    |

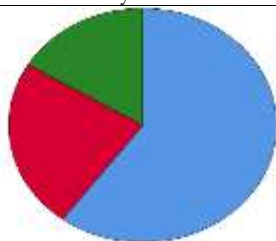


Table No. (4): Distribution Of The Sample Members According To Demographic Characteristics (Educational Qualification).

| Variables                 | Classification | Frequency | Ratio |
|---------------------------|----------------|-----------|-------|
| educational qualification | Bachelor's     | 59        | 60.2  |
|                           | Master's       | 23        | 23.5  |
|                           | PhD            | 16        | 16.3  |

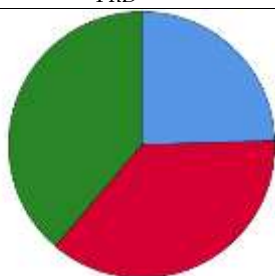


Table No. (5): Distribution Of The Sample Members According To Demographic Characteristics (Years Of Experience).

| Variables           | Classification | Frequency | Ratio |
|---------------------|----------------|-----------|-------|
| years of experience | Under 3 years  | 24        | 24.5  |
|                     | 4 to 7 years   | 36        | 36.7  |
|                     | Over 7 years   | 38        | 38.8  |

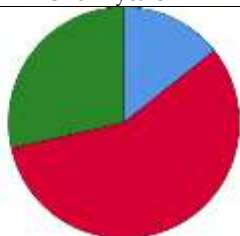


Table No. (6): Distribution Of The Sample Members According To Demographic Characteristics (Job Level).

| Variables | Classification    | Frequency | Ratio |
|-----------|-------------------|-----------|-------|
| job level | Senior Management | 14        | 14.3  |
|           | Middle Management | 56        | 57.1  |
|           | Executive Staff   | 28        | 28.6  |

The study consisted of 70.4% males (69 participants) and 29.6% females (29 participants). In terms of age group, the majority (65.3%) were in the 31-40 age group, and 22.4% were in the 41-50 age group. In terms of educational qualification, the majority (60.2%) had a bachelor's degree, 23.5% had a master's degree, and 16.3% had a doctorate. In terms of years of experience, 38.8% had more than 7

years, 36.7% had 4-7 years, and 24.5% had less than 3 years of experience. In terms of job level, 57.1% were in middle management, 28.6% were executives, and 14.3% were senior management.

**Second: Questionnaire items:**  
**First: The reality of digital transformation in Jordanian Islamic banks**

Table No. (7): The Reality Of Digital Transformation In Jordanian Islamic Banks.S

| No | Items | Mean | Standard | Ranking | Rating |
|----|-------|------|----------|---------|--------|
|----|-------|------|----------|---------|--------|

|  |   |      | Deviation |      |        |
|--|---|------|-----------|------|--------|
| 1                                      | The necessary digital infrastructure is in place to complete the digital transformation of Jordanian Islamic banks. | 3.42 | 0.785     | 3    | high   |
| 2                                      | Professional digital systems are implemented to facilitate banking operations in Jordanian Islamic banks.           | 3.20 | 0.861     | 5    | Medium |
| 3                                      | Mobile banking systems are adopted.   | 3.35 | 0.839     | 4    | Medium |
| 4                                      | Jordanian Islamic banks have activated digital payment systems that ensure the banks' digital transformation.       | 3.58 | 0.731     | 2    | high   |
| 5                                      | Jordanian Islamic banks follow a declared digital transformation strategy.  | 3.76 | 0.874     | 1    | high   |
| 6                                      | Jordanian Islamic banks rely on digitalization for operational tasks and customer data analytics.                   | 3.42 | 0.785     | 3    | high   |
| <b>The overall average of the axis</b> |   | 3.46 | 0.813     | high |        |

Table (7) above illustrates the sample's level of agreement regarding the reality of digital transformation in Jordanian Islamic banks. The average agreement was (3.46) with a standard deviation of (0.813), indicating a high degree of agreement. The first indicator was the adoption of a declared digital transformation strategy by Jordanian Islamic banks, with an average of (3.76).

The second indicator was the activation of digital payment systems by Jordanian Islamic banks to ensure the bank's digital transformation, with an average of (3.58). The third indicator was the reliance

of Jordanian Islamic banks on digitization in performing tasks and analyzing customer data. Equally ranked was the availability of the necessary digital infrastructure to complete the digital transformation in Jordanian Islamic banks, with an average of (3.42). The fourth indicator was the adoption of mobile banking systems, with an average of (3.35). Finally, the application of professional digital systems to complete banking tasks in Jordanian Islamic banks had an average of (3.20).

**Second: Analysis of the level of operational efficiency in Jordanian Islamic banks**

*Table No. (8): Analysis Of The Level Of Operational Efficiency In Jordanian Islamic Banks.*

| No                                     | Items   | Mean | Standard Deviation | Ranking | Rating |
|--|---|------|--------------------|---------|--------|
| 1                                      | Jordanian Islamic banks are known for their speed in processing banking transactions. | 3.26 | 0.803              | 5       | Medium |
| 2                                      | Jordanian Islamic banks monitor and guarantee the quality of their services.          | 3.55 | 0.839              | 3       | high   |
| 3                                      | Jordanian Islamic banks prioritize customer satisfaction.                             | 3.50 | 0.692              | 4       | high   |
| 4                                      | Jordanian Islamic banks pursue cost reduction policies through digitalization.        | 3.62 | 0.711              | 2       | high   |
| 5                                      | Jordanian Islamic banks are committed to innovation in their operations.              | 3.65 | 0.839              | 1       | high   |
| <b>The overall average of the axis</b> |   | 3.52 | 0.777              | high    |        |

Table (8) above illustrates the sample's level of agreement regarding the operational efficiency of Jordanian Islamic banks. The average was (3.52) with a standard deviation of (0.777), indicating a high degree of agreement. The first point of agreement was the Jordanian Islamic banks' focus on innovation in performance, with an average of (3.65). The second point was their pursuit of cost reduction through digitalization, with an average of (3.62). The third

point was their monitoring and ensuring of service quality, with an average of (3.55).

The fourth point was the Jordanian Islamic banks' focus on customer satisfaction, with an average of (3.50). The fifth point was their speed in completing banking transactions, with an average of (3.26).

**Third: The level of financial sustainability in Jordanian Islamic banks**

*Table No. (9): Level Of Financial Sustainability In Jordanian Islamic Banks.*

| No | Items   | Mean | Standard Deviation | Ranking | Rating |
|----|---|------|--------------------|---------|--------|
| 1  | The financial equilibrium ratio in Jordanian Islamic banks is rising.                         | 3.35 | 0.660              | 5       | Medium |
| 2  | Jordanian Islamic banks have diversified sources of income.                                   | 3.62 | 0.711              | 2       | high   |
| 3  | Jordanian Islamic banks follow strategic planning to achieve digital transformation policies. | 3.66 | 0.812              | 1       | high   |
| 4  | Jordanian Islamic banks prioritize effective data analytics and                               | 3.40 | 0.714              | 4       | Medium |

| risk management.                |  |      |       |      |      |
|---------------------------------|--|------|-------|------|------|
| 5                               | Jordanian Islamic banks emphasize flexibility through digital transformation policies for their operations | 3.55 | 0.720 | 3    | high |
| The overall average of the axis |  | 3.52 | 0.723 | high |      |

Table (9) above shows the level of financial sustainability in Jordanian Islamic banks, which reached an average of (3.52) with a standard deviation of (0.723), which expresses a high degree. In first place was the Jordanian Islamic banks' adherence to strategic planning to achieve digital transformation policies with an average of (3.66). In second place was the diversification of income sources in Jordanian Islamic banks with an average of (3.62). In third place was the interest of Jordanian Islamic banks in the element of flexibility through digital transformation policies for operations with an average of (3.55). In fourth place was the interest of Jordanian Islamic banks in effective data analytics management in risk management with an average of (3.40). In fifth and last place was the high ratio of

financial balance in Jordanian Islamic banks with an average of (3.35).

**Fourth: Analyzing the relationship between digital transformation and operational efficiency in Jordanian Islamic banks, and determining the nature, direction, and strength of this relationship.**

To analyze this relationship, a Pearson correlation coefficient test was conducted between digital transformation and operational efficiency in Jordanian Islamic banks. The correlation coefficient was (0.939) at a significance level of (0.000), which expresses a statistically significant positive correlation.

**To understand the effect, a multiple regression test was conducted as follows:**

*Table (10): Analysis of Variance for the Multiple Linear Regression Model.*

| Source     | Degrees of Freedom | Sum of squares | mean of squares    | Calculated value of F | sig   |
|------------|--------------------|----------------|--------------------|-----------------------|-------|
| Regression | 1                  | 38.319         | 38.319             | 719.246               | 0.000 |
| Error      | 96                 | 5.115          | 0.053              |                       |       |
| Total      | 97                 | 43.434         | Average of squares |                       |       |

It is clear from the variance table that the significance value of 0.000 is less than 0.05, therefore we accept the alternative hypothesis and reject the

null hypothesis that the regression model is significant.

*Table (11): Results of the Significance Test for Multiple Linear Regression Coefficients.*

| item   | t-value | Sig. |
|--|---------|------|
| The impact of digital transformation on operational efficiency | 3.225   | 0.02 |

The results of the previous regression model showed that digital transformation has an impact on the operational efficiency of Islamic banks in Jordan. **Fifth: Analyzing the relationship between digital transformation and financial sustainability in Jordanian Islamic banks, and determining the nature, direction, and strength of this relationship.**

To analyze this relationship, Pearson's correlation coefficient was tested between operational efficiency and financial sustainability in Jordanian Islamic

banks. The correlation coefficient was (0.923) at a significance level of (0.000), indicating a statistically significant positive correlation.

**To understand the impact, a multiple regression test was conducted as follows:**

**Sixth: Analyzing the relationship between operational efficiency and financial sustainability in Jordanian Islamic banks, and understanding how each affects the other.**

*Table (12): Analysis of Variance for the Multiple Linear Regression Model.*

| Source     | Degrees of Freedom | Sum of squares | mean of squares | Calculated value of F | sig   |
|------------|--------------------|----------------|-----------------|-----------------------|-------|
| Regression | 1                  | 34.151         | 34.151          | 630.158               | 0.000 |
| Error      | 96                 | 5.203          | 0.054           |                       |       |
| Total      | 97                 | 39.354         |                 |                       |       |

The variance table shows that the significance

value of 0.000 is less than 0.05. Therefore, we accept

the alternative hypothesis and reject the null hypothesis, indicating that the regression model is significant.

**Table (13): Results of the Significance Test for Multiple Linear Regression Coefficients.**

| items   | t-value | Sig. |
|---|---------|------|
| Impact of operational efficiency and financial sustainability | 3.151   | 0.02 |

The results of the previous regression model showed that operational efficiency has an impact on achieving financial sustainability within the context of the digital transformation of Islamic banks in Jordan.

**Seventh: Challenges facing digital transformation in Jordanian Islamic banks from the perspective of employees, ranked according to their importance and impact.**

**Table (14): Challenges Facing Digital Transformation In Jordanian Islamic Banks From The Employees' Perspective, Ranked By Importance And Impact.**

| No                                     | Items  | Mean  | Standard Deviation | Ranking | Rating |
|--|--|-------|--------------------|---------|--------|
| 1                                      | Activating digital technology in Islamic banks requires a high level of digital literacy.  | 0.714 | 0.714              | 1       | high   |
| 2                                      | A challenge to digital banking transformation relates to the compatibility of available digital technologies with Islamic values.    | 0.698 | 0.698              | 3       | high   |
| 3                                      | A challenge to digital banking transformation relates to resistance to change among bank employees.                                  | 0.721 | 0.721              | 4       | high   |
| 4                                      | A challenge to digital banking transformation relates to the level of security and privacy achieved, which threatens customer trust. | 0.805 | 0.805              | 5       | متوسطة |
| 5                                      | A challenge related to regulatory compliance in the digital transformation process of Islamic banks.                                 | 0.759 | 0.759              | 2       | high   |
| <b>The overall average of the axis</b> |  | 3.59  | 0.739              | high    |        |

Table (14) illustrates the challenges facing digital transformation in Jordanian Islamic banks from the employees' perspective, ranked by importance and impact. The overall average for this axis was (3.59) with a standard deviation of (0.739), reflecting a high degree of agreement. The first challenge was the necessity of activating digital technology in Islamic banks and the presence of a distinguished level of digital literacy, with an average of (3.84). The second challenge was the existence of a problem related to regulatory compliance in the digital transformation

process of Islamic banks, with an average of (3.66). The third challenge was the compatibility of available digital technologies with Islamic values, with an average of (3.61). The fourth challenge was resistance to change among Islamic bank employees, with an average of (3.53). The fifth challenge was the level of security and privacy achieved, which threatens customer trust, with an average of (3.31).

**Eighth: Opportunities to Enhance Digital Transformation in Jordanian Islamic Banks, Identifying Priorities and Promising Areas**

**Table No. (15): Opportunities To Enhance Digital Transformation In Jordanian Islamic Banks, Identifying Priorities And Promising Areas.**

| No | Items  | Mean | Standard Deviation | Ranking | Rating |
|----|--|------|--------------------|---------|--------|
| 1  | To enhance digital transformation in Jordanian Islamic banks, technological infrastructure must be upgraded.             | 3.68 | 0.562              | 4       | high   |
| 2  | To enhance digital transformation in Jordanian Islamic banks, human resources must be trained and qualified.             | 3.42 | 0.785              | 5       | high   |
| 3  | To support digital transformation in Jordanian Islamic banks, cybersecurity and compliance must be strengthened.         | 3.82 | 0.804              | 2       | high   |
| 4  | To support digital transformation in Jordanian Islamic banks, Sharia-compliant products must be developed.               | 4.11 | 0.798              | 1       | high   |
| 5  | To support digital transformation in Jordanian Islamic banks, digital services and mobile applications must be advanced. | 3.77 | 0.894              | 3       | high   |

|                                 |      |       |      |
|---------------------------------|------|-------|------|
| The overall average of the axis | 3.76 | 0.787 | high |
|---------------------------------|------|-------|------|

The preceding Table No. (15) illustrates the level of agreement among the sample regarding the opportunities available to enhance digital transformation in Jordanian Islamic banks, identifying priorities and promising areas. The level reached (3.76) with a standard deviation of (0.787), indicating a high degree. The first priority was that to support digital transformation in Jordanian Islamic banks, it is necessary to develop Sharia-compliant products, with an average of (4.11). The second priority was that cybersecurity and compliance should be strengthened, with an average of (3.82). The third priority was developing digital services and mobile applications, with an average of (3.77). The fourth priority was upgrading the technological infrastructure, with an average of (3.68). The fifth priority was that human resources should be trained and qualified, with an average of (3.42).

#### Discussion of Results:

This study examined the role of digital transformation in enhancing efficiency and financial sustainability in Islamic banks in Jordan from employees' perspectives. The findings confirm a strong positive relationship between digital transformation and operational efficiency, consistent with previous studies (Mansori et al., 2023; Nofinawati et al., 2025; Al-Haija et al., 2025). Digital transformation contributes to cost reduction, faster transaction processing, improved customer experience, and increased financial inclusion, supported by technologies such as AI and big data analytics (Masrina et al., 2024; Setiawan et al., 2025).

Results also show high levels of operational efficiency and financial sustainability in Jordanian Islamic banks, driven by strategic planning, income diversification, and effective risk management (Riza et al., 2024). Statistical analysis revealed strong positive correlations between digital transformation and operational efficiency ( $r = 0.939$ ) and between efficiency and financial sustainability ( $r = 0.923$ ), confirming their significant interdependence.

Despite these benefits, challenges remain, including cybersecurity risks, regulatory compliance, infrastructure limitations, and the need for digital skills and Sharia-compliant solutions (Setiawan et al., 2025). Key opportunities include developing Sharia-

compliant digital products, enhancing cybersecurity, improving digital services, upgrading infrastructure, and investing in employee training.

#### Conclusion:

The literature indicates that digital transformation significantly contributes to improving operational efficiency, reducing costs, enhancing customer satisfaction, and achieving financial inclusion. It also plays a role in promoting financial sustainability by improving financial balance, diversifying income sources, and strengthening risk management capabilities.

The importance of this study lies in its attempt to fill a significant research gap concerning understanding the reality of digital transformation in Islamic banks in Jordan from the perspective of their employees. It identifies the challenges and opportunities available to support a process that enhances this transformation in a way that serves the goals of efficiency and sustainability.

#### Recommendations:

1. To support digital transformation in Islamic banks in Jordan, several recommendations can be made.
2. Implementing robust digital transformation strategies is essential to enhance operational efficiency and customer experience, ultimately leading to greater sustainability in the financial sector.
3. Adopting Islamic finance technology (FinTech) can automate processes and improve compliance with Sharia principles, thereby reducing risks and enhancing service delivery.
4. Investing in employee training and development is crucial to equipping employees with the necessary skills to navigate digital tools and ensure adherence to Sharia compliance.
4. Creating Sharia-compliant digital banking platforms will enhance customer trust and maintain a competitive edge.
5. Integrating digital payment systems will streamline transactions and improve customer satisfaction, aligning with the needs of modern banking customers.

**Author Contributions:** Conceptualization, Wasef Naif Nahar Daqamseh; methodology, Wasef Naif Nahar Daqamseh; software, not applicable; validation, Wasef Naif Nahar Daqamseh; formal analysis, Wasef Naif Nahar Daqamseh; investigation, Wasef Naif Nahar Daqamseh; resources, Wasef Naif Nahar Daqamseh; data curation, Wasef Naif Nahar Daqamseh; writing – original draft preparation, Wasef Naif Nahar Daqamseh;

writing—review and editing, Wasef Naif Nahar Daqamseh; visualization, Wasef Naif Nahar Daqamseh; supervision, Wasef Naif Nahar Daqamseh; project administration, Wasef Naif Nahar Daqamseh; funding acquisition, not applicable. The author has read and agreed to the published version of the manuscript. Contributions are aligned with the CRediT taxonomy, ensuring transparency in authorship responsibilities and academic integrity.

**Acknowledgements:** The author would like to acknowledge the academic environment at Ajloun National University, Jordan, for its institutional support in facilitating scholarly work. Appreciation is also extended to colleagues and reviewers whose feedback and discussions contributed to refining the intellectual quality of this study. No external funding was received for this research. The author further expresses gratitude for the continuous academic and technical support provided throughout the research process.

## REFERENCES

- Islou, A., et al. (2024). Modern Digitalization and its Expected Impact on the Efficiency of Islamic Financial Transactions in Libya. *Journal of Economic, Administrative and Legal Sciences*. <https://doi.org/10.26389/ajsrp.e290823>
- Al-Madani, Mahmoud Ali and Al-Dhabah, Tariq Saleh (2024). Digital Transformation as an Approach to Achieving Sustainable Development in Libya. *Journal of Social Studies*, Vol. 30, No. 5. <https://doi.org/10.20428/jss.v30i5.2533>
- Al-Aib, M. (2025). A Comparative Analysis of the Adoption of Financial Technology in Banking Services: An Applied Study on Jordanian, Arab and International Banks (2020-2024). <https://doi.org/10.62341/hmwa0724>
- Tawati, A. (2021). Evaluating the Experience of Transitioning to Islamic Banking in Commercial Banks in Libya. <https://doi.org/10.64516/2wd30m53>
- Mansori, H. A., & Maatuk, A. M. (2023, May). Digital Transformation of Islamic Banks using Business Process Management. In 2023 IEEE 3rd International Maghreb Meeting of the Conference on Sciences and Techniques of Automatic Control and Computer Engineering (MI-STA) (pp. 397-401). IEEE. <https://doi.org/10.1109/mi-sta57575.2023.10169836>
- Mansori, S., et al. (2023). Digital Transformation of Islamic Banks using Business Process Management. *Proceedings of the 2023 International Conference on Management and Information Systems*. <https://doi.org/10.1109/MI-STA57575.2023.10169836>
- Nofinawati, S. E. I., & Nasution, A. M. (2025). Digital Financial Transformation and Efficiency in Islamic Banking Systems. *Journal of Islamic Financial Technology*, 4(2).
- Saeed, K. A., & Bampton, R. (2013). The impact of information and communication technology on the performance of Libyan Banks. *Journal of WEI Business and Economics-December*, 2(3), 21-26.
- Lemhishi, A., et al. (2024). Assessing Libya's first sukūk: Shari'ah compliance and financial viability. *ISRA International Journal of Islamic Finance*, 16(1). <https://doi.org/10.55188/ijif.v16i1.634>
- Trimulyana, T. (2024). Transformasi Digital dalam Perbankan Syariah dan Dampaknya pada Masyarakat Muslim. <https://doi.org/10.62070/persya.v2i1.52>
- Khemgani, Badr Azzamane (2024) A Proposed Strategy to Accelerate the Pace of Digital Transformation in Islamic Banks: An Applied Approach to the Experience of Four Leading Banks. *Al Qasimia University Journal of Islamic Economics*, 4(1). <https://doi.org/10.52747/aqujie.4.1.310>
- Rahman, M., et al. (2023). Fintech innovations and Islamic banking performance: Post-pandemic challenges and opportunities. *Banks and Bank Systems*, 18(4). [https://doi.org/10.21511/bbs.18\(4\).2023.23](https://doi.org/10.21511/bbs.18(4).2023.23)
- Al-Haija, A., et al. (2025). The impact of digital banking transformation (DBT) platforms on the profitability and efficiency of Islamic banking. *Journal of Islamic Marketing*. <https://doi.org/10.1108/jima-06-2024-0241>
- Cintya, R., et al. (2024). Pengaruh Teknologi Digital Dalam Perkembangan Layanan Perbankan Syariah. *Jurnal Ekonomi, Bisnis dan Manajemen*, 2(3). <https://doi.org/10.59024/jise.v2i3.788>
- Hapiyah, H., et al. (2024). Exploring the Digital Frontier: Challenges and Opportunities in Sharia Banking Development. *Cemerlang*, 4(3). <https://doi.org/10.55606/cemerlang.v4i3.2974>
- Muradova, S. (2024). The impact of digital financial technologies on islamic insurance and other financial institutions: opportunities and challenges. <https://doi.org/10.61796/ijaifd.v1i2.90>
- Othman, A., et al. (2024). Digital Frontiers in Islamic Finance Advancing SDGs Through Maqasid and Maslahah. *Advances in Finance, Accounting, and Economics Book Series*. <https://doi.org/10.4018/979-8-3693->

5653-1.ch001

- Jibo, M. (2025). Green Fintech Innovations in Islamic Banking. <https://doi.org/10.4324/9781003518617-4>
- Fahad, S., et al. (2024). Structural and Digital Transformation of the Financial Industry: A Futuristic Approach for Sustainable and Green Digitalization. *Muslim Business and Economic Review*, 3(2). <https://doi.org/10.56529/mber.v3i2.305>
- Meero, A. (2025). Islamic vs. Conventional Banking in the Age of FinTech and AI: Evolving Business Models, Efficiency, and Stability (2020–2024). <https://doi.org/10.20944/preprints202507.0233.v1>
- Empirical assessment on digital transformation in Islamic banking. (2022). <https://doi.org/10.4324/9781003262169-9>
- Saadatirrohmi, M., et al. (2024). Transformation and Innovation in Islamic Economics: Responding to Challenges in the Digital and Globalization Era. *Journal of Islamic Economy*. <https://doi.org/10.62872/m12p3y52>
- Atif, M., Hassan, M. K., Rabbani, M. R., & Khan, S. (2021). Islamic FinTech: The digital transformation bringing sustainability to Islamic finance. In *COVID-19 and Islamic social finance* (pp. 91-103). Routledge .
- Nisa, C., Irsyad, M., & Hasanah, S. M. (2025). Opportunities And Challenges Of Islamic Banking In Indonesia In The Digital Era. *Iqtishaduna: Jurnal Ekonomi dan Keuangan Islam*, 16(2), 101-120.
- Masrina, M., et al. (2024). Digital Revolution in Islamic Banking: Towards the Islamic Finance Era 5.0. *Malia*, 8(2). <https://doi.org/10.21043/malia.v8i2.29630>
- Nuriyah, N., et al. (2024). Transformasi Ekonomi Islam Melalui Solusi Fintech Digital: Jalan Menuju Pertumbuhan Berkelanjutan. *Anggaran*, 3(1). <https://doi.org/10.61132/anggaran.v3i1.1139>
- Riza, A., et al. (2024). Strengthening a sustainable Islamic financial industry through digital banking. *Journal of Islamic Marketing*. <https://doi.org/10.1108/jima-01-2023-0025>
- Boubaker, S., et al. (2025). Exploring FinTech market landscape in the MENA region. [https://doi.org/10.1007/978-981-97-1998-3\\_14-1](https://doi.org/10.1007/978-981-97-1998-3_14-1)
- Aysan, A. F., Belatik, A., Unal, I. M., & Ettaai, R. (2022). Fintech strategies of Islamic banks: A global empirical analysis. *FinTech*, 1(2), 206-215.
- Mohmed, A. (2025). Analyzing Barriers to the Adoption of Websites and Mobile Applications in Libya: A Mixed-Methods Study on E-Services, Trust, and Digital Transformation. *Arraid Journal of Science and Technology (AJST)*, 2(2), 74-83.
- Masrina, M., Patmawati, S., & Fauziah, N. (2024). Digital Revolution in Islamic Banking: Towards the Islamic Finance Era 5.0. *Malia*, 8(2), 159. <https://doi.org/10.21043/malia.v8i2.29630>
- Setiawan, A., Diadani, P. S., Masyita, R., Putri, S. I. A., & Nurbaiti, N. (2025). Strategi Digitalisasi di Bank Syariah untuk Meningkatkan Daya Saing. *Deleted Journal*, 2(1), 260–270. <https://doi.org/10.62335/6v1maz65>
- Setiawan, A., Diadani, P. S., Masyita, R., Putri, S. I. A., & Nurbaiti, N. (2025). Strategi Digitalisasi di Bank Syariah untuk Meningkatkan Daya Saing. *Deleted Journal*, 2(1), 260–270. <https://doi.org/10.62335/6v1maz65>
- Shehadeh, M., Bani Atta, A. A., Al Barrak, T., Lutfi, A., & Alrawad, M. (n.d.). Digital transformation: An empirical analysis of operational efficiency, customer experience, and competitive advantage in Jordanian Islamic banks. *Uncertain Supply Chain Management*. <https://doi.org/10.5267/j.uscm.2024.1.015>