

**Islamic Fintech technologies in the era of digital transformation: a
future vision for Algeria- A Field Study at BADR Bank and Al
BARAKA Bank in Sidi bel abbes Province-**

تقنيات التكنولوجيا المالية الإسلامية في عصر التحول الرقمي: رؤية مستقبلية للجزائر

— دراسة ميدانية على مستوى بنك البدر وبنك البركة بولاية سيدي بلعباس —

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Abstract:

The adoption of modern technologies in the field of Islamic financial technology is a major revolution witnessed by the financial sector in the current era, as developing countries, including Algeria, are striving to adopt digital transformation in all sectors, most notably the financial sector, which is witnessing a qualitative leap and major changes in the field of financial and banking services. This research aims to highlight the role of these emerging technologies by integrating them with the principles of Islamic law in order to provide advanced financial services in line with Islamic values and draw a future vision for Algeria in this field, and to reach the objectives of the study, a questionnaire tool was used and interviews with specialists in the field by taking a random sample and the results concluded that the use of modern technology in Islamic finance contributes to ensuring transparency and improving efficiency, Attracting a larger segment of customers who prefer digital and smart banking services, the risks and challenges involved in digital technology must be considered and overcome.

Keywords: Smart Technologies, Islamic Fintech, Digital Future Trends

JEL Classification Codes: 033 ,G21 ,Z12 ,L81

ملخص:

يعتبر تبني التقنيات الحديثة في مجال التكنولوجيا المالية الإسلامية ثورة كبيرة يشهدها القطاع المالي في العصر الحالي، تسعى الدول النامية جاهدة ومن بينها الجزائر إلى تبني التحول الرقمي في كامل القطاعات وأبرزها القطاع المالي الذي يشهد نقلة نوعية وتغيرات كبيرة في مجال الخدمات المالية والمصرفية. يهدف هذا البحث إلى إبراز دور هذه التقنيات الناشئة من خلال دمجها مع مبادئ الشريعة الإسلامية بغية تقديم خدمات مالية متطورة تتماشى مع القيم الإسلامية واستخلاص رؤية مستقبلية للجزائر في هذا المجال، وللوصول إلى أهداف الدراسة تم استخدام أداة استبيان وإجراء مقابلات مع مختصين في المجال من خلال أخذ عينة عشوائية وخلصت النتائج إلى أن استخدام التكنولوجيا الحديثة في المالية الإسلامية يساهم في ضمان الشفافية وتحسين الكفاءة، وجذب شريحة أكبر من العملاء الذين يفضلون الخدمات المصرفية الرقمية والذكية، إلا أنه يجب الأخذ بعين الاعتبار المخاطر والتحديات التي تنطوي عليها التكنولوجيا الرقمية والتغلب عليها.

الكلمات المفتاحية: التقنيات الذكية، التكنولوجيا المالية الإسلامية، التحول الرقمي، الاتجاهات المستقبلية

تصنيفات JEL: 033، G21، Z12، L81

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1) INTRODUCTION

Islamic financial technology is one of the emerging areas that are witnessing remarkable development in light of the digital transformation that the world is witnessing today. This technology seeks to provide financial solutions that are in line with Islamic principles, allowing Islamic financial institutions to expand their services and increase their efficiency. In an era of rapid change and continuous technological developments, it is necessary to look ahead to understand how these technologies affect the Islamic financial system.

This study examines the importance of Islamic financial technology and how it can contribute to achieving financial inclusion and promoting innovation in the financial sector. It will also review the challenges and opportunities facing this sector in light of the digital transformation, with recommendations to promote the use of these technologies in line with Islamic values and principles.

➤ **The problem**

The main problem revolves around how Islamic fintech will affect the financial system in the era of digital transformation, and what challenges and opportunities can arise as a result of this transformation.

What is the impact of the adoption of digital technologies in the field of Islamic financial technology on the provision of Islamic financial services in light of the challenges and changes taking place in the Algerian environment?

➤ **Sub-questions**

What are the most prominent emerging technologies in the field of Islamic financial technology?

What are the legal and regulatory challenges facing Islamic fintech?

How can Islamic fintech evolve in the future?

What is the role of innovation in enhancing the efficiency and transparency of Islamic financial transactions?

➤ **Importance of Research:**

The importance of this study stems from the importance of the topic itself, as digital transformation and smart systems have become the language of the times and the main element that constitutes a driving force for the economies of countries, by showing the role of the latter in the field of Islamic finance and the need to understand the impact of these technologies on financial institutions and individuals in general.

➤ **Research Objectives:**

- ◆ Understand how fintech emerging technologies affect financial institutions and individuals
- ◆ Study of some statistics in the world on the use of smart technologies in the provision of Islamic financial services
- ◆ Provide practical solutions and mechanisms to promote innovation in this field
- ◆ Foreseeing the future trends of Algeria in this field by analyzing the various challenges that hinder the adoption of Islamic financial technology and providing recommendations to overcome them

➤ **Methodology:**

In this research, the descriptive approach was used in the theoretical side to describe the basic concepts of Islamic financial technology and digital transformation, and the analytical approach in the applied side through the field study in Algeria, through a questionnaire and interviews with professionals in the field.

➤ **Hypotheses:**

1. **Hypothesis one:** Innovation in Islamic fintech leads to improved efficiency and transparency in financial transactions, enhancing trust between consumers and financial institutions.
2. **Second,** there is a positive market response to emerging technologies in Islamic finance, prompting traditional financial institutions to adopt new business models.

➤ **Axes of the study:**

- ✱ **First Axis:** General Concepts on Islamic Financial Technology and Digital Transformation
- ✱ **Second Axis:** Emerging Technologies in Islamic Financial Technology
- ✱ **Third Axis:** Opportunities and Challenges of Islamic Fintech Adoption
- ✱ **Fourth Axis:** A field study on the future of Islamic financial technology adoption in Algeria at the level of Al Baraka Bank and Badr Bank in the wilaya of Sidi Bel Abbes

1. General Concepts on Islamic Financial Technology and Digital Transformation

1.1. Islamic Financial Technology

1.1.1. Definition of fintech

The term "fintech" has been used since the nineties. The term in question has gained significant momentum in the contemporary era due to the great advances in fintech around the world, the fintech ecosystem includes developments in core services, commercial infrastructure and components. and transparency. (Ibrahim Radwan & all, 2023)

The term fintech refers to an industry made up of companies that harness technology to improve retail and corporate Banking services, in cooperation or competition with financial service providers. (Maha, April 2022)

Through this we conclude that fintech are those products and services that rely on technology to improve the quality of traditional financial services, and are faster, cheaper, easier and accessible to more individuals.

1.1.2. The concept of Islamic financial technology and its characteristics:

It is defined as all Shari'a-compliant fintech applications and products and is adopted in Islamic financial and banking institutions. It is a financial technology that meets the needs of Islamic financial institutions and is designed to preserve the principles established by Islamic law. (Nacira & Beriche, 2022)

Fintech has the potential to dramatically transform the Islamic finance industry through cost-effectiveness, operational efficiency and financial inclusion. The digital financial innovations regulated by this regulation include social crowdfunding, Environmental, Islamic Digital Finance, e-Zakat, Automated Advice and Credit Registration. (Mahdiah & all, 2020)

1.1.3. The field of use of Islamic financial technology:

To ensure Sharia compliance, fintech companies have to navigate a complex set of rules. Fees interest, or usury Prohibited. As well as investments in the "stock of sin" for companies that benefit from alcohol, weapons, tobacco and gambling. The rules also prohibit profit from debt and require investments to be backed by real assets. (Lipka, 2020). Provides Shari'a Standard No. 38 "Online Financial Transactions" issued by the Auditing and Accounting Organization for Islamic Financial Institutions "AAOIFI" on: (Hassiba & all, 2022)

1.1.4. Types of Islamic Fintech Services: (Nacira & Beriche, 2022)

The main types of services offered in Islamic financial technology are:

- **Peer-to-peer lending (P2P):** These are platforms that combine surplus and deficit holders in a decentralized way that allows easy financing and investment at very affordable costs
- **Crowdfunding:** They are platforms that collect funds from the public to finance a specific project and are based on many types, based on shares, donation, reward, loan
- **Money transfer and mobile payments:** It is the most active sector and these services are provided by many financial institutions and even start-ups

1.2. Digital Transformation

1.2.1. Definition of digital transformation and its importance

Digital transformation is defined as the use of new digital technologies, such as mobile, artificial intelligence, cloud computing, blockchain, and the Internet of Things, to enable key business improvements, to improve customer experience, streamline operations or create new business models. It further refers to the digitization of business and economy, so that information, communication and assets become digitally interconnected. Digital transformation in Islamic finance is known Islamic financial institutions are adopting a new strategy that employs modern digital technologies. (Maha, April 2022)

2. Emerging Technologies in the Field of Islamic Financial Technology:

2.1. Digital Platforms: (Belahrach & Kifani, 2022)

Digital platforms can be defined as: a basic building block that provides a basic function of a technological system and serves as a basis through which complementary products, technologies or services can be developed, and therefore it is a technological medium open to all customers linking **Some innovative digital platforms:**

2.1.1. "I-Dinar, the first Islamic electronic currency exchange platform Digital:

On the sidelines of the Fifth International Conference on Islamic Finance, the first Islamic electronic platform for the exchange of gold-backed digital currency was launched in Doha today, under the name « I-DINAR». It is an electronic token based on the exchange of digital currency, where its initial value of one dinar is supported for one gram of gold, meaning that it is not only a digital currency. (Morad, 2019)

- ♦ **Wahed Invest** is a U.S.-based Islamic startup that provides a digital investment platform for Muslim individuals. The platform offers halal investment portfolios, carefully designed to comply with Islamic principles. (Faster Capital, 2024)
- ♦ **Blossom Finance** is an Indonesian startup focused on providing microfinance solutions to underserved Muslim communities. You enable individuals to invest in Islamic projects and make a profit while supporting local businesses. (Faster Capital, 2024)
- ♦ **Salam Web:** is a Malaysian startup that has developed a web browser and mobile app with built-in features to promote a safe and ethical online experience for Muslims. (Faster Capital, 2024)

2.2. Digital Currencies and Cryptocurrencies

2.2.1. Digital Currencies

It is money circulating via the Internet that can take the form of debit cards, characterized by all the characteristics of traditional money, only differing in that it does not have geographical or political boundaries so that financial transactions can be made and transfers can be made from any region to any region Other. **(Hadjriwa, 2023/ 2024, pp. 14,15)**

Digital currencies are known as currencies traded over the Internet, and they have all the characteristics of traditional money, the closest example of which is credit and debit cards. And maybe Use them to pay for goods and services, such as internet communications, mobile phones, stores that sell goods online. **(Layan, 2019, p. 15)**

2.2.2. Cryptocurrencies: (Hiwa & BehLin, 2023)

A type of digital currency that enables the exchange of values via the Internet in a reliable and intermediated manner, and this is through the use of digital tokens to represent a group of tangible assets, and these symbols are usually accessed through the so-called "wallet", which provides a final interface for interaction with the cryptocurrency, it may be open source, that is, it is a local customer or a service only via the Internet, and among the most famous cryptocurrencies we find Bitcoin, Ethereum, Bitcoin, Litecoin where It relies on encryption and is considered one of the assets insured against penetration.

2.2.2.1. Cryptocurrency Risk: (Hiwa & BehLin, 2023)

- The difficulty of protecting consumers and their privacy, and protecting financial stability as a result of electronic financial flows
- The difficulty of managing and transferring monetary policy
- Low demand for Currency
- Difficulty in policy development due to lack of data on foreign capital inflows, for example

2.2.3. The difference between cryptocurrencies and cryptocurrencies:

The most important differences are: **(Hiwa & BehLin, 2023)**

- ♦ **Disclosure of dealers' identity:** Although cryptocurrencies do not require any documents for transactions conducted through them and no personal information is provided, they are registered and tracked.
- ♦ **Transparency:** Cryptocurrencies cannot be tracked by third parties while cryptocurrency-specific flows can be viewed.

- ♦ **Information manipulation:** The centrality of digital currencies makes them under the control of regulatory authorities in the event of manipulations, while cryptocurrencies are under the control of their dealers.
- ♦ **Legal aspects:** Cryptocurrencies are characterized by legal regulation, while there is no legislation regulating dealing with cryptocurrencies.

2.2.4. Top Halal and Shari'a-Compliant Cryptocurrencies in 2024:

To classify cryptocurrencies as halal, there are criteria that must comply with the principles of Islamic law: **(Islamic Standard for classifying digital currency as halal, 2024)**

- **Avoid usury (usurious interest):** Cryptocurrencies should not include usurious interest.
- **Avoid gharar (obscure transactions):** Financial transactions should be clear and transparent.
- **Avoid forbidden activities:** Currencies should not be associated with prohibited activities such as gambling.
- **Transparency and legitimacy:** Operations must be traceable and legitimate.

Table 01: Illustrates some halal cryptocurrencies in 2024

Currency	Description
(Bitcoin)	The first decentralized digital currency, used for halal
(Ethereum)	The second largest cryptocurrency, compliant with
(Solana)	A digital currency, network, and blockchain that rivals Ethereum, is considered a halal currency.

Source: (Islamic Standard for classifying digital currency as halal, 2024)

- **Islamic Coin: (Mohamed El Kaf, 2022)**

It aims to offer a Sharia-compliant digital currency, and works to provide digital payment solutions in line with Islamic principles. In the past few days, the digital currency market in the Arab world has witnessed an important milestone in its history, which is the introduction of a coin Islamic Coin the First Islamic digital currency to receive a legal authorization fatwa from Muslim scholars.

Sharia position on digital currencies: (Abd El Adim, 2021)

The concept of currency in Sharia is not limited to gold or silver, but Sharia recognizes any currency that people use to use prices. This means that there is no legitimate objection in principle to the creation of new currencies such as digital

currency or cryptocurrency as long as they meet the Shariah conditions of legal tender and are subject in their circulation and transactions to the same Sharia rules as usual currencies.

A. Blockchain

It is an expanding list of blocks, each block contains transaction data, timestamp and cryptographic hash code from the previous block, the main interesting feature of blockchain is its resistance to data modification and traceable transactions, so blockchain, if used fairly, can be a boon for Mawal Islamic banking and finance to provide traceable transactions and transparency. **(Nacira & Beriche, 2022)**

While the blockchain was known to be verified without human intervention, it is the largest open digital record that allows the transfer of the asset of ownership from one party to another at the same time without the need for an intermediary, with a high degree of manpower for the conversion process in the face of fraud. **(Hiwa & BehLin, 2023)**

B. Artificial Intelligence

"Artificial intelligence contributes to greatly simplifying the performance of banking operations and services provided to customers, which helps in enhancing and developing the banking services provided by banks to their customers dealing with them, as it contributes to speeding up the processes related to the customer's obtaining the required credit for him, instead of waiting days for review, data processing and giving the customer approval of the loan, through artificial intelligence the customer will be able to obtain the required loan within a short period. **(Hadjriwa, 2023/ 2024, p. 15)**

c. Smart Contracts

They are stand-alone programs or code that automatically implement the terms and conditions of the contract without the need for human intervention and smart contracts can include all information about the terms of the contract, the duties and rights of the parties, fees and all the elements that should be present in the contract, so that all procedures are implemented automatically without resorting to the services of intermediaries. **(Hiwa & BehLin, 2023)** Controls Smart Contracts The main ones are: It does not involve usury, does not include obscene gharar, and that the object is permissible in Sharia. **(Hassiba & all, 2022)**

3. Opportunities and Challenges of Islamic Fintech Adoption

When talking about banks and their relationship with the financial technology industry, it can be said at the outset that this industry and its various applications represent opportunities and challenges at the same time for banks.

3.1. Opportunities and prospects for the Islamic banking industry in light of the adoption of financial technology:

Fintech helps to open up new growth opportunities for the Islamic banking industry, through faster execution and better tracking of transactions, the following are the opportunities that fintech gives to the Islamic banking industry, Ease and speed of transactions: This is especially true for payment and money transfer services, so that those in charge of the Islamic finance industry can take advantage of the possibilities offered by financial technology and other innovations to enhance its services and attractiveness, and technology can also reduce costs. (Kerouche & all, 2020)

3.2. Challenges facing modern financial technologies: (Belahrach & Kifani, 2022)

The challenges of modern financial technologies are also represented With Follows:

- ◆ Limited knowledge of some individuals about the services provided by modern financial technologies.
- ◆ Weak business environment and network service in some areas.
- ◆ Lack of new service products offered by financial services provided by modern financial technologies.
- ◆ Lack of innovation in bank transactions.

3.3. Fintech Risks: (Ibrahim Radwan & all, 2023)

In fintech, there are four basic categories of risk as follows:

- **Financial risk** to the possibility of incurring losses due to trading errors and misuse of bank accounts, a large number of customers show their fears of possible financial losses while engaging in online transactions
- **the legal risk** of feeling vulnerable associated with the use of online credit cards,
- **Inherent security risks** that consumers are aware of when using fintech. Cases of fraud and unauthorized access by hackers lead to financial losses for users and violation of their privacy.
- **Operational risk** of financial losses incurred due to deficiencies or malfunctions in commerce platforms.

3.4. Statistics on the future of the use of Islamic financial technology in the world

3.4.1 The future of the Islamic banking industry in light of the developments of financial technology: (Kerouche & all, 2020)

The Islamic banking industry is helping to expand its reach and take advantage of new excluded customer segments, for example new growth horizons can be achieved by providing mobile banking services to customers in remote areas, or providing products such as crowdfunding for affordable housing or small and medium enterprises. Islamic and digital banking are promising, with the potential to revolutionize the Islamic finance industry. By integrating technology and innovation, Islamic fintech can enhance financial inclusion, promote sustainable finance, and provide customers with easy access to a wide range of Shariah-compliant products and services.

*** Dinar Standard Report:**

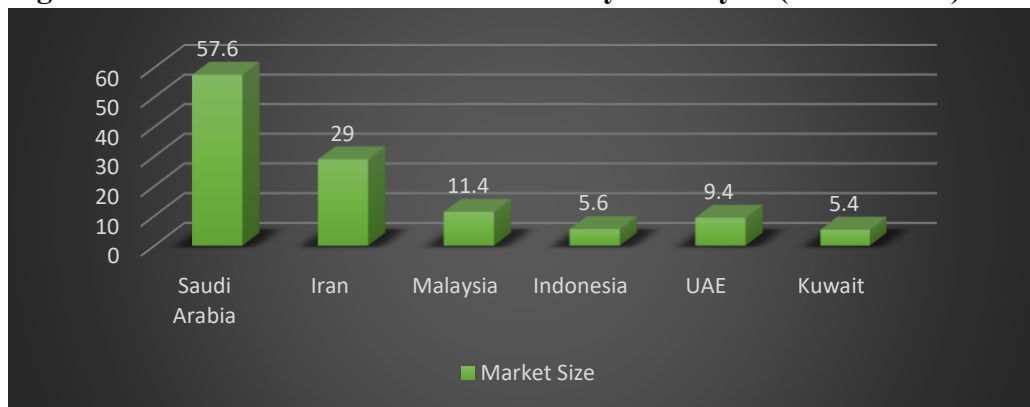
Islamic financial technology is witnessing remarkable growth in light of the global digital transformation. According to a Dinar Standard report, the global market size of Islamic financial technology is about \$138 billion.

This market is spread across six major countries, all of which are members of the Organization of Islamic Cooperation, including:

- **Saudi Arabia:** \$56.5 billion
- **Iran:** \$28 billion
- **Malaysia:** \$11.1 billion
- **UAE:** \$9.3 billion
- **Indonesia:** \$5.5 billions
- **Kuwait:** \$5.1 billion

Together, these countries account for about 85% of the total global Islamic fintech market, highlighting the dominance of Southeast Asia and the East.

Figure n° 01: Islamic Fintech Market Size by country in (Billion USD)



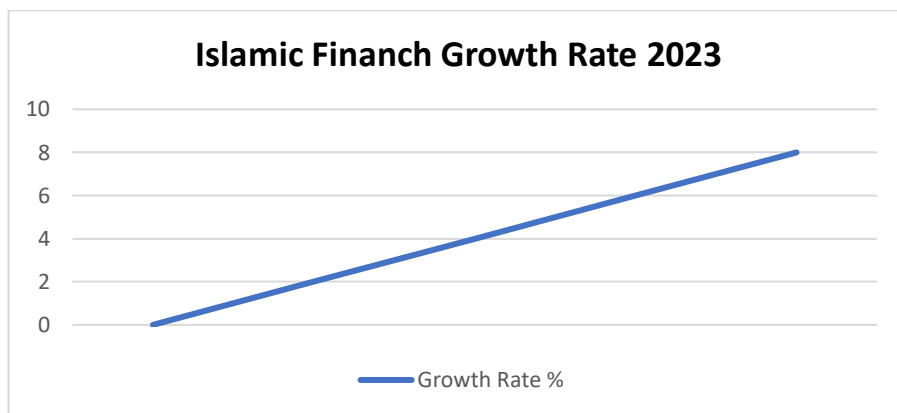
Source: (CNN Business Arabic, 2024)

Interpretation: The chart shows the size of the Islamic fintech market by country with Saudi Arabia leading the market with \$57.5 billion, followed by Iran and Malaysia. This highlights the importance of the Middle East and Southeast Asia region in this area.

✱ **Standard & Poor's report:**

In terms of growth, the S&P report indicated that Islamic finance has seen an increase of 9.4%, with the Islamic economy reaching two trillion dollars, with assets of nearly four trillion dollars.

Figure 02: Islamic Financh Growth Rate 2023



Source: (CNN Business Arabic, 2023)

Interpretation: The chart shows the growth rate of Islamic finance with an annual growth rate of 9.4%, which indicates the rapid development of this sector in recent years.

4. A field study on the future of Islamic financial technology adoption in Algeria at the level of Al Baraka Bank and Badr Bank in the wilaya of Sidi Bel Abbes

4.1. Sample description and study population:

Study population: The study population consists of employees of Al Baraka Bank and Badr Bank in the wilaya of Sidi Bel Abbes, who work in areas related to Islamic financial technology.

Sample: The sample was selected in a randomized guided manner to ensure the diversity of respondents in terms of experience and educational level. The sample size is 50 participants.

Table 02: Distribution of the study sample

Al Badr Bank	Al Baraka Bank	Banks
14	13	Distributed Investments

Source: prepared by the researcher based on the data

Table 03: Distribution of study sample according to academic qualification:

Qualification	Number	Percentage
Bachelor of Accounting and Finance, Management, Economics	20	40%
Master of Accounting and Finance, Management, Economics	25	50%
PhD in Accounting and Finance, Management, Economics	5	10%
Total	53	100%

Source: Prepared by the researcher based on the outputs of SPSS

4.2. Results of the test of the validity of the study instrument:

Table 04: Results of the test of the validity of the study instrument:

Axes	Number of ferries	Cronbach's alpha stability coefficient	Honesty coefficient
The first axis	5	0.85	0.96
The second axis	5	0.83	0.92
Third Theme	5	0.86	0.97

Source: Prepared by the researcher based on the outputs of SPSS

Interpretation: Through the table above, we notice that the value of the stability coefficients ranged between 0.8, which is considered good and very acceptable as it exceeds 0.7, and the same thing for the honesty coefficient, which exceeded 0.09, and this is what expresses the sincerity of the respondents' answers.

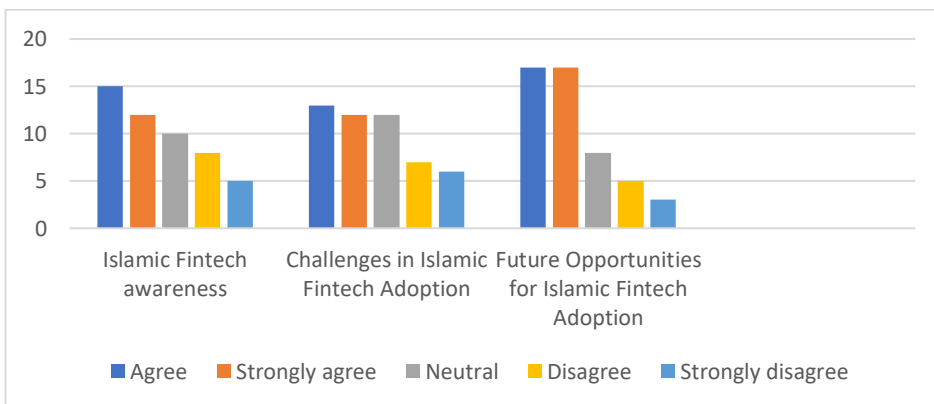
4.3. Distribution of frequencies by answers on axes

Table 05: Distribution of frequencies by answers on axes

Axis	Agree	Strongly agree	Neutral	Disagree	Strongly disagree	Average
Islamic Fintech Awareness	15	12	10	8	5	3.6
Challenges in Islamic Fintech Adoption	13	12	12	7	6	3.5
Future Opportunities for Islamic Fintech Adoption	17	17	8	5	3	4.2

Source: Prepared by the researcher based on the outputs of SPSS

Figure n° 03: Distribution of frequencies by answers on axes



Source: Prepared by the researcher based on the outputs of SPSS

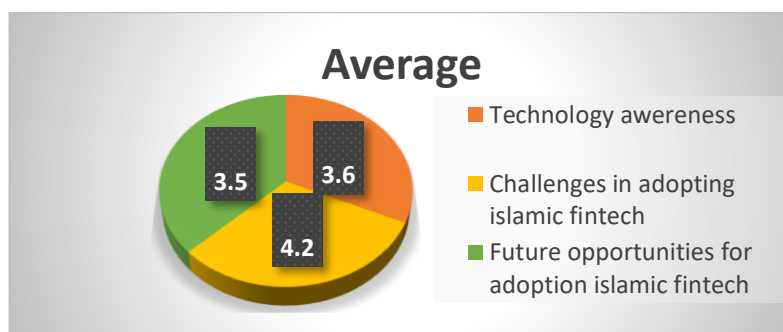
Commentary: Around 54% of respondents supported or strongly supported the importance of FinTech awareness, demonstrating a positive perception of Islamic technology. The iterations also show that challenges exist but can be overcome, with a total of 74% neutral and supporters, the future opportunities stand out in a strong positive light, with 68% supporting or strongly endorsing the importance of technology in improving performance.

Table 06: Distribution of default average results (for each axis):

Axis	Average Answers	Standard deviation
Technology Awareness	4.2	0.5
Challenges	3.5	0.6
Future Opportunities	4.6	0.4

Source: Prepared by the researcher based on the outputs of SPSS

Figure n° 04: Average answers by axes

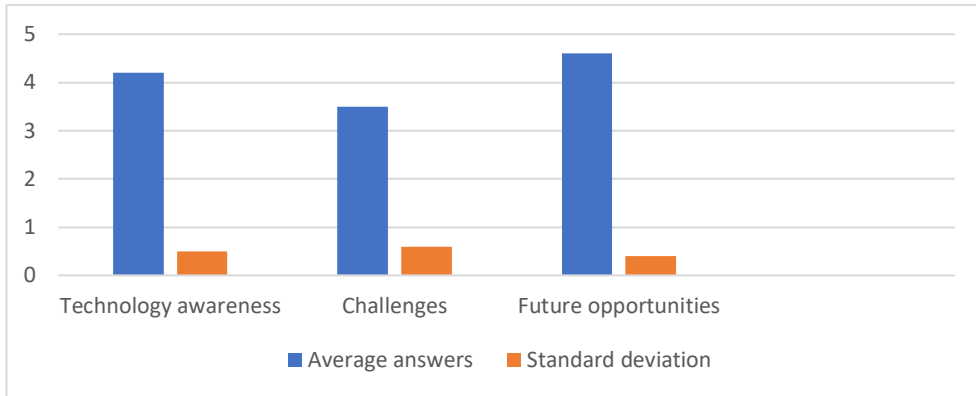


Source: Prepared by the researcher based on the outputs of SPSS

Commentary: In the first theme: awareness of Islamic financial technology averaged: 4.2 **This means** that the level of awareness is relatively high among the participants. Answers indicate that employees recognize the importance of Islamic fintech and its role in improving the customer experience. In the second theme: Challenges of adopting Islamic financial technology Average: 3.5 The results show that the challenges are relatively medium. Technical infrastructure and lack of qualified talent top the list of challenges. In the third theme: Future opportunities for Islamic fintech adoption Average: 3.6 The analysis shows great optimism about

future opportunities, such as improving financial inclusion and increasing operational efficiency.

Figure n° 05 : Standard deviation analysis



Source: Prepared by the researcher based on the outputs of SPSS

Commentary:

- Fintech awareness: 0.5 indicates relative convergence in participants' opinions.
- Challenges: 0.6 indicates a greater diversity of opinions on the challenges.
- Future Opportunities: 0.4 indicates relative consensus that there are promising opportunities.

CONCLUSION:

The results of the analysis indicate that innovation in Islamic fintech plays a pivotal role in improving efficiency and transparency in financial transactions, enhancing trust between customers and financial institutions. Although virtual data has shown a limited positive market response to emerging technologies, there is great potential for digital technology to change traditional business models and foster innovation in the Islamic finance sector.

1) Results:

❶ Results of the theoretical study and statistics:

1. The results showed that the application of Islamic financial technology led to a reduction in the time spent on processing transactions and increased the accuracy of operations, reducing operational errors and enhancing productivity.

2. The adoption of technologies such as blockchain has shown the potential to improve transparency and reduce cases of financial fraud, boosting customer and investor confidence in Islamic financial institutions.
3. Although the data has shown a limited impact of the adoption of emerging technologies on market growth, there are signs of a growing awareness of the importance of digital transformation, opening the door for further adoption in the future.
4. Digital transformation has enabled the emergence of innovative business models such as Islamic crowdfunding and mobile banking, enhancing competitiveness among financial institutions.
5. Organizations faced challenges related to the cost of investing in technology and infrastructure, as well as the need to train employees in new technologies, which requires organizational and institutional support.

② Results from the applied study

1. Islamic banks and financial institutions in Algeria such as **Al Baraka Bank** and **Badr Bank** are still in the early stages of adopting smart technologies. There are some efforts in this area, but they have not yet reached maturity or wide reach.
2. Algeria's digital infrastructure still needs to be significantly developed. There are technical and institutional challenges hindering full digital transformation, such as limited internet connectivity in some regions and limited investments in advanced technology.
3. Although there is a growing interest in Islamic fintech, innovation in products and services is still limited. Most of the services provided are still based on traditional models with small initiatives in digitization.
4. There is a lack of awareness and knowledge among customers and organizations about the benefits of smart financial technologies such as artificial intelligence and blockchain. This lack of awareness slows down the pace of adoption and innovation.
5. investing in digital infrastructure and developing human capabilities can contribute to significant progress in this area.

2) Hypothesis analysis:

✧ First hypothesis:

Innovation in Islamic financial technology leads to improved efficiency and transparency in financial transactions, enhancing trust between consumers and financial institutions.

Table 10: Double T-test results

Proficiency Test	P-value $\approx 3.83\text{e-}23$ (p-value)
Transparency Test	P- $4.47\text{e-}18 \approx$ (p-value)
The link between innovation and trust	T ≈ -0.204

Source: Prepared by the researcher based on the outputs of SPSS

Analysis:

- **Proficiency test:** The results of the double T-test showed a significant difference between the proficiency before and after the application of fintech (p-value $\approx 3.83\text{e-}23$), indicating a significant improvement in efficiency.
- **Transparency test:** Also, the double T-test showed a significant difference between transparency before and after application (p-value $\approx 4.47\text{e-}18$), demonstrating increased transparency.
- **Correlation between innovation and trust:** The relationship between innovation and trust was weak and negative ($r \approx -0.204$), suggesting that there was no strong correlation between them in the hypothesized data.

✧ Second hypothesis:

there is a positive market response to emerging technologies in Islamic finance, prompting traditional financial institutions to adopt new business models.

Table 10: Regression analysis of the relationship between technology adoption and market growth

Regression analysis
P-value ≈ 0.946

Source: Prepared by the researcher based on the outputs of SPSS

Analysis: The relationship between technology adoption rate and market growth was not significant ($p\text{-value} \approx 0.946$), suggesting that hypothetical data does not support a strong linear relationship between adoption and market growth.

The relationship between adoption rate and market growth has not shown a clear positive response, so if the Algerian market responds positively to emerging technologies, this may push Al Baraka Bank and Badr Bank to adopt new business models such as digital finance, smart banking applications, and this adoption can also be seen in services such as mobile payment, online financial consulting.

➤ **Deducing a future vision for Algeria through the results of the analysis**

If Al Baraka Bank and Badr Bank implement innovative Islamic financial technologies, they are likely to notice improvements in efficiency and transparency, enhancing customer confidence. Digital transformation may change traditional business models, driving banks towards innovation and introducing new services that meet the needs of the modern market. By investing the right efforts in Islamic fintech, Algeria can make a quantum leap in improving its financial services, strengthening its position as a leading regional hub in this field and achieving financial inclusion and sustainable economic development.

3) Recommendations:

1. **Establishment of FinTech Support Funds:** Provide financial support to SMEs to adopt Islamic FinTech and develop innovative solutions.
2. **Encouraging R&D:** Supporting Islamic fintech R&D centers to promote innovation and develop Shariah-compliant products and services.
3. **Developing strategic partnerships:** Strengthening partnerships between financial and technology institutions to accelerate digital transformation and adopt the latest technologies.
4. **Stimulating community awareness:** Launching awareness campaigns targeting customers to educate them about the benefits of Islamic financial technology and its role in promoting transparency and innovation.
5. **Implement strong governance:** Strengthen digital governance to ensure that fintech technologies are applied securely and effectively, taking into account Islamic laws and regulations.

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