The Roles of Islamic Financial Technology (FINTECH) in Fostering Financial Inclusion in Malaysia

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ABSTRACT

The financial sector is undergoing a paradigm shift due to technological improvements. As a result of these technical breakthroughs, the financial industry has experienced a significant transformation, characterised by a growing reliance on technology and the emergence of several opportunities and barriers. Thus, by examining official reports and the central bank's website, the research aimed to analyse the roles played by Islamic fintech in promoting financial inclusion to gain a comprehensive understanding of fintech in Malaysia. The qualitative analytical approach employed in this study relies upon a wide range of sources, such as the Central Bank of Malaysia Financial Inclusion Framework 2023-2026, official papers on fintech, the Bank Negara Malaysia website, and pertinent journal articles. The findings indicated that the Islamic fintech sector in Malaysia has prioritised the empowerment of small and medium-sized firms, unbank population, marginalised communities, and vulnerable sectors to encourage financial inclusion in Malaysia. This approach is designed to stimulate economic growth and act as an intermediary for the progress of the digital economy through the provision of financial services accessibility.

Keywords: Financial Technology, Fintech, Islamic Fintech, Financial Inclusion, Digital Finance

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INTRODUCTION

Technology integration has emerged as an essential element within the global financial services industry in recent decades. The Fourth Industrial Revolution (IR 4.0) has significantly accelerated the advancement of financial technology (FinTech), leading to notable improvements in financial services, operational processes, business frameworks, and consumer interaction methods that were prevalent in the 20th century. FinTech entities refer to non-financial institutions that employ technology to offer various financial services, including but not limited to loans, investments, payments, risk management, data analytics, and wealth management. According to the Central Bank of Malaysia (Bank Negara Malaysia; BNM), FinTech operations include various financial services like mobile payments, money transfers, trading platforms, crowdsourcing, and Peer-to- Peer (P2P) financing. – benefit of fintech

Islamic Fintech combines Islamic finance and technology, signifying that its products must comply with the Shariah. Similarly, Islamic Fintech's digital products, such as blockchain, artificial intelligence, big data, cloud computing, and the Internet of Things, offer Islamic financial services (Rahim et al., 2023). In 2021, Malaysia's Fintech sector expanded by 27% to 294 enterprises. With 60 companies, payments continue to dominate the industry, followed by lending (55), e-wallets (43), and insurtech (31) (Fitchnews. my). Islamic Fintech, which emphasises using technology to provide Shariah-compliant financial solutions, products, services, and investments, has been steadily gaining popularity. Islamic Fintech is founded on Shariah principles, which promote the welfare of humanity and integrate ethics and justice into fintech solutions. Malaysia has a more significant number of Islamic Fintech startups than the United Kingdom, United Arab Emirates (UAE), and Indonesia. Malaysia has a robust ecosystem and regulatory framework to support the growth of the digital economy. The IMF ranked Malaysia 31st of 139 countries on the Network Readiness Index in 2020. Consequently, the Malaysian economy uses information and communication technologies effectively. This has allowed Malaysia to rapidly capture the Fintech industry market (Rahim et al., 2023). The local Islamic ECF and P2P financing markets provide viable Shariah-compliant financing options for micro, small, and medium-sized enterprises (MSMEs). This option raised RM368.1 million in 2022 (compared to RM225.9 million in 2021) (Capital Market Malaysia, n.d)

According to the World Bank Group (2022), Financial Inclusion has been regarded as an enabler for seven (7) out of the seventeen (17) Sustainable Development Goals. Access to a transaction account is the first step towards broader financial inclusion because a transaction account enables individuals to deposit funds and send and receive payments. A transaction account is a gateway to other financial services, so ensuring that individuals worldwide can access transaction accounts is crucial. Digital financial inclusion refers to using digital technologies to provide affordable and sustainable formal financial services to excluded or underserved populations. This approach aims to reach individuals who lack access to financial services by employing cost-effective digital methods, ensuring that the services offered are tailored to their specific needs and delivered responsibly (World Bank Group, 2022). The Financial Inclusion Support Framework (FISF) has been built worldwide. The World Bank Group (WBG) project known as the Financial Inclusion Support Framework (FISF) intends to hasten and enhance the efficacy of country-led reforms and other activities to attain national financial inclusion targets, launched in April 2013 and commended by the Alliance for Financial Inclusion and the G20 Finance Ministers. The activities supported by FISF have the objective of stimulating private sector financing, knowledge, and innovation in order to promote the adoption of various financial services, such as payments, savings, insurance, and credit, among individuals with low incomes and micro, small, and medium enterprises (MSMEs) that currently lack access to or have limited access to banking services. (World Bank Group, 2022a) Meanwhile, in Malaysia, in response to the Financial Sector Blueprint 2011-2010, the Central Bank of Malaysia (BNM) issued the Financial Inclusion Framework. The introduction of Malaysia's first Financial Inclusion Framework (2011-2020) had resulted in considerable improvements in the accessibility and uptake of basic financial services. Despite progress, some hurdles and problems must be overcome before financial inclusion can be completed. Therefore, the 2nd Financial Inclusion Framework 2023 – 2026 has been established to align with the Financial Sector Blueprint 2022 – 2026. According to the Global Islamic Fintech Report (2022), Malaysia rates first on the Global Islamic Fintech (GIFT) Index, a composite index of 32 indicators across the categories of Islamic Fintech market and ecosystem, talent, regulation, infrastructure, and capital. The index identifies Malaysian jurisdictions most conducive to developing the Islamic Fintech Market and Ecosystem. Financial inclusion is an essential emphasis in the

Bank's developmental responsibility to guarantee that financial services are available to all economic activities, geographical regions, and segments of society. Access to funding, financial services, financial redress, and financial information would be examples of financial inclusion (BNM, n.d).

LITERATURE REVIEW

Financial Technology (Fintech)

FinTech refers to any innovative ideas that enhance financial service processes by proposing technology solutions tailored to specific business situations; these ideas may also create new business models or even entirely new companies (Leong, 2018). Fintech is a new way of performing financial transactions by combining the areas of finance and information technology in a single click. This technology is disruptive in nature because the consumer will no longer traditionally perform banking while brick-and-mortar banking is getting less popular. Fintech is deemed effective and efficient in various ways: economic value, time, energy, cost, productivity and social responsibility (Rahim et al., 2023). The Bali Fintech Agenda and other entities provide a comprehensive definition of financial technology (Fintech) as "advances in technology that have the potential to transform the provision of financial services, spurring the development of new business models, applications, and processes, and products." (The World Bank, 2022).

Islamic Fintech

Islamic Fintech refers to the amalgamation of technological advancements with principles rooted in Islamic finance. This signifies that all products or services within the Fintech domain must adhere to the regulations outlined in the Qur'an and Sunnah, collectively known as Shariah principles. These Shariah factors play a pivotal role in propelling the growth of startups in the Islamic fintech sector. Concurrently, technology plays a significant role in moulding the Fintech industry's landscape, contributing to the evolution of innovative solutions. The regulatory framework surrounding Islamic Fintech is a critical area to navigate, impacting its global outreach and operational strategies. As the industry expands internationally, strategies for growth and investment diversify. A noteworthy outcome of Islamic Fintech's expansion is its potential to foster financial inclusion, thereby addressing broader societal impact (Irfan & Rusmita, 2023). The prevailing trend in the advancement of Fintech pertains to various aspects, including peer-to-peer lending, electronic wallets (E-wallets), cryptocurrencies such as Bitcoin, T- commerce, mobile wallets (M-wallets), and other related areas. (Mohd & Abdul Aziz, 2019). Islamic Fintech encompasses the advantages of enhanced mobile banking capabilities and reduced transaction costs and embodies the crucial principles of transparency and flexibility. These components are pivotal in ensuring adherence to Shariah standards and upholding the Maqasid al- Shariah (Rahim et al., 2023).

Prior studies have demonstrated that the utilisation of e-wallets as a means of conducting electronic transactions for the acquisition of goods or services aligns with the principle of hifz mal. Using e-wallets to conduct digital transactions has garnered significant public approval due to its avoidance of practises associated with riba, gharar, gambling, and exploitation. (Razali et al., 2020). The Advantages of Islamic FinTech include technological advancements to establish an influential channel for fostering economic development, alleviating poverty, and enhancing the overall quality of life in emerging economies. This is achieved through the expansion of financial inclusion, provision of accessible and affordable Shariah-compliant financing, improvement of Zakat and charity management processes, promotion of ethical investment and wealth management practises, enhancement of risk mitigation through Takaful, and facilitation of financial education. (Ajouz & Abuamria, 2023). (including endnotes, references, supporting exhibits and any appendices).

Financial Inclusion

The Central Bank of Malaysia defines Financial Inclusion as “the provision of suitable, affordable and quality financial services to all segments of society and contributes to a balanced and sustainable economic growth and development. Promoting a sound, progressive, and inclusive financial sector” (BNM, 2023). The GPFI’s working definition of “financial inclusion” refers to a state in which all adults of working age have adequate access to the following formal financial services: savings (broadly defined to include transaction accounts), payments, credit, insurance, and investments. In cases where there is access but limited or no usage by financially excluded and underserved customers, it is possible that formal products and providers do not offer customers a better value than informal products and providers. (GPFI, 2022). The 2010 G20 Principles for Innovative Financial Inclusion spurred initial efforts and policy actions to promote financial inclusion. Digital finance typically refers to a mode of finance utilising digital technology that traditional financial institutions and Internet companies use to provide financing, payment, investment, and other new financial services (Jia & Wang, 2022). Manyika et al. (2016) define digital finance as financial services delivered via mobile phones, personal computers, the internet, or cards linked to a secure digital payment system provided by FinTech companies and innovative financial service providers (Manyika et al., 2016).

Digital finance and financial inclusion have multiple benefits for financial services users, digital finance providers, governments, and the economy, such as increasing access to finance among the poor, reducing the cost of financial intermediation for banks and Fintech providers, and increasing aggregate government spending (Ozili, 2018). The capacity of digital approaches to expand access to financial products and services efficiently and effectively is especially crucial for marginalised individuals who lack adequate financial support. The realm of digital finance and financial inclusion reduces costs and facilitates the expansion of reach and scale in the delivery of financial services, playing a crucial role in the realisation of universal, comprehensive financial inclusion. Digital financial inclusion facilitates streamlined engagement in economic endeavours by facilitating seamless interconnection among economic participants. This increased financial inclusion reduces poverty and improves resilience, resulting in improved livelihoods for marginalised groups such as women, youth, micro, small, and medium-sized enterprises (MSMEs), and displaced populations (GPFI, 2022).

Linkage of Fintech and Financial Inclusion

Fintech is crucial in enhancing national financial inclusion. Furthermore, promoting financial inclusion can contribute to advancing and growing fintech products and services (Kijkasiwat, 2021). Islamic FinTech plays a significant role in enhancing financial inclusion by providing a source of funding for undeveloped sectors, including agriculture and small and micro-enterprises (Hudaefi, 2020). Islamic social finance techniques, including zakat, sadaqah, waqf, Islamic microfinance, and micro takaful models, have been found to have a beneficial influence on promoting financial inclusion (Alshater et al., 2022). According to Tok and Heng (2022), Fintech exhibits a stronger positive link with digital financial inclusion when compared to conventional indicators of financial inclusion. Islamic Fintech has experienced unprecedented growth in recent years, partly due to an emphasis on financial inclusion and a commitment to moral and Shariah-compliant business practices. With their strong growth, it is likely that these trends will continue to influence the sector as Islamic Fintech companies strive to increase access to financial services for underprivileged groups while maintaining high standards of corporate governance (Qudah et al., 2023).

Islamic FinTech utilises technological advancements to establish an influential channel for fostering economic development, alleviating poverty, and enhancing the overall quality of life in emerging economies. This is achieved through the expansion of financial inclusion, provision of accessible and cost-effective Shariah-compliant financing, simplification of Zakat and charity management, promotion of ethical investment and wealth management, enhancement of risk mitigation through Takaful, and promotion of financial literacy. (Ajouz & Abuamria, 2023).

The research revealed the possibility of integrating FinTech into Islamic finance to support the unbanked population and small and medium-sized enterprises. Additionally, the incorporation of FinTech in Islamic finance is expected to contribute to the government's efforts to enhance financial inclusion (Alshater et al., 2022). As Iman (2018) showed, FinTech innovation has helped impoverished nations. Studies were concerned with the realisation of financial inclusion for people with low incomes and the building of new financial ecosystems to improve customer satisfaction. The most common regions studied were Asian nations and the EU (Takeda & Ito, 2021).

METHODOLOGY

The methodology employed in this study involved a qualitative approach, drawing from diverse sources, including the Central Bank of Malaysia

Financial Inclusion Framework 2023-2026, official reports on Fintech, the Bank Negara Malaysia website, and relevant journal articles concerning Fintech and Islamic Fintech. Through a comprehensive analysis of these materials, the study aimed to uncover insights into the strategies outlined in the Financial Inclusion Framework. By examining official reports and the central bank's website, the research aimed to understand the landscape surrounding Fintech in Malaysia comprehensively. Additionally, the study sought contextualise these strategies within the broader global and Islamic finance perspectives by delving into scholarly articles related to Fintech and Islamic Fintech. This qualitative approach enabled a holistic exploration of the evolving Fintech ecosystem in Malaysia, its alignment with financial inclusion goals, and its implications for both conventional and Islamic financial sectors.

RESULTS AND DISCUSSION

Overview of Islamic Fintech in Malaysia

Islamic fintech landscape in Malaysia

Based on the Global Islamic Fintech Report 2022 Global Islamic Fintech Report 2022, Malaysia has achieved the top position in the Global Islamic Fintech (GIFT) Index. This comprehensive index encompassed 32 variables spanning many aspects, such as the Islamic Fintech industry and ecosystem, talent pool, regulatory framework, infrastructure, and capital availability. The ranking serves to emphasise the nations that provide the most favourable conditions for the development and expansion of the Islamic Fintech Market and Ecosystem within their respective legal frameworks. (Refer Figure 1)

Figure 1: Top 20 Countries by GIFT Index Scores
(Sources: Global Islamic Fintech Report 2022)

As shown in Figure 2, the Islamic Fintech sector in Malaysia exhibited similarities to the Fintech industry since it had distinct segments with established companies operating within each segment. The Malaysian landscape in the field of Islamic Fintech had a notable concentration in the areas of payment systems, remittance services, and foreign exchange transactions. Subsequently, the pursuit of trade and investing ensued. There were a considerable number of unexplored prospects within the Malaysian market for Fintech entities operating in the domains of personal finance management, Islamic enablers, and robo advisors. The consideration of shariah compliance is essential in the TakaTech industry to ensure the adherence of Takatech to Islamic principles, as it is a part of the broader domain of Islamic Fintech.

***Startups without a Fatwa for their product(s)**

Figure 2: 48 Islamic Fintech companies as of April 2022

(Sources: MDEC (2021), Islamic Fintech Dialogue Series 2021)

Malaysia Digital Bank

BNM has announced the five successful applicants for digital bank licenses, as authorised by the Malaysian Minister of Finance. The 29 applications received by BNM were evaluated entirely per section 10 (1) of FSA and IFSA [1], which required BNM to consider all the factors in Schedule 5 of the Acts and other pertinent policy requirements. Character and integrity of applicants, nature and sufficiency of financial resources, efficacy and feasibility of business and technology plans, and the capacity to meaningfully address financial inclusion gaps are among the evaluation criteria. Based on consistent evaluations of each assessment criterion, applications were evaluated on their individual merits and in comparison, to other applications. This horizontal evaluation was based on the evaluation criteria applied to all applicants to ascertain each application's relative efficacy and identify successful applicants. Two of the five successful applicants had been granted licences under the Islamic Financial Services Act 2013 (IFSA), while the others had been granted licences under the Financial Services Act 2013 (FSA). The five consortiums that were granted digital banking licenses are detailed in Table 1.

Table 1: Consortium Granted Digital Banking Licensed

	List of Digital Banking Licensed
Financial Services Act 2013 (FSA)	• Consortium of Boost Holdings Sdn Bhd and RHB Bank Berhad • A consortium led by GXS Bank Pte. Ltd. and Kuok Brothers Sdn Bhd • A consortium led by Sea Limited and YTL Digital Capital Sdn Bhd
Islamic Financial Services Act 2013 (IFSA)	• A consortium of AEON Financial Service Co., Ltd., AEON Credit Service (M) Berhad and MoneyLion Inc. • Consortium led by KAF Investment Bank Sdn Bhd

While there may exist certain resemblances between the financial goods and services provided by traditional banks and digital banks, the latter's digital infrastructure has distinct benefits in terms of speed, affordability, convenience, and consumer engagement (The Star, 2022). Both successful Islamic digital banking licence applicants had partnered with Fintech companies and utilised their expertise for their Islamic digital bank (Hussin, 2022). The consortium, headed by KAF Investment Bank, consisted of three key entities. Firstly, Carsome is recognised as Southeast Asia's largest integrated car e-commerce platform. Secondly, MoneyMatch, a company operating in the international payment sector, offers fully digital remittance services. Lastly, Jirnexu is renowned for its digital financial marketplace, RinggitPlus (KAF Investment Bank Berhad, 2022). Meanwhile, aAccording to a report by Business Today (2022), AEON Financial Service Co. Ltd. and AEON Credit Service (M) Berhad (AEON) had formed a partnership with MoneyLion, a comprehensive digital platform. This collaboration aimed to establish the Islamic digital bank as a prominent player in the industry, using advanced technologies such as artificial intelligence, data analytics, and technological solutions.

Financial Inclusion

Financial inclusion, a specialised domain within the financial industry, has garnered significant attention from startups, regulators, venture investors, and established financial institutions in developed and developing nations. Financial inclusion is the limited availability and utilisation of financial services that cater to the specific needs of individuals, such as payment options, savings accounts, credit facilities, and insurance coverage, all delivered responsibly and feasibly. Financial inclusion may be conceptualised as a significant driver for two primary reasons: firstly, it plays a crucial role in alleviating extreme poverty and promoting economic growth; and secondly, it serves as a catalyst for the advancement of the digital economy by providing access to financial services (Prasad, 2019). Diverse measures have been implemented by policymakers in Asian nations to expand access to financial services for those excluded from the financial sector (Ratnawati, 2020) According to the Central Bank of Malaysia (2023), seven (7) policy objectives for the Financial Inclusion Framework (2023-2026) have been determined to achieve financial inclusion in Malaysia. (Refer to Table 2). This strategy addresses several societal groups that require attention to prevent exclusion from the present financial system.

Table 2: Policy Objectives of Financial Inclusion Framework 2023-2026

Num	Financial Inclusion Objectives	Explanation
1.	Expand financial access for the “last frontier.”	• Enhance the role of agent banks and mobile banks. • Support the transition to digital financial services and build cash-lite communities in remote and underserved areas. • Promote greater interoperability of financial services in underserved areas.
2.	Promote secure and inclusive digital financial services	• Promote accessible, affordable and convenient digital payments • Widen provision and usage of e-remittance services, particularly for SMEs and migrant workers • Promote digital insurance/takaful that leverages technology to improve quality and affordability • Ensure smooth operationalisation of digital banks as a catalyst for financial inclusion
3.	Enhance the SME financing ecosystem	• Improve access to diversified funding sources to encourage greater supply of and income-generating activities • Facilitate ‘second chance’ for non-viable borrowers • Enhance support for microenterprises and informal businesses to move up the value chain
4.	Improve access to and usage of risk protection	• Enhance availability and accessibility of more diverse micro insurance/micro takaful offerings • Increase consumer awareness and understanding of risk protection for households and businesses

5.	Strengthen financial institutions' role and capabilities in promoting financial inclusion	• Improve alignment of the industry's efforts with inclusive finance goals • Improve access to data on profiles, needs, usage, and behaviour of the unserved and underserved • Review guidelines for Basic Banking Services • Facilitate greater collaborations and capacity building between Development Financial Institutions (DFIs) and Financial Institutions (FIs) with other stakeholders • Ensure proportionate regulatory approach for DFIs to enhance capacity to sustainably deliver developmental impact • Pursue regulatory reforms to strengthen consumer protection • Enhance support towards greening finance and financing green • Integrate social finance into the financial ecosystem to improve access to funding for segments that face challenges in accessing commercially driven finance
6.	Improve targeted support for the vulnerable segments	• Facilitate the provision of appropriate funding/ financing and capacity building for social impact businesses and co-operatives that support the well-being of the vulnerable segments • Enhance policy and regulations to ensure vulnerable consumers are treated fairly by financial service providers • Policy
7.	Equip consumers with improved financial capabilities	• Collaborate with the Financial Education Network (FEN) to drive national collaboration on financial education initiatives by expanding strategic partnerships • Collaborate with FEN to enhance the Programmatic Roadmap to ensure effective implementation and monitoring of the National Strategy for Financial Literacy Scale up targeted engagement measures to elevate financial literacy and inclusion

Sources: Central Bank of Malaysia, (2023) Financial Inclusion Framework Strategy Paper (2023- 2026)

In response to the Blueprint's request for improved guidance on how financial institutions can identify "unserved" and "underserved" segments, the BNM provides six guiding characteristics:

1. Physically challenging to reach given geographic accessibility;
2. Unable to conduct digital transactions or adopt digital solutions due to a lack of digital literacy, capability or connectivity;
3. Struggle to obtain financial services given their risk profiles;

4. Struggle to access financial products due to information asymmetry or concerns on commercial viability, particularly in new growth areas;
5. Are likely to be more vulnerable due to personal circumstances, including changes in personal circumstances, exposing consumers to a greater risk of experiencing injury and/or
6. Financial illiteracy gaps impede the effective adoption and meaningful use of financial products and services

Linkages of Islamic Fintech and Financial Inclusion

Empowering SMEs through Islamic fintech

Since Malaysia is predominantly a nation with a Muslim population, the emergence of Islamic Fintech holds considerable potential as a platform that can offer financing solutions that are both economically viable and convenient while also adhering to Shariah principles in terms of the lenders. Moreover, these fintech solutions can foster financial inclusion and promote economic empowerment for the borrowers. The problem of funding and financial access has posed significant challenges for several Malaysians, encompassing both retail aspects pertaining to individual and home consumers and the business sector encompassing micro, small, and medium-sized companies (MSMEs). While the issue of accessibility, particularly in terms of geographical location, may not pose a significant challenge for our nation, the field of Fintech possesses a distinct advantage in terms of providing comfort and simplicity of use, as seen and experienced by consumers. The domestic banking industry is currently undergoing a process of downsizing and cost reduction through various measures such as staff reassignments and branch closures. As a result, the issue of accessibility is emerging as a practical concern, which can be addressed through the utilisation of digital banking services (The Sun Daily,2023). In Malaysia, branch closures are also anticipated. According to projections, it is anticipated that Malaysia will have a total of 567 closures over the next ten years. This is expected to result in a decline of around 23% in physical branches, reducing the count from 2,467 in 2020 to around 1,900 by the year 2030 (The Edge Malaysia, 2021). In addition, in accordance with its strategic objectives to enhance its digital banking presence and minimise its physical branch network, HSBC Bank Group has implemented the closure of 13 bank branches in Malaysia by the year 2021 (Ringgit Plus, 2021)

Digitalisation is also a prerequisite to remaining competitive in a world that is constantly transformed by technology, from the way one can now enjoy their entire shopping (e.g. retail automation) or dining experience (i.e. robotic restaurants) without a single human employee to the way one can now instantaneously communicate with another despite the distance (including topographical barriers). Digitalisation enables businesses to innovate solutions and achieve efficiency. One of the biggest hurdles standing in the way of widespread digital adoption among business owners in Malaysia is the financing costs associated with all the hardware and software. (The Sun Daily,2023). According to the Business Digital Adoption Index (BDAI) via Malaysia Digital Economy Corporation (MDEC), (2022), reveal that the aggregate index score of 2.1 for Malaysia indicates that digital adoption is “Progressing” among Malaysian businesses. Technology is an area that requires attention. Manufacturing and service industries are more digitally mature due to their reliance on and use of digital tools, processes, and data.

The Securities Commission of Malaysia (2014) had defined ECF as an innovative fundraising approach that has emerged, enabling small firms and startups to get financing through small equity investments from a diverse pool of investors. This method utilises web portals to ease and streamline these investment transactions. Equity-based crowdfunding (ECF) is emerging as an increasingly important source of entrepreneurial financing (Kshetri, 2018). Meanwhile, the Securities Commission of Malaysia explained the concept of Peer-to-Peer (P2P) Financing on their website. The Peer-to-Peer (P2P) operator enables organisations or firms to secure funding from consumers and sophisticated investors by utilising an internet-based platform.

Given that the fundamental aim of implementing market-based financing is to foster the development of small enterprises, stimulating and advancing economic growth, it follows that peer-to-peer (P2P) operators are prohibited from facilitating individuals seeking personal financial assistance. Investors have the opportunity to participate in either an investment note, or an Islamic investment note through the registered P2P platform in SC. Enterprises or corporations issue these notes for a specific duration, and investors anticipate a predetermined financial return. Some Islamic fintech firms are involved in microfinance services through equity crowdfunding and Peer to Peer (P2P) Lending, as seen below:

1. **MADCash**
   The MADCash initiative seeks to offer micro-funding opportunities to women belonging to the B40 category who are in urgent need of financial support to establish or enhance a microenterprise. This programme serves to generate supplementary income for their households. The MADcash website facilitates the opportunity for people and groups to contribute to the MADcash fund. This fund is then allocated to eligible women belonging to the B40 category in the form of interest-free micro-loans. The interest-free loan will be disbursed in the form of weekly payments for up to 10 months.

2. **microLEAP**
   microLEAP is a Malaysian P2P (Peer-to-Peer) financing platform that focuses on the microfinance sector. It was established in 2018 and given "Go-Live" permission by the Securities Commission Malaysia (SC) in October 2019. microLEAP is an online platform that offers both Islamic and conventional alternative financing for micro-enterprises, from as little as RM 1,000 up to as much as RM 50,000, funded by P2P Investors. As of August 2023, microLEAP fully funded 287 projects, with RM75,435,300.00 financing disbursed and a 1.27% default rate.

3. Capbay
   Capbay is a financial technology solution for the supply chain. They offer clients all of the benefits of technology without the associated capital expenditures and maintenance costs. A comprehensive P2P (Peer-to-Peer) funding platform designed for capital growth. They connect businesses with various liquidity providers to sustainably fulfil their funding requirements. In the meantime, SME cash flow can be unlocked by factoring and moneylending services. Capbay liberates capital so that businesses can use it to establish prosperous enterprises. As of August 2023, Capbay has fully funded RM2,500,000.00 towards 20+ industries and 1600 underserved SMEs.

The methods used by P2P Financing to increase financial inclusion include offering digitally based financial services, both in the form of websites and mobile applications that are easily accessible to all members of the public; providing the necessary facilities in order to apply for

Sharia-based financing; collaborating with various business groups, such as e-commerce and e- procurement in order to provide Sharia financing to SMEs; and working with digital ecosystems, both established and new (Dwijayanti et al., 2022). This is in line with the policy objectives of BNM Financial Inclusion Framework policy objective number 2: Promote secure and inclusive digital financial services, and Policy objective number 3: Enhance the SME financing ecosystem.

Addressing the unbanked population through the utilisation of Islamic Fintech solutions

According to the Federal Deposit Insurance Corporation (FDIC) (2019), the term "unbanked" refers to households in which no individuals own a checking or savings account with a bank (such as a commercial or community depository) or credit union. With most of the population unbanked or underbanked, essential financial services that provide credit access are largely inaccessible to those who require it the most. (The Sun, 2023) Thus, digitalisation for economic empowerment is also a problem of financial inclusion. The rapid integration of Fintech has increased the importance of banks as principal financial institutions for individuals with limited financial resources. (Adbi & Natarajan, 2023). BMM has recently established a total of five (5) authorised digital banks in 2022. Among these licenced digital banks, it is noteworthy that two (2) comply with Shariah principles (Refer Table 1). Global adoption of digital banking has the potential to save costs while increasing efficiency and transparency. New avenues for financial inclusion have also been made possible by digital banking. Digital banks can reach those who are often underserved (underbanked) as internet connectivity extends to isolated areas of the globe. These advantages have contributed to the popularity of digital banks in several nations (Gong & Hollins-Kirk, 2022).

As a condition of the licence application, digital banks must provide banking goods and services to underserved or unserved markets and solve the country's financial inclusion gaps. Digital banks are viewed as the primary solution for advancing financial inclusion. In The Edge (2022), Dr Nafis Alam, Professor and Head of the School of Business at Monash University Malaysia, stated, "Digital banks that use data insights can offer personalised financial services based on customer and business needs. Digital banks are expected to fill the credit gap of Malaysians, especially those in the B40 segment. Moreover, digital banks that use the power of data analytics can create a proper risk infrastructure focused on advanced credit models on top of leading-edge non-financial risk prevention. This would allow digital banks to provide responsible financing by offering access to funding with limited to no collateral and transparent pricing with no hidden fees or penalties." While a decline in the underserved population benefits financial inclusion, the concept of financial inclusion should go beyond access to financial products (The Edge, 2022). Digital bank initiative is in line with the Policy Objective Financial Inclusion Number 2 and Number 5 (Refer Table 1) to ensure smooth operationalisation of digital banks as catalysts for financial inclusion and improve access to data on profiles, needs, usage, and behaviour of the unserved and underserved.

Islamic Fintech serving a vulnerable population

The vulnerable group is a population that needs focused consideration within the scope of financial inclusion. Assistance is required to address their financial needs and ensure the continuance of their livelihood. Fintech plays a significant role in assisting this vulnerable demographic, such as in micro-takaful, zakat, and waqaf. The integration of Fintech and micro-Takaful has the potential to enhance financial inclusion on a large scale significantly. Moreover, this amalgamation has other advantages, such as enhanced creativity, establishment of a structured economic system, increased cost and time effectiveness, and safeguarding of consumer rights, among others. The potential for development, diversification, and support of the real economy may be observed using the value-based concept of microtakaful (Ashfaq et al., 2021). In the Malaysian context, it should be noted that while MDEC has identified six TakaTech businesses operating in the field of Islamic Fintech, their adherence to sharia principles has yet to be verified or officially acknowledged. Companies such as GrabInsure provide adaptable and inventive solutions to meet the insurance requirements of individuals on a daily basis. The company offers a technologically advanced and secure platform that enables users to obtain insurance coverage at their convenience (Grab.com). In 2022, the Malaysia Takaful Association (MTA) started collaborating with the Fintech Association of Malaysia (FAOM) to accelerate the use of financial technology and digital innovation among takaful industry participants. (RTM News, 2022). Takaful providers should consider establishing collaborations with Fintech and businesses to enhance their product offerings and elevate consumer experiences. By doing so, they may foster innovation and adopt novel business models in a shariah-compliant manner.

Furthermore, the growing integration of Islamic social financing throughout the fintech sector is highly encouraging. Certain Islamic Fintech companies provide digital platforms that facilitate the practice of waqf. For instance, The Waqf Chain is the signature product of Finterra companies. It was created to revitalise the Islamic Social Economic system, namely Waqf, for the digital era by utilising blockchain technology. The Waqf Chain, with essential regulatory compliance incorporated into its goods and services, tackles fundamental difficulties not just in Waqf administration but may also be utilised for the development of Sadaqah and Zakat utilising blockchain technology. The platform incorporates options for Campaign management, Capital raising, Waqf management, Asset management, and effect Reporting to unlock the full value of endowed assets for the benefit of both stakeholders and society at large (Finterra.org, n.d). Other than that, in Zakat Horizon, through mobile payment and e-wallet services, the Zakat management centre has collaborated with a few e-wallet providers to provide in-app features for Zakat payment (Nordin et al., 2021). Due to the religious matters under the State Islamic Religious Council, the collaboration with e-wallet providers between one state to another might be different. For example, in Selangor, Zakat Collection Centre (Pusat Pungutan Zakat, PPZ) has enabled six (6) e-wallet in apps feature for zakat in e-wallet. The e-wallet involved is Boost, Tulus, Shopee, GoPayz, MAE and The Noor (as of August 2023). This demonstrates that the presence of Fintech infrastructure provides opportunities for an increased number of Muslims to practice issuing zakat and waqf. The expeditious attainment of outcomes through this social finance instrument will contribute to greater assistance provided to marginalised people. This aligns with the Financial Inclusion Policy Objective number six (6), to Improve targeted support for the vulnerable segments, and Financial Inclusion Policy Objective number four (4), to Improve access to and usage of risk protection.

Enhancements in financial literacy, particularly within marginalised populations

Fintech is emerging as a new tool for increasing financial awareness. The elimination of (sometimes untrustworthy) intermediaries and the fact that practically all activities can now be completed using a user-friendly instrument - the smartphone - is closing the gap between the world of finance and many young consumers. According to studies conducted by the World Bank and the OECD, a lack of financial literacy impedes the adoption of financial goods. Fintech eliminates this barrier (Forbes 2022). Previous studies conducted by the Khazanah Research Institute have indicated that elderly individuals who lack familiarity with technology, specifically in online payments, encounter difficulties in accessing suitable educational resources, assistance, and support. Individuals are vulnerable to cases of financial fraud and fraudulent schemes. Enhancing both digital and financial literacy is crucial to promoting financial inclusion (Gong & Hollins-Kirk, 2022). By leveraging their reach and technology, firms can provide financial education to marginalised populations who lack access to traditional financial education resources. Using data and analytics, fintech companies can tailor financial education to the specific requirements of each user.

In the global context, some countries have launched financial literacy apps, as in the United States of America, financial literacy apps have been introduced to kids to empower their financial education. Greenlight is an app and a finance education tool that empowers parents to raise financially savvy children. In addition to financial knowledge, the app provides banking and investing options for children and teenagers. It also provides debit cards for youngsters. Meanwhile, the Zogo app simplifies complex financial subjects into smaller, more enjoyable segments. It has also worked with over 175 financial institutions in the United States to reward app users for learning about money (Fifinance.com n,d). However, in the context of Malaysia, comprehensive applications that promote financial literacy still need to be improved. For example, the Touch ‘n Go eWallet Innovation Hub and Touch ‘n Go Z-Wallet software were released by KidZania Kuala Lumpur as part of a project undertaken by TNG Digital Sdn Bhd. The unique downloadability of the KidZania Kuala Lumpur app allows children visiting the renowned edutainment centre to engage in currency exchange using their personal mobile devices conveniently. Alternatively, for those without access to a mobile phone, the facility offers the option to borrow a phone for the purpose of conducting transactions using KidZos, the official currency of KidZania. Children will acquire knowledge in financial literacy by utilising their earned KidZos through the smartphone application or by making contactless payments at designated terminals within KidZania Kuala Lumpur (Medium.com, 2019). Therefore, Islamic fintech firms in Malaysia need to intensify activities and innovation programs related to financial literacy. Thus, it will facilitate financial inclusion in Malaysia in accordance with BNM's desire to elevate financial literacy in Policy objective 7, which is to equip consumers with improved financial capabilities.

CONCLUSION

This study sought to analyse the roles played by Islamic Fintech in promoting financial inclusion. Additionally, this research provided a qualitative contribution that can benefit academics, participants in the Islamic market, and policymakers. It shed light on the significant influence of relationships related to Islamic Fintech on the objectives outlined in the Financial Inclusion Framework. Consequently, numerous untapped opportunities await exploration by industry stakeholders, with a particular emphasis on the function of Islamic Fintech in addressing the needs of vulnerable segments, communities lacking access to banking services, those residing in underserved areas, and the effective promotion of financial literacy through Islamic Fintech. In the future, it is recommended that studies also assess the empirical efficacy of Islamic Fintech in enhancing financial inclusion in Malaysia, thereby extending financial well-being benefits to a larger population.

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