The Impact of Financial Technology on Financial Inclusion (A Global and Arab Perspective)

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Abstract:

Financial technology has swept across the economic landscape, proving essential for facilitating transactions for the widest possible segment of bank customers. The development of fintech has contributed to the activation of numerous financial services that have restructured the financial sector, making it easier, faster and less costly, whilst ensuring fair and equal access for all segments of society, thereby promoting financial inclusion. This has prompted countries around the world to keep pace with this development in their efforts to promote financial inclusion, which involves providing financial services to low-income groups in society at a reasonable cost.

Keywords: financial technology; financial inclusion; digital finance; fintech; bank accounts.

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1. INTRODUCTION

Today, financial technology has become the driving force behind global progress. It is one of the modern concepts in the financial sector, having developed significantly across the world through the activities of its institutions, which contribute to facilitating and accelerating financial and banking services. It relies on providing a wide range of services such as payments, money transfers and other financial services, achieved by keeping pace with a range of modern technologies, including financial inclusion, which ensures access for all segments of society, including those groups suffering from marginalization and facing accumulated obstacles that limit their access to various means of finance.

Research Question: Based on the above, the main research question is formulated as follows:

What is the impact of financial technology on financial inclusion at the global and Arab levels?

Research sub-questions:

- What do we mean by 'financial technology' and 'financial inclusion'?
- Can fintech influence financial inclusion?
- What is the level of fintech and financial inclusion globally and in the Arab world?

Research hypotheses:

- Financial technology refers to any technology that provides financial services through software, whilst financial inclusion refers to efforts aimed at making financial and banking products and services available to as many communities as possible.
- Financial technology plays an important role in increasing and promoting financial inclusion.
- Fintech and financial inclusion have developed significantly at the global level, whereas in the Arab world they have not yet achieved their intended objectives.

Research objectives: This research aims to address the theoretical aspects of fintech and its impact on financial inclusion, and to highlight the characteristics of each at both the global and Arab levels.

Research methodology: This research adopts a descriptive-analytical approach, describing the theoretical aspects of financial technology and financial inclusion, analyzing the nature of the relationship between them, and examining the status of each at the global and Arab levels.

2. WHAT IS FINANCIAL TECHNOLOGY?

2.1 Historical development of financial technology

Fintech is used to describe new technology that seeks to improve and streamline the provision and use of financial services. At its core, fintech helps companies, business owners and consumers better manage their financial operations through the use of specialized software and algorithms running on computers and, increasingly, on smartphones. When fintech emerged in the 21st century, the term was initially applied to the technology used in the back-office systems of financial institutions. It then expanded to include consumer-oriented services; today, fintech encompasses various sectors such as education, retail banking, non-profit fundraising, as well as the development and use of cryptocurrencies such as Bitcoin **(Bougazala et al., 2022, p. 3).**

2.2 Definition of financial technology

There are numerous definitions of 'financial technology' due to the diversity of its fields and its continuous development:

- In its broadest sense, fintech refers to the application of technology in the financial industry, offering financial services lending, investment, payment methods, risk management, data analysis, insurance and wealth management and encompassing all innovative use of technology in the design and provision of financial services and products **(Ben Hara & Boukthir, 2023, pp. 304–305).**
- According to the Global Financial Stability Board, financial technology refers to technology-enabled financial innovations that create new business models, applications, processes or products with a tangible impact on financial markets, institutions and the delivery of financial services (Sati & Filali, n.d., p. 304).
- The Digital Research Institute defines it as modern technological inventions and innovations in the financial sector, including digital programmers used in banks' financial operations money transfers, currency exchange, interest rate calculations, determining expected returns on investments, and other banking operations **(Ben Hara & Boukthir, 2023, p. 306).**

From the above, fintech involves the application of technology in the financial sector to develop modern innovations whether applications, services or products that contribute to the conduct of financial transactions, enhancing their quality and ensuring efficiency and effectiveness.

3. FACTORS CONTRIBUTING TO THE SPREAD OF FINANCIAL TECHNOLOGY

- The development of software and the emergence of numerous programmers that encourage the use of technology in all financial aspects.
- The accelerating pace of life and global developments that constantly necessitate finding faster and easier methods across all economic sectors.
- The introduction of further legislation and laws that protect transactions involving all forms of financial technology and encourage its wider use.
- The rapid spread of cryptocurrencies and crowdfunding, and the emergence of artificial intelligence and big data **(Balabidi & Mashraoui, 2023, pp. 1287–1288).**

3.1 Key financial technologies

Big Data:

This refers to data of such large volume that it exceeds the processing capacity of traditional databases. It is characterized by volume, velocity, variety, and validity, and requires modern software and techniques for processing, analysis, storage, sharing, searching and transfer **(Balabidi & Mashraoui, 2023, pp. 1287–1288).**

Machine learning and predictive analytics:

The process by which a machine extracts specific patterns from a large volume of data and learns these patterns under the supervision of specialists, relying on linking descriptive features with target features based on historical events, enabling predictions for new scenarios.

Artificial intelligence:

The intelligence exhibited by machines as opposed to the natural intelligence exhibited by humans, used to describe machines or computers that mimic cognitive functions such as learning and problem-solving.

Smart contracts:

Also known as blockchain, digital or encrypted contracts, these are used on the blockchain to transfer assets or digital currencies between multiple parties under specific conditions.

The importance of financial technology:

The importance of financial technology:

In today’s world, financial technology is of great importance, which can be summarized as follows:

- Promoting financial inclusion and diversifying economic activity through innovations that help provide financial services to those who do not use the banking system.
- Facilitating the provision of alternative sources of finance for small and medium-sized enterprises.
- Achieving financial stability through the use of technology to ensure regulatory compliance and risk management.
- Facilitating foreign trade and remittances from workers abroad by providing efficient and cost-effective mechanisms for cross-border payments.
- The use of electronic payment methods increases the efficiency of government operations,

which calls for further reforms to address gaps in the regulatory, consumer protection and national security frameworks.

3.2 The world's leading fintech companies

In 2020, certain personal transfer apps and payment companies flourished and were celebrated by Forbes at the Fintech Awards, which announced the top fintech models **(Yakhlaf & Al-Ajaj, 2023, pp. 106–107):**

- **CHIME:** a digital services start-up that won the Best Product award after tripling its service offerings in six months, raising $14.5 billion in September 2020 and adding one million users.
- **HM Bradley:** offers current accounts and tiered savings. Within 12 months, it attracted $100 million in customer deposits and launched a credit card in 2020, winning the award for the most interesting newcomer.
- **AFFirm:** won the Innovator Award after its transaction volume rose from $2.6 billion in 2019 to $4.6 billion in 2020.
- **Propel:** distinguished itself through its contribution to providing grants to combat the pandemic's aftermath, awarding $1,000 to low-income Americans, earning the Outstanding Company Award after distributing payments to 176,000 households.

4. FINANCIAL INCLUSION

4.1 The concept of financial inclusion

The World Bank defines financial inclusion as meaning individuals and businesses can access useful financial products at affordable prices transactions, payments, savings, credit and insurance provided in a responsible and sustainable manner.

- The Centre for Financial Inclusion (CFI) in Washington defines it as a situation in which all individuals are able to access a full range of quality financial services at affordable prices and in a profitable manner that preserves the dignity of customers **(Ben Yaza & Boukthir, 2023, pp. 304–305).**
- The G20 and the Alliance for Financial Inclusion (AFI) define financial inclusion as: promoting access to and use of financial services and products by all segments of society, including marginalized and poor groups, tailored to their needs and provided in a fair, transparent and affordable manner.
- The OECD and the International Network for Financial Education (INFE) define it as: the process through which access to a wide range of formal, regulated financial services is enhanced at reasonable times and prices, and the use of these services by different segments of society is expanded, with the aim of promoting financial well-being and social and economic inclusion.
- The Council of Governors of Arab Central Ban credit (netary Authorities has defined financial inclusion as the availability and use of all financial services by various segments of society including institutions and individuals, particularly those who are marginalized through official channels, including savings accounts, payment and transfer services, insurance, financing and credit (Sadqi, 2023, p. 117).

- According to the joint statement by the Arab Monetary Fund (AMF) and the Consultative Group to Assist the Poor, financial inclusion refers to individuals including those on low incomes and businesses including small enterprises having access to and effectively utilizing a wide range of high-quality formal financial services provided in a responsible and sustainable manner (Attia, 2021, p. 376).
- Based on the above, financial inclusion is a mechanism or strategy that enables various parties whether individuals or institutions, particularly excluded, poor and disadvantaged groups to access diverse financial services and products offered by formal financial institutions in the shortest time, at the lowest cost and to a high standard, whilst using them effectively and responsibly.

4.2 Principles of Financial Inclusion

The Global Partnership for Financial Inclusion (GPFI) was established in 2010 at the Seoul G20 Summit. Its establishment was underpinned by the G20 Principles for Innovative Financial Inclusion, which provide guidance and framework for improving access to financial services. These nine principles are (Yassad et al., 2023, p. 184):

- **Leadership:** government commitment to financial inclusion to help alleviate poverty.
- **Diversity:** promoting competition to ensure access to affordable financial services and a diverse range of service providers.
- **Innovation:** encouraging technological and institutional innovation to expand access and usage.
- **Protection:** protecting consumers whilst recognizing the roles of the government and service providers.
- **Empowerment:** fostering financial literacy.
- **Collaboration:** encourage accountability and coordination within government and partnerships.
- **Knowledge:** leveraging improved data to develop evidence-based policy and measure progress.
- **Proportionality:** building a policy and regulatory framework proportionate to the risks and benefits involved.
- **Framework:** consider a risk-based anti-money laundering and counter-terrorist financing regime.

4.3 Dimensions of financial inclusion and its indicators

Alongside the GPFI recommendation, G20 has issued a set of indicators to measure the key dimensions of financial inclusion, as outlined in Table 1 below:

Table 1. Dimensions of financial inclusion and their indicators

Dimension	Concept	Some Measurement Indicators
Access to financial services	Ability to use financial services from formal institutions; barriers must be identified and analyzed.	- Number of access points per 10,000 adults, by region. - Number of ATMs per 1,000 km². - Electronic money transfer

		accounts. - Interconnectivity between service delivery points.
Use of financial services	Extent to which customers use financial services; regularity and frequency of usage over a specific period.	- Proportion of adults with a regular deposit account. - Proportion with a regular credit account. - Non-cash retail transactions per person. - Number of mobile payment transactions. - Proportion of SMEs with formal financial accounts.
Quality of financial services	Extent to which a financial service or product suits the consumer's needs and lifestyle.	- Affordability. - Transparency. - Consumer protection. - Convenience and ease. - Financial education.

Source: Safari, A., & Ben Daya, A. (2021). The impact of financial inclusion policy on banking sector stability. Journal of Industrial Economics, 11(1), p. 75.

4.4 Objectives of financial inclusion:

- Having access to a transaction account is the primary objective of financial inclusion, and it also has many other objectives, including:
- Facilitating access to financial products and services for all sections of society, including the poor and marginalized, and extending these to remote areas, thereby contributing to poverty reduction and the achievement of sustainable development.
- Reducing costs and removing barriers to accessing financial services.
- Reducing income and wealth inequality and ensuring equal opportunities.
- Ensuring the soundness of the financial system and achieving economic and social stability.
- Providing alternatives for the financially excluded, particularly in relation to religious considerations, such as Islamic finance.
- Supporting development projects, such as small and micro-enterprises.
- Facilitating access to sources of finance with the aim of improving citizens' living conditions.
- Promoting competition among financial institutions by encouraging product diversification and a focus on quality to attract a larger number of customers and transactions, thereby formalizing informal channels.
- Improving banking performance through penetration of local and international markets.

5. RESULTS AND DISCUSSION

5.1 Positive impacts of financial technology on financial inclusion

The increased supply of digital finance is often expected to have positive effects on financial inclusion (Bougazala & Ben Omar, 2022, pp. 4–5):

- When applied to the lives of low-income and poor people, digital finance can improve their access to essential services, leading to increased financial inclusion in rural areas.

- If digital finance platforms are user-friendly, users can help inform and persuade their peers in both the formal and informal sectors to take advantage of digital financial services, thereby boosting financial inclusion.
- Financial technology can address critical challenges to promoting financial inclusion and inclusive growth and diversify economic activity through innovations that help deliver financial services to the large segment of the population that does not engage with the banking system.
- Fintech can also contribute to financial stability by using technology to ensure regulatory compliance and risk management and can facilitate foreign trade and remittances from workers abroad by providing efficient and cost-effective mechanisms for cross-border payments.

5.2 Negative impacts of financial technology on financial inclusion

- Companies adopting digital transformation may employ a more aggressive marketing strategy to persuade high- and middle-income customers to use new digital finance platforms, while being less aggressive towards low-income customers if they believe the latter cannot afford the associated fees, leading to lower financial inclusion for poor customers.
- Bias in the provision of digital finance can be geographical, as digital finance providers may choose to withdraw or cease providing specific services to high-risk rural areas or communities lacking the necessary infrastructure, leading to a reduction in financial access.
- Digital finance providers may, based on profitability assessments, focus less on providing services to poor and uneducated communities that lack the basic financial literacy to use and understand digital finance.

5.3 Factors contributing to the role of financial technology in achieving financial inclusion:

Achieving high levels of financial inclusion through the use of financial technology depends on several factors, the most important of which are as follows:

- Providing opportunities to support innovation and digital transformation.
- Establish favorable regulations and regulatory frameworks that ensure security and protection for customers when conducting transactions.
- Using fintech as a tool to reduce the costs of advertising new banking products and services, as global financial institutions are currently making increasing use of mobile app platforms to advertise their banking products and services online, which necessitates the use of available fintech to cut costs.
- Paying attention to the regulatory environment and legislative frameworks, with a focus on transparency, governance and capitalization.
- Establishing a comprehensive financial education system to foster a financially literate society, working to enhance and develop awareness levels across all segments of the population and helping citizens make sound and informed investment decisions regarding their various financial transactions with the lowest possible levels of risk.

- Empowering target groups for financial inclusion by developing a national strategy aimed at enhancing levels of financial education and literacy and working to evaluate and measure its success; due consideration must be given to the limited experience of new customers regarding the use of electronic financial services to help them understand their rights and responsibilities. Financial technology plays a crucial role in overcoming the barriers to financial inclusion and enabling developing countries to move directly towards digital approaches, through:
- Scope of coverage: Digital channels deployed by service providers such as banks, telecommunications companies and others have helped millions of people with mobile phones to access digital financial services in recent years, linking them not only to payment services but also to savings, insurance and investment services.
- Customer information: As part of customer due diligence and risk management procedures, service providers are required to verify customers' identities. Digital identity and the data footprint generated by the use of digital financial services including mobile services, electronic payments and e-commerce facilitate this.
- Financial inclusion: Services for marginalized and excluded groups include a wide range of payment, deposit and insurance services, as well as low-value lending products tailored to their needs.

5.4 Financial technology and financial inclusion at the global level

As for the impact of financial technology on financial inclusion at the global level **(Yassad et al., 2023, pp. 185–187):**

Smart devices:

In 2019, mobile technologies and services generated $4.1 trillion in economic value added globally and accounted for 4% of global GDP. According to World Bank statistics, this figure is set to reach nearly $5 trillion and 4.9% of global GDP by 2024. By the end of 2019, the services sector had recorded 5.2 billion mobile subscribers, with around 600 million new subscribers expected by 2025, bringing the total to 5.8 billion.

Financial service agents:

The number of financial service agents worldwide is steadily increasing, with around 228 mobile financial service agents dealing with small retailers who allow customers to deposit or withdraw money from their accounts via mobile devices.

Mobile services:

In 2019, the number of people connected to the internet reached 2.6 billion for the first time, bringing the total to just under 3.8 billion people worldwide (49% of the population). Whilst three-quarters of the population are connected via mobile phones in North America and Europe, penetration stands at only around 40% across Asia, the Pacific, the Middle East and North Africa, and reaches 26% in sub-Saharan Africa.

Global fintech market growth rate:

The global fintech market was valued at $7,301.78 billion in 2020 and is expected to grow at a compound annual growth rate of 27.5% from 2021 to 2026.

Account ownership globally:

Globally, account ownership reached 76% of adults and 71% of adults in developing economies in 2021, up from 51% in 2011. Account ownership in developing countries has risen from 63% to 71% in recent years.

Global gender gap:

The gender gap in account ownership has narrowed from 9 to 6 percentage points in developing economies. Data shows 74% of men and 68% of women in developing countries have a bank account; globally, 78% of men and 74% of women had accounts (4 percentage point gap).

5.5 Financial technology and financial inclusion in the Arab world 2014-2017:

Use of mobile phones or the internet to access bank accounts:

Across the Arab world in 2017, 52.9% of adults with a bank account in the UAE used their mobile phones or the internet to access their bank accounts, followed by Saudi Arabia at 35.7%, Bahrain at 34.9% and Kuwait at 29.8%. Egypt (6.9%), Morocco (5%) and Algeria (4.7%) ranked lowest.

Use of the internet for bill payments or online shopping:

The UAE ranked first in the Arab world at 59.7%, followed by Bahrain at 43.7% and Saudi Arabia at 38.5%, whilst Morocco ranked last at 2%.

Digital payments:

In the Arab world, the proportion of adults who made digital payments rose from 20% in 2014 to around 26% in 2017. The GCC countries lead the way: 84% of adults in the UAE made or received online payments in 2017, followed by Bahrain at 77.3%, Kuwait at 74.8% and Saudi Arabia at 61.2%. Morocco (16.7%), Mauritania (15.7%) and Palestine (14.2%) recorded the lowest rates. The proportion of adults making digital payments increased since 2014 by around fourfold in Iraq, and by around threefold in Egypt and Jordan (Zahra & Dahman, 2020, p. 75).

5.6 The Impact of Fintech on Financial Inclusion in the Arab World 2017–2024:

Fintech outstrips all other technology sectors in the Arab region in terms of the volume of capital investment it receives, with the figure exceeding $2.1 billion in 2023, followed by e-commerce and then healthcare, The fintech sector has received government support through legislation and enforcement mechanisms; Jordan, the United Arab Emirates, Bahrain, Tunisia, Qatar, Egypt and the Kingdom of Saudi Arabia have each established fintech centers offering guidance, training and funding services, Furthermore, the experimental regulatory environments established for fintech in Jordan, the United Arab Emirates, Bahrain, Tunisia, Oman, Qatar, Kuwait, Egypt and Saudi Arabia have enabled experimentation with business models, fostered cooperation among stakeholders and supported an entrepreneurial ecosystem that keeps pace with technological developments. All these efforts in the field of fintech have had a positive impact on financial inclusion in Arab countries, where in 2021 the proportion of adults making or receiving digital payments stood at 36 per cent, though this remains below the global average of 67 per cent, Nevertheless, although this figure is low, it represents an improvement on the situation in 2014, with an increase of around 12 percentage points – which is greater than the 9. 10

percentage points. Jordan and Saudi Arabia saw the biggest surge in digital payments between 2014 and 2021, with an increase of around 23 percentage points. Furthermore, the trend towards faster growth in digital payments compared to the growth in bank account ownership mirrors the global trend and that in other regions. Furthermore, the Arab Monetary Fund, in collaboration with other partner organisations, launched a regional initiative in 2017 aimed at providing policy advice; this initiative covered data, financial technology, financial funding, financial education, financial inclusion and small and medium-sized enterprises. Furthermore, in 2024, the Alliance for Financial Inclusion established the Arab Region Financial Inclusion Policy Initiative, which brought together central banks and financial regulatory authorities from six Arab countries to exchange knowledge and expertise, discuss shared challenges in financial inclusion, and cooperate in advancing financial inclusion in the region.

6. CONCLUSION

our research, we addressed financial technology and financial inclusion, highlighting the relationship between them and their current status globally and in the Arab world. We arrived at the following key findings:

- Financial technology holds a prominent position on the international stage, as it is essential for facilitating transactions for the widest possible segment of bank customers. It has contributed significantly to the development of various services and products, ensuring their success and fulfilling the requirements for their enhancement, such as the provision of infrastructure and regulatory frameworks.
- Financial inclusion reflects the extent to which individuals and institutions are able to access the financial services and products they need at the right time and at a reasonable cost commensurate with their means, which positively impacts all economic and social indicators.
- The relationship between financial technology and financial inclusion is one of interdependence and complementarity, with each being intrinsically linked to the other.
- The level of financial technology and financial inclusion globally is highly advanced; however, at the Arab level, it remains modest and fails to meet the requirements of the states, due to several internal and external factors affecting both developing and Arab countries alike.

Recommendations of the study:

- To seek to draw upon and benefit from international expertise and experience in the field of financial inclusion, and to keep pace with developments in financial technology in order to access and implement financial services in the Arab world.
- The need to establish a legislative and legal framework and to promote financial literacy, thereby supporting and enhancing financial inclusion in the Arab world.
- improve the business environment in the Arab world by removing restrictions on foreign investment, particularly investment in start-ups, thereby contributing to the development of financial technology.
- Develop financial services tailored to the needs and capabilities of different segments of Arab society, ensuring they are affordable, fair and transparent.

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