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The Role of Islamic Financial Technology in Achieving Financial Inclusion

Belgourari Hadjer[1] *, Salah Hichem [2]

[1] Laboratory of Markets Using Mathematical Methods and computer science, Relizane University (Algeria), Hadjer.belgourari@univ-relizane.dz

[2] Laboratory of Markets Using Mathematical Methods and computer science, Salah Hichem, Relizane University (Algeria), Hichem.salah@univ-relizane.dz

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Abstract:

This study aims to clarify the role of Islamic financial technology in achieving financial inclusion, as financial technology has revolutionized financial services and established effective solutions to target people deprived of various financial services; in addition to understanding how Islamic financial technology can achieve financial inclusion, by relying on the descriptive approach to defining the concepts of financial technology and Islamic financial technology, while simplifying the most important financial technology techniques, as well as the analytical approach to monitor the development of financial inclusion and Islamic financial technology globally.

The study concluded that Islamic financial technology is growing and expanding significantly as an indispensable economic necessity. However, the field of using Islamic financial technology still needs to overcome many challenges that hinder its expansion globally.

Keywords: Financial technology, Islamic Fintech, financial inclusion, financial industry.

JEL Classification: G20; O30.

* ***Corresponding author.***

Introduction

Financial technology and financial inclusion are key concepts in today's economy, which are important drivers for easier access to financial services and for economic stability Financial inclusion is a key financial infrastructure and becomes a classless one convenient.

Financial inclusion is a crucial objective for governments and international financial institutions. It enables individuals to access essential financial services like bank accounts, loans, and other services that enhance their financial well-being and expand their economic prospects.

Certainly, the significance of financial technology (FinTech) in the advancement and prosperity of the financial industry cannot be underestimated or ignored. Recently, this factor has played a crucial role in transforming the banking and financial business. FinTech has fundamentally transformed the industry by replacing old channels with more adaptable, accessible, and intelligent channels. These new channels provide increased ease, speed, and cost-efficiency.

Islamic finance has successfully adjusted itself to address the considerable obstacle of catering to the requirements of the tech-savvy Muslim youth and staying up to date with developments in global developing markets. It has used these recent technical breakthroughs to meet client demands and provide financially stable services that align with the norms of Islamic Sharia. This transformation has led to the emergence of a phenomenon known as Islamic FinTech or IFinTech.

Study problem: In light of the preceding, the following problem comes up:

What is the extent of the contribution of Islamic financial technology to achieving and promoting financial inclusion?

This issue includes the following sub-questions:

- What is the definition of financial inclusion?
- What does financial technology mean?
- What precisely constitutes the notion of Islamic financial technology?
- What role can Islamic financial technology play in the promotion of financial inclusion?

Hypotheses: The study was based on the hypotheses stated below:

- The innovative characteristics of Islamic financial technology have a favorable effect on improving financial inclusion.
- The innovative characteristics of Islamic financial technology do not have an important impact on improving financial inclusion.

Research objectives: The purpose of this study is to accomplish a series of goals, which include:

- Clarifying several ideas about financial inclusion.
- Understanding the concepts and methodologies of Islamic financial technology.

Research methodology: For this study, a descriptive-analytical approach was used to present concepts related to Islamic financial technology and financial inclusion.

1- The Theoretical Framework of Financial Inclusion:

Through this axis, we aim to study the conceptual aspect of financial inclusion and understand its dimensions and sections.

1-1- Concept of Financial Inclusion:

The term "financial inclusion" emerged for the first time in 1993 in a study on financial services in Southeast England by researchers Leyshon and Thrift. It was used to describe individuals' determinants, criteria, and access to financial services. The interest in financial inclusion increased globally after the 2008 financial crisis, establishing the International Alliance for Financial Inclusion, which includes 94 countries. (Dahinie & Larbi , 2022)

There are several definitions of financial inclusion, including:

- According to the World Bank, it means "the ability of individuals and companies to access useful and affordable financial products and services that meet their needs, offered responsibly and sustainably." (The World Bank, 2022)
  - Defined by the Organization for Economic Co-operation and Development (OECD) and the International Network on Financial Education (INFE) as a process of enhancing access to a range of formal financial products and services and expanding their usage by all segments of society through the implementation of targeted and innovative methods, including financial education, to promote financial well-being and social and economic integration. (Salousse & Laidi, 2023)

Despite the various definitions, financial inclusion converges on ensuring access to formal and beneficial financial products and services at reasonable rates, meeting the needs of all societal segments.

1-2- Dimensions of Financial Inclusion: In recent years, the concept of financial inclusion has evolved to include four main dimensions (Ameur & Dahmani, 2023):

a. Access to Financial Services: Refers to the ease of access to formal financial services. Determining levels of access involves identifying and analyzing potential barriers to access.
b. Use of Financial Services: This signifies the qualitative use of financial services, the extent of their utilization by clients through banking institutions over a specific period, and the frequency of this usage.
c. Quality of Financial Services: One of the challenges facing all countries, particularly developing ones. This requires these countries to measure, compare, and take evidence-based actions regarding the efficiency and quality of financial services provided.
d. Well-being: The ability to enhance well-being through financial services**.**

1-3- Importance of Financial Inclusion:

There is an intertwined relationship between financial inclusion, financial stability, and economic growth. It is challenging to envision financial stability while a significant portion of the population and businesses still need to be financially excluded from the economic system. The importance of financial inclusion is highlighted in (Louzri, 2021):

- Encouraging competition among financial institutions to diversify and improve the quality of their products to attract a larger customer base and transactions.
- Increasing access for population segments facing insufficient services to high-quality financial services and ensuring the capabilities of institutions to sustain.
- Achieving financial stability by improving economic conditions and raising the living standards of the poor leads to social and political stability and, consequently, enhances the strength of the financial system. Financial inclusion also improves the efficiency of intermediation between deposits and investments.
- Stimulating business growth and improving tax revenues for the economy. Financial inclusion is linked to other determinants of

economic growth, such as investment, savings, information and communication technology, foreign portfolio investment, and foreign direct investment. Real economic growth and development promote the development of the financial market in the short term, and financial market development encourages foreign direct investment.

Enhancing savings, facilitating access to credit in emergencies for project organization, and allowing for an efficient payment mechanism.

1-4- Key Pillars of Financial Inclusion: The most important pillars of financial inclusion include (Guettaf , 2022):

a. Support for Financial Infrastructure: This infrastructure is considered necessary to meet financial inclusion requirements. Among the most important basic pillars for creating a suitable and strong environment for it, priorities should be identified, including:

- A suitable legislative environment that includes all instructions and regulations working to promote financial inclusion.
- Geographic distribution of the network of branches of financial service providers in various forms, including bank branches, mobile banking services, points of sale, ATMs, and others.
- Development of payment and settlement methods and systems to facilitate the implementation of financial operations and services.
- Communication technology and electronic banking are utilized in financial services, aiming to reduce costs.
- Providing comprehensive databases, especially credit data for individuals and institutions.

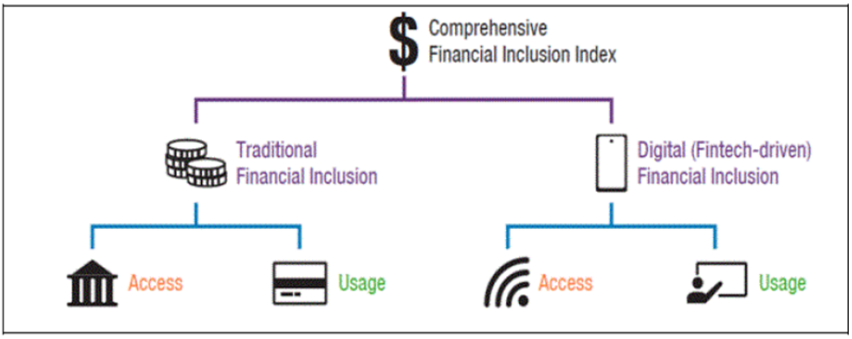
b. Development of Financial Products and Services Meeting the Needs of the Entire Society: Facilitating access to vulnerable groups and small enterprises, meeting their requirements, and engaging them in the financial system, thanks to the role played by supervisory authorities in achieving this pillar through easing financing requirements, reducing fees and commissions on services provided, and enhancing competition.

c. Consumer Financial Protection: Through ensuring fair and transparent treatment for the client, facilitating access to financial services at the lowest cost and with high quality, providing sufficient and necessary information, financial supervision services, and protection of financial data. Financial education, especially for marginalized groups, is also crucial.

d. Financial Education: This is achieved by developing a national strategy to enhance levels of financial education and awareness and working on evaluating and measuring its success, ensuring the involvement of government agencies, the private sector, and relevant parties in financial education.

1-5- Sections of Financial Inclusion: Financial inclusion is divided into two parts: Traditional financial inclusion, which relies on banks and credit cards, providing traditional financial services and delivering them to the largest possible segments of society, and digital financial inclusion, which relies on technology and its techniques, primarily the internet and smart technological devices. (Boutaleb & Seffari, 2023)

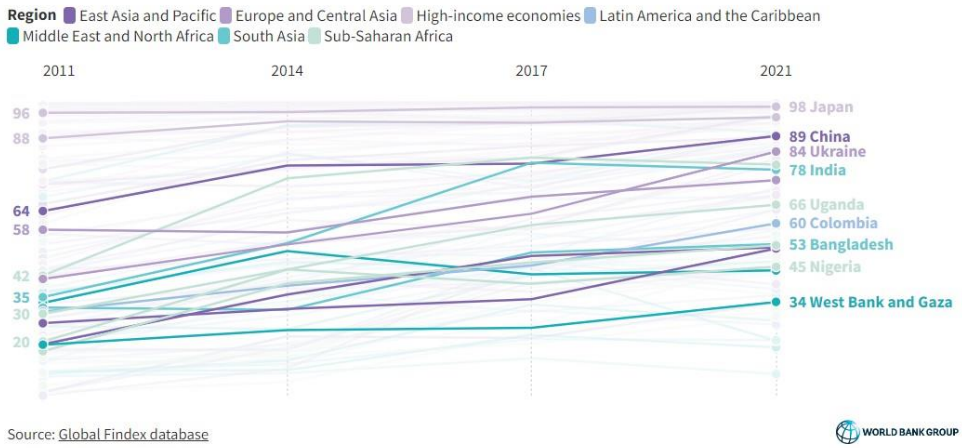
Figure number (01): Financial Inclusion Sections



Source: Boutaleb, A., & Seffari, A. (2023, 06 09). Financial Technology as a pillar for promoting financial inclusion in the Arab Region. Journal of Finance, Investment and Sustainable Development, pp. 785-805.

1-6- Global and Arab Financial Inclusion Landscape: On a global scale, the ownership percentage of bank accounts increased from 51% to 76% worldwide between 2011 and 2021 (Fig 1). In 2021, 76% of adults worldwide had accounts with a financial institution or through mobile financial service providers, compared to 51% in 2011. Ownership of accounts in developing countries rose from 63% to 71% in recent years due to increased accessibility to accounts in dozens of developing countries. This starkly contrasts the growth observed between 2011 and 2017, which was mostly concentrated in China or India. In the Sub-Saharan Africa region, mobile money has significantly contributed to the increased ownership of accounts. (Saniya , Jijun , Mansi, & Sri , 2022)

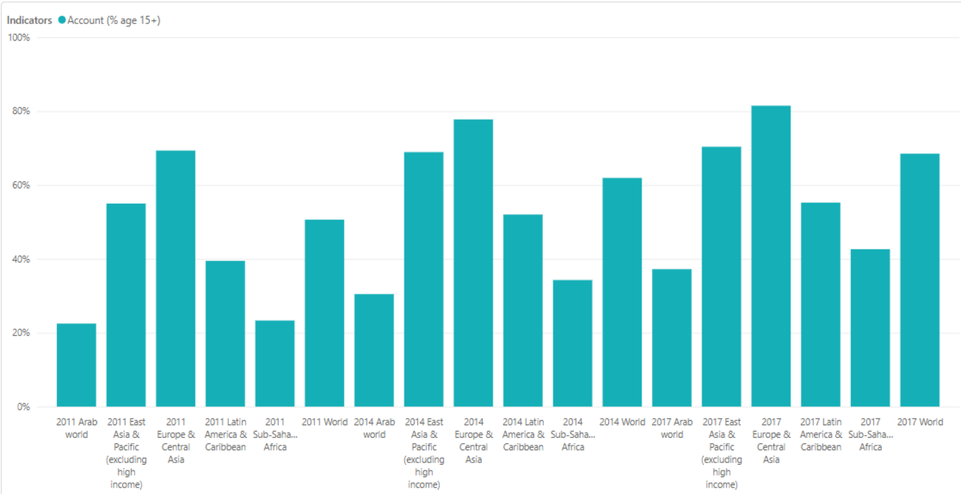
Figure number (2): Percentage of ownership of bank accounts globally between 2011 and 2021



Source: Saniya , A., Jijun , W., Mansi, V. P., & Sri , S. R. (2022, 06 29). Unveiling the Global Findex database 2021 in five charts. Récupéré sur World Bank Blogs : https://blogs.worldbank.org/developmenttalk/unveiling-global-findex-database-2021-five-charts

The world's lowest levels of financial inclusion are still seen in the Arab world. Of the 160 million Arab people living in Arab nations, only around 37% of adults have bank accounts. This indicates that 63% of adult populations are not eligible for formal financing or financial services. Statistics also show that the lowest percentage in the world, 79% of young people in the Arab world between the ages of 15 and 24, do not have bank accounts with any official financial institution. Furthermore, the number of individuals having bank accounts in the lowest 40% of Arab families is 27.7%, while the number in the richest 60% of households is 43.4%. This indicates that access to formal financial services varies depending on income. It is still evident that Arab women are excluded from banking and financial operations. Though the number of women who possess bank accounts has increased from 13.8% in 2011 to around 25.6%, this is still the lowest percentage worldwide for women. Conversely, men had bank accounts in 48.3% of cases, suggesting a significant gender disparity in financial inclusion of almost 23%. This suggests that compared to males, Arab women are 23 percentage points less likely to possess a bank account. The proportion of accounts owned in rural regions rose from 11.2% in 2011 to 18.7% in 2014 and 27.8% in 2017. Nonetheless, this continues to be the lowest proportion worldwide, underscoring disparities in account ownership across sexes, wealth and poverty, and urban and rural regions. Another disparity has to do with education level; in the Arab world, the percentage of people with a bank account who only have a basic education is just 26.5%, but the percentage rises to 48.7% for those with a secondary degree. This highlights how crucial culture is in general, and financial literacy and awareness in particular, for establishing bank accounts and engaging with the official financial system. (Union of arab Banks, 2019)

Figure number (03): Ownership of accounts at formal financial institutions as a proportion of individuals aged 15 and older.



Source: The World Bank, The Global FINDEX Database 2021, Available at: https://www.worldbank.org/en/publication/globalfindex/Data

Although there was an overall rise in account ownership in Arab nations from 2011 to 2017, there are differences across these countries. The account ownership rate in 2017 was notably high in the United Arab Emirates, Bahrain, and Kuwait, with percentages of 82%, 83%, and 80% respectively. However, the percentage in Yemen, Djibouti, Sudan, Mauritania, Comoros, Iraq, and Syria remained below 25%. In 2017, the United Arab Emirates had the highest financial inclusion rate in the Arab area, reaching 88.2%, a significant increase from the 59.7% reported in 2011. In 2017, Saudi Arabia had a rate of 71.7%, which was an increase from 46.4% in 2011. In Egypt, the percentage of people with bank accounts rose from 9.7% in 2012 to 32.8% in 2017. The financial inclusion rate in Iraq increased from 10.6% in 2011 to 22.7% in 2017. The enhancement may be ascribed to banking initiatives such as the localization of employee wages, the provision of additional loans, and the expansion of electronic payment firms. (Union of arab Banks, 2019)

Table number (01): Financial inclusion in Arab countries

Country Name	Country Code	2011	2014	2017
Algeria	DZA	33,29	50,48	42,78
Bahrain	BHR	64,51	81,94	82,61
Comoros	COM	21,69	..	..
Djibouti	DJI	12,27	..	..
Egypt, Arab Rep.	EGY	9,72	13,65	32,07
Jordan	JOR	25,47	24,62	42,08
Kuwait	KWT	86,77	72,91	79,84
Lebanon	LBN	37,03	46,93	44,75
Libya	LBY	..	..	65,67
Mauritania	MRT	17,46	20,45	19,03
Iraq	IRQ	10 ,6	11	20,3
Morocco	MAR	..	..	28,41
Oman	OMN	73,6	..	..
Qatar	QAT	65,88	..	..
Saudi Arabia	SAU	46,42	69,41	71,7
Somalia	SOM	..	7,86	..
Sudan	SDN	6,9	15,27	..
Syrian Arab Republic	SYR	23,25	..	..
Tunisia	TUN	..	27,26	36,82
United Arab Emirates	ARE	59,73	83,2	87,39

West Bank and Gaza (Palestine)	PSE	19,43	24,24	25,02
Yemen, Rep.	YEM	3,66	6,45	..

Source: Compiled by authors based on data from the World Bank, available at: https://databank.worldbank.org/source/global-financial-inclusion#

2- The role of Islamic financial technology in achieving financial inclusion:

Within this framework, we will examine the overarching notion of Financial Technology (FinTech) and delve into the specific realm of Islamic Financial Technology, which integrates the principles of FinTech with the aspects of Islamic law.

1-2- **Definition of Financial Technology (FinTech):** Financial Technology, or FinTech, can be defined as follows:

- The term Financial Technology (FinTech) emerged in 1972, coined by Abraham Leo Bettinger. FinTech is a fusion of "Financial" and "Technology," representing modern technological inventions in finance. It encompasses a range of digital programs used in financial operations for banks. (Alioui & Meziane , 2022)

- Financial Technology refers to platforms, applications, services, and technology companies operating in the service and development of the financial sector worldwide. According to the Financial Stability Board, FinTech is financial innovation using technology that can create new business models, applications, operations, or products that have a material impact on markets and financial institutions, affecting the delivery of financial services. (Boutaleb & Seffari, 2023)

- It has also been defined as the Fourth Industrial Revolution, as per Klaus Schwab, driven or led significantly by technologies that enhance and disrupt financial services, operations, business models, and customer commitments. This revolution is a convergence of new technologies, including robotics, artificial intelligence (AI), nanotechnology, quantum computing, biotechnology, and the Internet of Things (IoT). (Khadidja , 2023)

2-2- Financial Technology (FinTech) Techniques: (FinTech) Innovations have led to various applications and technologies that contribute to the advancement of the financial sector. These include (Zouaouid , 2021):

- Cryptocurrency and Digital Currency: A digital currency utilizing encryption for security and regulation of issuance and circulation. The most famous cryptocurrency is Bitcoin, and blockchain technology operates most cryptocurrencies.
- Blockchain Technology: Distinguished by its decentralized nature, it does not require intermediaries for transactions among users of this technology.
- Smart Contracts: Dependent on blockchain technology for execution, these contracts utilize software to enforce contractual terms automatically.
- Open Banking: Allows access to banking data.
- Insurtech: Aims to leverage technology to improve the insurance industry and provide more efficient insurance services.
- Regutech: Seeks to support financial service companies in adhering to regulatory rules, particularly those covering anti-money laundering protocols and fraud prevention.
- Unbanked Services: Provides services to low-income individuals overlooked by traditional banks or major financial service companies.
- Cyber Security: Involves measures aimed at protecting information systems and digital data.

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4-2- Products and Services of Islamic FinTech: The following is a list of the main offerings from Islamic FinTech (Amrouche & Chenait , 2023):

- Peer-to-peer lending or peer-to-peer financing;
- Crowdfunding;
- Mobile money transfers and payments;
- Trading platforms;
- Insurance technology (InsurTech);
- Block chain technology.

5-2- Opportunities and Challenges of Islamic FinTech: The potential and difficulties of Islamic FinTech are outlined in the table below:

Table number (02): Opportunities and Challenges of Islamic Financial Technology

Opportunities	**Challenges**
Islamic FinTech Companies Offer Significant Support to Start-ups	Lack of thorough and reliable research in the Islamic financial technology sector
Islamic Fintech companies offer a diverse range of services and cutting-edge innovations.	Lack of human resources and unclear government policies hinder Islamic financial technology development.
There is an option to use traditional financial services in addition to	It is important to provide well-trained

innovative new services	and skilled cadres.
It can provide cost-effective solutions for financial services, give Islamic banks opportunities to move to digital work and provide financial services at low cost	Islamic Fintech needs to keep up with the rapidly evolving global financial industry.
It is easy to access and use, enabling it to gain customers' trust easily	Islamic financial technology should maintain its stability and protect investors and institutions from fraudulent practices.
It can be linked to cryptocurrencies, blockchain, and more	Banks are more vulnerable at all levels as technology advances and transparency increases.
Its compliance with Sharia law can help earn Muslim investors' trust.	The novelty of Islamic financial technology makes it difficult for investors to estimate the value of appropriate investments. The novelty of Islamic financial technology makes investors unable to estimate the value of appropriate investments.

Source: Malika Benalkama. "The islamic Fintech Ecosystem -Malaysian Experience-." Journal of Economics and Human Development 04 01, 2022: 133-148.

3- **Global Islamic Fintech Landscape:** According to a Dinar Standard and ELIPSES report, the Islamic FinTech sector is exhibiting significant maturity and growth. There are currently 375 companies operating in the Islamic technology field worldwide, which offer various financial services to clients around the globe through innovative technologies. The top 10 countries with the most companies in this sector are Indonesia, United Kingdom, United Arab Emirates, Saudi Arabia, Malaysia, Qatar, United States, Pakistan, Egypt, Bahrain, and Nigeria, which account for 82% of the total companies. Additionally, half of these companies focus primarily on five main sub-sectors, which are (Sayd , Najmul , & Abdul Hasseb , 2022):

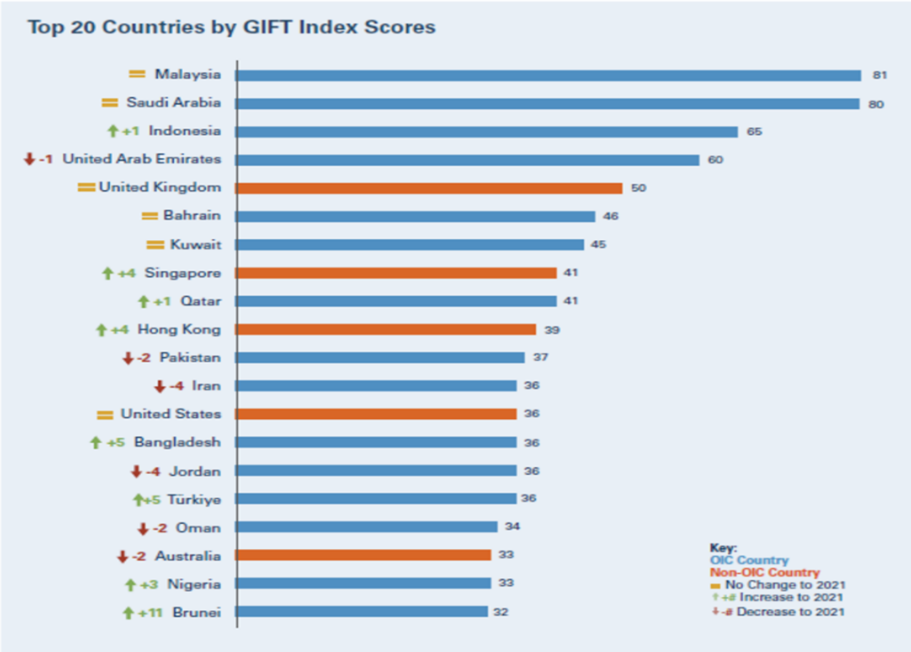
- Crowdfunding: 53 companies currently operate in this sector. Crowdfunding is a widely used method for funding projects and individuals by raising funds from various investors.
- Payments: 49 financial technology companies focus on facilitating payment and financial transfer operations.

- Challenger banking: 34 companies provide innovative banking services as an alternative to traditional ones.
- Robot-Advisory: 27 companies offer investment advice based on artificial intelligence and analytical techniques.
- Alternative Finance: 22 companies offer innovative financing options tailored to the needs of consumers and businesses.

These statistics showcase the diversity and growing trend towards Islamic finance and financial technology, indicating significant opportunities in this thriving sector.

4-1- Global Islamic Fintech Index (GIFT): The GIFT Index includes 64 rising nations in the Islamic financial technology sector, with Malaysia and Saudi Arabia leading countries in this area. This index employs a comprehensive set of 19 factors distributed across five distinct categories to assess each nation. The five factors are talent (creativity and innovation), regulations, infrastructure, the Islamic financial technology environment and market, and cash (finance). The categories are assigned weights to calculate a final aggregate score, with the most weight allocated to the Islamic financial technology market and Islamic ecosystem category. The index is often regarded as the most robust measure of a country's inclination towards Islamic financial technology (Sayd , Najmul , & Abdul Hasseb , 2022).

Figure number (04): Top 20 countries by GIFT Index scores



Source: Dinar Standard and ELIPSES, Global Fintech report, 2022.

4-2- Importance of achieving financial inclusion: The significance of attaining financial inclusion is highlighted by the World Bank report, which indicates that over 200 million small and medium-sized businesses require banking support worldwide and that roughly 1.7 billion people may be potential customers for individual banking services. These entities are mostly located in places with a Muslim majority, comprising around 50% of the global population. Because the FinTech concept aims to provide effective solutions to save company expenses and improve the customer experience while performing commercial activities, this offers a favorable opportunity for Islamic FinTech enterprises. The financial technology industry, which includes Islamic FinTech, is present in several areas and helps to promote economic development. (The global Islamic fintech banking market: trends and outlook , 2022)

Conclusion

Islamic finance technology is a large and important area in the global financial sector. What sets it apart is its adherence to Islamic Sharia and Islamic financial principles and its transparency in transactions, simplicity of access, and use. The convergence of financial innovation and ethical issues makes Islamic finance technology a powerful catalyst for change in the financial system.

The main objective of financial inclusion is to provide the widespread provision of financial services and products to a broad range of persons and institutions, hence improving their ease of access and use in a prompt, convenient, and secure manner. Due to the inherent nature of these goals, it is essential to depend on Islamic financial technology to attain financial inclusion.

Financial technology is essential for achieving these objectives and expanding access to financial services by utilizing advanced technologies to provide creative financial services, overcome challenges, and bridge gaps in serving different segments of society.

The research has produced the following findings:

- Islamic financial technology is now indispensable for Islamic societies in the contemporary era.
- Islamic financial technology has significantly advanced Islamic finance, attracting a larger clientele and strengthening the Islamic financial sector.
- The development of Islamic financial technology is essential for increasing its worldwide reach and supporting the integration of this new industry on a global scale.
- It is necessary to allocate more funds towards Islamic financial technology to boost banking services, particularly electronic technologies.

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