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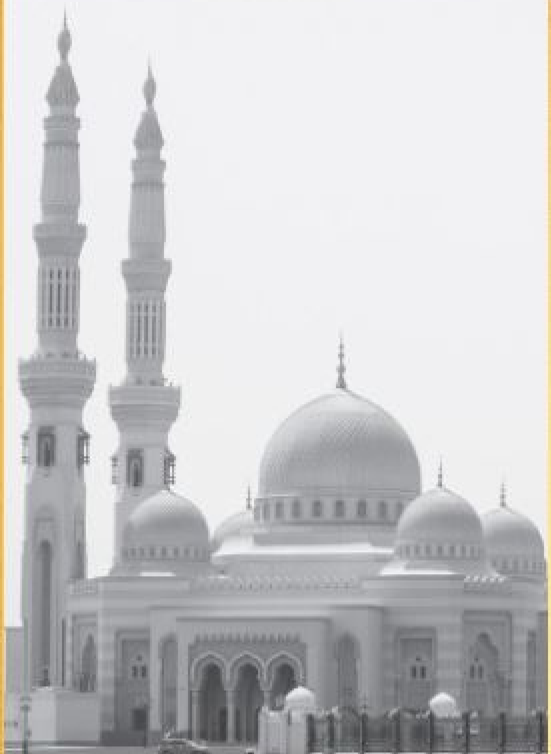

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الكشف عن إمكانات النظام البيئي للتكنولوجيا المالية الإسلامية في الأسواق الناشئة

UNVEILING THE POTENTIAL OF THE ISLAMIC FINTECH ECOSYSTEM IN EMERGING MARKETS[1]

موسى عجوز

جامعة فلسطين الأهلية

Mousa Ajouz

Palestine Ahliya University

فايز أبو عمرية

جامعة فلسطين الأهلية

Fayez Abuamria
Palestine Ahliya University

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الملخص

تجمع التكنولوجيا المالية الإسلامية بين المبادئ المالية الإسلامية والتكنولوجيا المتقدمة، مما يقدم نهجًا فريدًا للشمول المالي في الأسواق الناشئة. هدفت هذه الدراسة إلى فحص الجوانب الحاسمة للنظام البيئي للتكنولوجيا المالية الإسلامية وتقديم خارطة طريق لأصحاب المصلحة؛ لتحسين الشمول المالي في هذه الأسواق. استُخدمت منهجية بحثية نوعية، تستخدم المقابلات شبه المنظمة، التي نُظِّمَتْ بناءً على أبعاد نظام التكنولوجيا المالية، والتي تشمل المواهب، والطلب، والسياسة، ورأس المال، لتحليل النظام البيئي للتكنولوجيا المالية الإسلامية في الأسواق الناشئة. وجدت الدراسة أنه من الضروري تحسين تنمية المواهب، والمنتجات المركزة على العملاء، والسياسات الحكومية، وإستراتيجيات الاستثمار؛ لتعزيز النظام البيئي للتكنولوجيا المالية الإسلامية. وتشير نتائج الدراسة إلى وجود طلب قوي على المنتجات المالية الإسلامية المبتكرة في الأسواق الناشئة، مع معدلات قبول وتبنٍ عالية. ومع ذلك، هناك عدة جوانب تحتاج إلى تحسين، بما في ذلك تطوير المنتجات والخدمات المحلية المناسبة للأسواق الناشئة، وبناء الثقة والمصداقية، وتعزيز الشراكات بين المؤسسات المالية الإسلامية التقليدية وشركات التكنولوجيا المالية الناشئة. تسلط الدراسة الضوء أيضا على أهمية السياسات الحكومية، والقواعد واللوائح، والاستثمارات الرأسمالية في تعزيز نظام بيئي صحي للتكنولوجيا المالية الإسلامية في الأسواق الناشئة. ويكمن الأصل في التحليل الشامل للمنظورات المتنوعة لأصحاب المصلحة المختلفين من خلال تقديم رؤى أصلية حول النظام البيئي للتكنولوجيا المالية الإسلامية في الأسواق الناشئة ودوره المحتمل في تعزيز الشمول المالي.

Abstract

Islamic FinTech combines Islamic financial principles with advanced technology, offering a unique approach to financial inclusion in emerging markets. This study aimed to examine the critical aspects of the Islamic FinTech ecosystem and provide a roadmap for stakeholders to improve financial inclusion in these markets. A qualitative research methodology was employed, using semi-structured interviews, which are structured based on the FinTech ecosystem dimensions, which include talents, demand, policy, and capital, to analyze the Islamic FinTech ecosystem in emerging markets. The study found that improvements are needed in talent development, customer-centric products, government policies, and investment strategies to enhance the Islamic FinTech ecosystem. The study's results indicate a strong demand for innovative Islamic financial products in emerging markets, with high acceptance and adoption rates. However, several aspects need improvement, including developing locally tailored products and services suitable for emerging markets, building trust and credibility, and fostering partnerships between traditional Islamic financial institutions and FinTech startups. The study also highlights the importance of government policies, regulations, and capital investments in nurturing a healthy Islamic FinTech ecosystem in emerging markets. The originality lies in the comprehensive analysis of the diverse perspectives of different stakeholders by providing original insights into the Islamic FinTech ecosystem in emerging markets and its potential role in promoting financial inclusion.

الكلمات الدالة: التكنولوجيا المالية الإسلامية، التمويل الإسلامي، النظام البيئي، الأسواق الناشئة.

Keywords: Islamic FinTech, Islamic Finance, Ecosystem, Emerging Markets

1.0 Introduction

Islamic financial technology (FinTech) is an innovative concept that merges Islamic financial principles with advanced technology and offers a unique approach to financial inclusion in emerging markets.

Rooted in values of justice, transparency, and ethical conduct, Islamic finance prohibits practices deemed harmful to society. These values align well with financial inclusion goals, which seek to provide access to financial services for those typically excluded from the financial system. By uniting entrepreneurs, investors, regulators, and consumers, the FinTech ecosystem is pivotal in promoting access to financial services for underserved communities while adhering to Islamic finance principles (Alshater et al., 2022).

Islamic FinTech harnesses technology to create an impactful conduit for economic growth, poverty reduction, and quality of life improvement in emerging markets. It accomplishes this by broadening financial inclusion, offering accessible and affordable Shariah-compliant financing, streamlining the management of Zakat and charity, advocating for ethical investment and wealth management, strengthening risk mitigation through Takaful, and advancing financial education. This, in turn, fosters an environment that champions the growth of small businesses and entrepreneurs, promotes prudent investment behaviour, and cultivates financial resilience among underprivileged communities (World Bank, 2020). Financial inclusion, an integral part of this approach, aims to extend an array of financial services like savings, loans, insurance, and payment systems to individuals and communities who are currently excluded from the financial landscape. This initiative holds particular significance in emerging markets, serving as a catalyst to combat poverty, stimulate economic growth, and uplift the overall quality of life. However, the path to achieving financial inclusion in these markets can be fraught with challenges, including inadequate infrastructure, limited technology access, and prevailing distrust in financial institutions (Ajouz et al., 2023; Zulkhibri, 2016). It is, therefore, imperative that while leveraging Islamic FinTech to maximize impact, considerations for regulatory compliance, inclusivity, and adherence to Islamic financial principles are diligently maintained.

The lack of infrastructure is a primary barrier to financial inclusion in emerging markets. Many communities lack essential financial services due to an absence of physical infrastructure, such as banks and automated teller machines (ATMs). Building such infrastructure in remote areas can be cost-prohibitive (Asuming et al., 2019; Kaligis et al., 2018). Additionally, access to technology, including smartphones and computers, remains limited in many communities, making it difficult for individuals to utilize available financial services (Ajouz & Abuamria, 2022; Gershenson et al., 2021). Distrust in financial institutions further hinders financial inclusion. A history of corruption and mismanagement in emerging markets has led to widespread scepticism, making it difficult for financial institutions to establish relationships with potential customers (Alshater et al., 2022). Islamic FinTech can play a pivotal role in advancing financial inclusion in developing countries by fostering trust and emphasizing justice, transparency, and morality. Islamic FinTech can overcome infrastructure limitations and deliver financial services to underserved populations by leveraging mobile technology. The widespread adoption of mobile technology, even in underserved areas, provides an ideal platform for Islamic FinTech services. Through user-friendly mobile applications, customers can access various Shariah-compliant financial services. The Islamic FinTech ecosystem, consisting of entrepreneurs, investors, regulators, and consumers, facilitates the growth of this industry (Mohamed & Ali, 2018).

The collaboration among these stakeholders provides a strong foundation for Islamic FinTech companies to expand their offerings and reach new clients. With investor support, these firms can develop solutions tailored to the needs of underbanked communities. Regulators ensure compliance with legal and ethical standards, fostering consumer trust and encouraging the use of Islamic FinTech services (World Bank, 2020). Moreover, the availability of these services can promote financial literacy, access, and poverty reduction in emerging markets, making Islamic FinTech a vital tool for global financial inclusion (Dawood et al., 2022; Muryanto, 2022).

As the Islamic FinTech sector grows, the collaboration between startups, investors, and regulators will drive industry innovation, increasing demand for these services. By fostering a favourable regulatory environment that balances innovation with consumer protection, Islamic FinTech can contribute to economic development and stability by providing Sharia-compliant financial services and building consumer confidence. Ultimately, Islamic FinTech offers a promising solution for financial inclusion in emerging economies, helping to alleviate poverty and foster economic growth (Emara & Moheildin, 2021; Rahman et al., 2023). While Islamic FinTech has the potential to expand financial inclusion significantly, some obstacles remain. These include challenges with digital literacy (Suhasti et al., 2022), access to dependable internet connections (James, 2020), security concerns (Buckley & Webster, 2016), and complicated regulatory regimes (Khanam, 2020). Furthermore, there is a danger of unequal benefit distribution, which might favour urban and affluent communities over rural and underprivileged groups.

The research is structured into five interconnected segments. The subsequent section delves into the literature review, followed by an explanation of the methodology employed to obtain our findings. The ensuing sections showcase the outcomes and analysis, culminating in a strategic plan for participants within the Islamic FinTech ecosystem. The final section highlights the principal findings.

2.0 Literature Review

2.1 Review of FinTech Ecosystem

The rapid development of financial technology has disrupted traditional financial services and reshaped the sector's landscape (Rehman et al., 2022). This systematic literature review analyses the

FinTech ecosystem, its development, the relationship between FinTech startups and incumbents, the role of accelerators, technological innovations, and the impact on financial services. The studies provide diverse perspectives on the evolving FinTech landscape and its implications for traditional financial services, consumers, and regulators.

Collaboration and support from critical actors within the FinTech ecosystem are crucial for the growth and success of FinTech startups. (Svensson et al., 2019) argue that alliances between incumbents and FinTech startups can enhance the legitimacy of both parties and contribute to the overall growth of the ecosystem. Similarly, (Harris, 2021) discusses the emergence of FinTech entrepreneurial ecosystems in London and Singapore, highlighting the role of a single accelerator actor in driving their development. These findings suggest that collaboration and support from critical actors within the ecosystem are essential for the growth and success of FinTech startups.

Addressing regulatory and technical challenges is essential for enabling greater FinTech adoption across different regions (Zheng et al., 2022). The role of financial regulation in managing risks and fostering stability is emphasized (Arkanuddin et al., 2021). Effective regulation and collaboration between traditional financial institutions, startups, and government agencies are vital for the successful development of the FinTech industry (Bouaziz & Sghari, 2021; Lee & Shin, 2018; Senyo et al., 2022; Soon, 2021).

On the other hand, Ünsal et al., (2020) discuss the challenges of designing and developing a FinTech API Gateway, which is crucial for integrating traditional banking systems with innovative FinTech solutions. The role of accelerators in fostering FinTech innovation and growth is significant (Vershinina et al., 2018 and Vovchenko et al., 2019) argue that the development of a sustainable digital financial infrastructure is crucial for ensuring the long-term stability and success of the FinTech ecosystem. This highlights the importance of addressing regulatory and technical challenges to enable greater FinTech adoption across different regions.

The role of information technology in driving innovation is underscored, with information technology playing a critical role in orchestrating resources and processes to efficiently deliver personalized financial services to customers (Mamonov, 2020). Technological innovations like blockchain and the Internet of Things (IoT) can potentially transform traditional financial services (Hudaefi et al., 2023). Chauhan et al. (2022) explore the potential of blockchain and IoT technologies in the insurance industry through a qualitative literature assessment, discussing the potential benefits and barriers to adoption. These studies underscore the potential for technological innovations to transform traditional financial services, including insurance.

The literature reveals a highly interdependent network structure in the FinTech ecosystem and a significant shift in power due to the rapid unbundling of services traditionally offered by incumbents (Basole & Patel, 2018). Different configurations of entrepreneurial culture, demand characteristics, and formal institutions can lead to variations in ecosystem development (Avarmaa et al., 2022). The role of accelerators in fostering FinTech innovation and growth is also very significant. Vershinina et al. (2018) delve into the critical functions of FinTech accelerators, outlining a stage-by-stage procedure for selecting startups for acceleration programs. This highlights the crucial role of accelerators in nurturing FinTech innovation and growth. Söylemez (2020) compares FinTech platforms to the traditional banking system, focusing on the Turkish FinTech ecosystem while Soloviev (2018a, 2018b) discusses the features of the contemporary Russian FinTech landscape, suggesting that FinTech initiatives have not yet led to a radical transformation of the financial sector in Russia. Vovchenko et al. (2019) on the other hand explore the relationship between the FinTech ecosystem and sustainable economic growth, emphasizing the need for a sustainable digital financial infrastructure.

The potential of FinTech to influence entrepreneurial decisions, improve financial inclusion, and transform financial markets is highlighted (Bouaziz & Sghari, 2021; Festa et al., 2023; Lee & Shin, 2018; Mirzaei, 2022; Senyo et al., 2022; Soloviev, 2018a; Soon, 2021). Festa et al. (2023) investigate the influence of FinTech determinants such as crowdfunding, mobile payment, and blockchain on entrepreneurial decisions in Tunisia. They found a positive and significant impact of knowledge, availability, and access to crowdfunding and blockchain on entrepreneurial intention, while mobile payment had a negative and insignificant effect.

In contrast, Soloviev (2018a, 2018b) highlights that FinTech initiatives have not yet led to a radical transformation in the country. This is due to differing perspectives on FinTech among banks and technology. However, the importance of a supportive ecosystem, effective regulation, and collaboration between traditional financial institutions, startups, and government agencies for the successful development of the FinTech industry are emphasized (Arkanuddin et al., 2021; Avarmaa et al., 2022; Basole & Patel, 2018; Castro et al., 2020; Mamonov, 2020).

Despite the abundant works, there are only four articles were found to discuss the FinTech ecosystem in the context of Islamic finance. The articles provide insights into the development of the Islamic FinTech ecosystem, the core elements of the ecosystem, regulatory challenges, and the potential for integrating disruptive technologies such as blockchain. Kail (2023) emphasizes the significance of FinTech in the rapid growth of the Islamic finance industry and provides a historical overview of FinTech and delves into the Islamic FinTech sector's ecosystem and various business models, focusing on areas like blockchain, cryptocurrencies, crowdfunding, and rob-advice. Hudaefi et al. (2023) identify six core elements of the

Islamic FinTech ecosystem: financial customers, FinTech startups, government, technology developers, traditional financial institutions, and fatwa. The authors use text mining and qualitative analysis to study the ecosystem's development in Indonesia, offering insights into its current state and growth potential.

Muryanto (2022) explores the legal challenges associated with regulating and supervising Islamic FinTech, proposing Sharia compliance regulations to address these issues. The study compares the regulatory frameworks of Indonesia, Malaysia, and the United Kingdom, highlighting weak supervision and low Sharia compliance as significant challenges. The author emphasizes the need for supportive regulations, a Sharia Supervisory Board, and standardized Sharia governance to foster a healthy Islamic FinTech ecosystem. In addition to that, Gulrez (2021) investigates the potential of integrating disruptive technologies such as blockchain and cryptocurrencies into the Islamic finance industry. The article argues that the Islamic banking sector needs to embrace these technologies to remain competitive in a rapidly evolving ecosystem. It also raises questions about the current centralized approach in Islamic finance, suggesting that distributed systems using mathematics and cryptography might be a better alternative.

In conclusion, the literature reviewed suggests that FinTech innovation has the potential to disrupt and reshape the financial services landscape. Collaboration and support from critical actors within the ecosystem, addressing regulatory and technical challenges, and developing a sustainable digital financial infrastructure are vital for the success and growth of the FinTech industry. Furthermore, the interdependence of ecosystem actors and conditions, and the need for effective financial regulation in managing risks and fostering stability, are important considerations for policymakers and practitioners alike. Future research could explore the impact of FinTech on specific financial services segments, the role of government and regulatory authorities in shaping FinTech ecosystems, and the potential for international collaboration in FinTech innovation. Additionally, these studies offer valuable insights into the current state of Islamic FinTech and pave the way for future research and development in this field.

2.2 Review of FinTech Ecosystem

2.2.1 Islamic FinTech Talents (Academia, Entrepreneurial, Firms, Startups, and Islamic Financial Institutions)

Islamic FinTech is an emerging sector with immense potential for transforming the financial landscape per Islamic principles. The importance of nurturing and promoting Islamic FinTech talents including academia, entrepreneurs, firms and startups, and Islamic financial institutions – cannot be overstated (Mei et al., 2018). The talents in this sector play a crucial role in developing innovative solutions that cater to the Muslim community's unique needs and contribute to the Islamic financial system's overall growth and sustainability.

Academia is responsible for producing well-informed and skilled professionals who can drive the industry forward by conducting ground-breaking research and sharing valuable insights (Shino et al., 2022). Entrepreneurs, firms, and startups can create innovative products and services that meet the specific requirements of Islamic finance while also pushing the boundaries of technology (Alaassar et al., 2022). Traditional Islamic financial institutions, on the other hand, serve as vital partners, providing the necessary resources and support to ensure the successful implementation of Sharia-compliant solutions (Karim et al., 2022). By working together, these key players can help Islamic FinTech talent flourish, ultimately leading to a more inclusive and diverse financial ecosystem. Therefore, based on this reasoning, the following question is proposed:

Question 1: How can we effectively engage, foster, and sustain Islamic FinTech talents to boost the FinTech landscape in emerging markets?

2.2.2 Islamic FinTech Demand (Government, Clients, Corporates, and Islamic Financial Institutions)

The importance of Islamic FinTech demand, encompassing government, clients, corporates, and Islamic financial institutions, is multifaceted and essential in shaping the future of finance following Islamic principles. Government, Clients, Corporates, and Islamic Financial Institutions are all essential drivers of Islamic FinTech demand.

Governments can use FinTech to improve the efficiency of government services, reduce costs and administrative procedures, and provide more efficient and secure services. Clients, including retail and institutional investors, seek financial products and services that adhere to their religious beliefs, spurring the need for a robust Islamic FinTech ecosystem. Corporations, conversely, require Shariah-compliant financing and investment options for their businesses, leading to an increased demand for innovative solutions (Gurrea-Martínez, 2020; Wu et al., 2023). Islamic financial institutions, comprising banks, insurers, and asset managers, are at the forefront of meeting these diverse needs as they work to design and deliver cutting-edge financial services in line with Islamic principles. By responding to the demand for Islamic FinTech solutions, these key stakeholders contribute to developing a more inclusive, sustainable, and ethical financial system that benefits the Muslim population and the global economy. Accordingly, the following question is proposed:

Question 2: In what ways does the demand for Islamic FinTech contribute to the development of Islamic FinTech ecosystems in emerging markets?

2.2.3 Islamic FinTech Policy (Government and Regulators)

Islamic FinTech policy is a crucial component in the development and growth of the Islamic finance industry, as it sets the framework and guidelines within which these innovative financial services operate. Government and regulatory bodies play a significant role in shaping these policies, ensuring that emerging financial technologies comply with Islamic finance's core principles. Effective policymaking and regulation create a conducive environment for the Islamic FinTech sector, fostering innovation while safeguarding the stability and integrity of the financial system (Van Loo, 2018).

Moreover, sound Islamic FinTech policies contribute to financial inclusion (Lee & Shin, 2018), as they facilitate access to financial services for underserved populations in line with social equity and justice principles. By creating a comprehensive regulatory framework, governments and regulators can ensure that the rapid expansion of the Islamic FinTech sector aligns with the broader objectives of the Islamic financial ecosystem, such as promoting sustainable development and enhancing economic opportunities for all. This ultimately benefits both the Islamic finance industry and the economy at large. Hence, the following question is proposed:

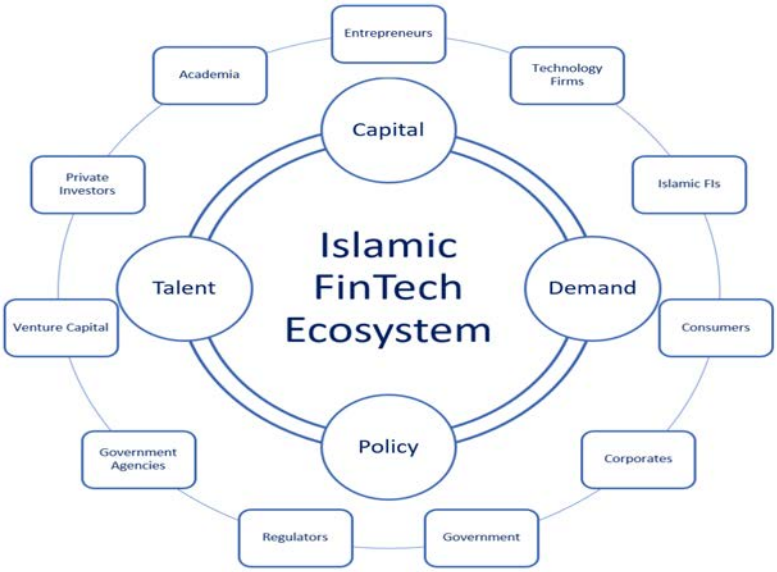
Question 3: In which ways can government and regulations contribute to the growth and improvement of the Islamic FinTech ecosystem within developing markets?

2.2.4 Islamic FinTech Capital (Angel Investors, VC investors, IPO Investors)

Islamic FinTech capital is a critical component in the growth and development of the Islamic finance industry, as it provides the necessary funding for innovative startups and companies to thrive. Angel investors, venture capital (VC) investors, and initial public offering (IPO) investors play a significant role in injecting capital into the Islamic FinTech ecosystem, supporting the creation and scaling of businesses that align with Islamic financial principles. By investing in Shariah-compliant FinTech ventures, these investors help drive the expansion of the industry, contributing to financial inclusion and creating opportunities for economic growth in the markets where they operate (Cumming & Schwienbacher, 2018; Kolokas et al., 2022).

In addition to promoting the growth of individual businesses, the presence of Islamic FinTech investors can attract even more capital to the industry, as their endorsement signals confidence in the sector's potential for growth and profitability. Ultimately, the influx of Islamic FinTech capital is instrumental in propelling the industry forward, creating a robust ecosystem that benefits both market participants and the broader economy. In view of the foregoing, the following question is asked:

Question 4: In what ways does the infusion of FinTech capital facilitate the growth of the FinTech sector in emerging markets?



Source: (Ernst & Young, 2016)

Figure 1: Islamic FinTech Ecosystem

3.0 Methodology

This research applied semi-structured interviews to gather insights into different aspects of the Islamic FinTech ecosystem, including demand, policy, talent, and capital. Respondents were encouraged to share their opinions through open-ended questions using Arabic and English languages. A thematic analysis method was applied to examine the findings. The analyzing process involved selecting, simplifying and coding the data collected into common themes (Miles & Huberman, 1994:57). This involves (1) Preparing transcriptions of the interview record back to back, (2) Reading and understanding the transcripts, (3) Coding the key words of the interview questions and marking the relevant responses, (4) Coding the keywords in the relevant response, (5) Counting the frequency of the keywords in the relevant response, (6) Derive the theme of the response, and (7) Finally, write up the results. A peer review was used to validate the appropriateness of the coding.

A judgment sampling technique was used to investigate the Islamic FinTech ecosystem in emerging markets, selecting participants based on their work experience, field expertise, and qualifications. At least they should have a master's degree and specialize in one or more of the following FinTech, finance, Islamic finance, economics, Islamic economics, and marketing for at least five years; this criterion is somehow similar to Ajouz et al. (2022) . The sample size aimed to encompass all essential aspects of the study, with data saturation reached when no new concepts arose from further interviews. As Gill et al. (2008) suggested, the ideal sample size for studies of this nature typically ranges from six to eight participants. Thus, data sufficiency was achieved after seven interviews (Charmaz, 2014). In total, 213 codes were generated, with 78 codes from the first interview, 64 and 56 codes from the second and third interviews, respectively, and 15 codes from the fourth to seventh interviews (Guest et al., 2006). The decision to cease data collection was based on saturation, signifying that additional data would yield only a little information.

By conducting online interviews via Zoom, researchers effectively collected expert insights, addressed questions, resolved uncertainties, and developed new queries (Bougie & Sekaran, 2019), with seven out of nine participants agreeing to participate. The study spanned multiple emerging markets, representing a variety of economic, social, and political environments. Interviews were structured in two sections, comprising demographic data and a set of semi-structured questions that have been developed in the theoretical framework to ensure comparability. The qualitative approach produced transcripts, which were then analyzed and interpreted for data aggregation.

The study conducted seven interview sessions, and participants' responses were labelled with reference numbers (FT1 to FT7) for easy identification. Interviewees held various positions in their fields, with five having PhD degrees and two holding master's degrees in areas such as FinTech, finance, banking, and marketing. Their work experience spanned 5 to 27 years across teaching, training, financial consulting, entrepreneurship, and research in FinTech and finance. The study pinpointed five main themes derived from the interview findings, which are discussed in subsequent sections.

Finally, researchers used a variety of strategies to reduce potential biases, such as researcher and participant prejudice. A consistent interview methodology and anonymization of replies were adopted to eliminate researcher bias. To manage participant bias, diverse sampling, and thorough coding were used. Although eliminating bias in qualitative research is difficult, these approaches guaranteed it was greatly lessened.

Resource constraints, technological development, and socioeconomic opportunity are the driving force for the circular economy. Digital financial services help businesses and consumers by making operations and transactions easier and helping developing economies grow over time. By increasing productivity, efficiency, and cost savings, digital financial services can help reduce environmental impact; reduce resources, chemicals, and waste; and keep track of, analyze, and measure progress. Digital technology is significant in the circular economy's Reduce, Reuse, Recycle, and Sharing models.

4.0 Results and Discussion

This section presents the study's primary findings from interviews concerning the FinTech ecosystem in emerging markets. The analysis centres on interviewees' viewpoints of the evolving FinTech ecosystem, which lacks a defined vision for stakeholders. The interview method sought to uncover crucial aspects of the FinTech ecosystem to establish a roadmap for stakeholders.

4.1 Islamic FinTech Talents (Academia, Entrepreneurial, Firms, Startups, and Islamic Financial Institutions)

The FinTech industry has the potential to transform Islamic financial services in emerging markets, but several aspects require improvement for Islamic FinTech talents, including academia, entrepreneurs, firms, startups, and Islamic financial institutions, to play a significant role in this change. As per the first interviewee (FT1), several studies highlight an apparent demand for innovative Islamic financial products in burgeoning markets, accompanied by considerable acceptance and adoption rates. The robust demand can be attributed to the alignment of these products with the ethical and moral values of consumers in these regions. These Sharia-compliant offerings effectively respond to the unique needs of these populations, potentially bridging gaps left by conventional financial systems. The actual adoption rates signify that these innovative Islamic financial solutions are being favourably embraced and adeptly addressing the needs of these burgeoning economies.

All interviewees agree that Islamic FinTech talents should concentrate on creating innovative, locally tailored products and services. These include Sharia-compliant banks that offer traditional services while adhering to Islamic principles. Platforms like Wahed Invest present digital halal investment opportunities, enabling users to invest in diverse Sharia-compliant asset portfolios. The integration of blockchain technology in the issuance of Sukuk (Islamic bonds) has simplified the process, heightened transparency, and widened the pool of potential investors. In facilitating capital access, Peer-to-Peer Islamic Microfinance Platforms serve as conduits between Sharia-compliant lenders and borrowers. Islamic Crowdfunding Platforms, such as LaunchGood, foster community investment across a variety of vetted projects aligned with Islamic principles. In addition, platforms dedicated to Islamic social finance have made it easier to fulfil religious obligations like Zakat and Sadaqah.

Talents also must be educated on the Islamic financial needs of emerging markets to develop strategies for specific segments, such as government, consumers, corporates, and financial institutions, as FT3 states. Building trust and credibility within the Islamic FinTech ecosystem is crucial, involving the development of secure, transparent, and compliant with relevant local regulations. Islamic FinTech experts should also create educational resources to inform the public about the advantages of Islamic FinTech solutions.

All interviewees have confirmed that accelerators, incubators, hackathons, and sandboxes are essential for promoting Islamic FinTech but must be adapted to suit local markets with diverse economic, social, and political contexts, as argued by FT3. Understanding both the demand and supply sides is necessary. Universities, institutions, training campuses, and mentorships should provide human capital, while Islamic FinTech talents should focus on forging partnerships with traditional Islamic financial institutions, enabling access to capital, resources, and expertise to scale operations and reach a broader customer base.

FT4 insists that capacity building for Islamic FinTech entrepreneurs is vital, as over 70% of startups fail within the first three years. Two-level Islamic FinTech mentorships, covering both theory and practical experience, are needed. However, FT2 argues that talent alone is insufficient; policy, application, and implementation are also crucial. Islamic FinTech talents must create an open and collaborative environment, considering the unique needs of small markets and the growing Islamic Finance sector. According to FT1, Islamic FinTech entrepreneurs should prioritize addressing religious motivations alongside economic and financial motives.

Islamic FinTech startups need to be more accurate in their assessment of the market for Islamic finance. Despite conventional banks dominating the banking market, a considerable portion of the emerging markets population seeks religiously aligned financial services. Conventional FinTech entrepreneurs should prioritize catering to the Muslim population's religious motivations before focusing on economic or financial incentives.

4.2 Islamic FinTech Demand (Government, Clients, Corporates, and Islamic Financial Institutions)

As major FinTech users in emerging markets, governments can help improve the Islamic Fintech ecosystem. However, some governments with questionable democratic processes may use FinTech to exert control or collect taxes, particularly in markets reliant on the shadow economy. To build trust, governments must invest in citizen education regarding FinTech and Islamic Fintech products and services, as suggested by FT3 and FT4.

FT1 notes that licensing alone does not ensure protection against fraud, hacking, and financial issues in emerging markets. Clients need reassurance that their money is safe. It is similar to the deposit insurance program but in much better terms. To effectively use Islamic FinTech products, clients should research options, assess their suitability, and provide feedback for improvements, as stated by FT6. FT5 argues that many Islamic FinTech institutions in emerging markets do not understand clients' needs, leading to uniform products and increased financial exclusion. FT1 argued that governments and Islamic FinTech companies should focus on developing simple, tailored solutions. Customers seeking Shariah-compliant finance share similar needs with other financial service clients, such as user-friendly, convenient, and accessible products that align with their religious values. By offering solutions that fulfil these criteria, Islamic FinTech companies can quickly capture the attention and loyalty of their target market. Corporations also play a crucial role in fostering the Islamic FinTech ecosystem by embracing solutions that increase efficiency, reduce costs, and enhance the customer experience, as stated by FT6. Similarly, at the government level, there is a demand for straightforward and accessible borrowing options. Islamic financial institutions have yet to offer simplified products that cater to the government's requirements, as noted by FT1.

FT1 suggests that Islamic financial institutions should partner with Islamic FinTech startups to foster innovation and gain a competitive edge. It is recommended that Islamic FinTech regulations be complemented by awareness campaigns aimed at the financially excluded segments. As highlighted by FT5, word-of-mouth is an influential marketing strategy, particularly during Friday sermons. Media campaigns should also focus on promoting the positive aspects of Islamic FinTech.

Consumers need education on Islamic FinTech products and services and understand risks, rewards, benefits, and drawbacks, as mentioned by FT6. Lastly, FT7 emphasizes that while Islamic FinTech should serve the current generation, its primary focus should be on the next generation. For instance, Edfundo, a neo-bank, focus on kids and teens from 8 to 18 years and provides them with Shariah-compliant services from an early age. These initiatives would enhance the growth of Islamic FinTech in the future.

4.3 Islamic FinTech Policy (Government and Regulators)

Government policies and regulators are essential for the stability and growth of the FinTech and Islamic FinTech industry in emerging markets. They provide a legal framework, ensure compliance, and encourage innovation. Regulators also promote competition and consumer protection by supervising the industry and ensuring responsible practices.

FT1 highlights that some emerging market regulations need revision and emphasizes implementing consumer financial protection laws for customer safety. Striking a balance between consumer protection and fostering Islamic FinTech growth is vital. FT3 and FT4 suggest an enhanced regulatory sandbox to safeguard customers and the Islamic financial system.

Governments and regulators play a critical role in nurturing a healthy Islamic FinTech ecosystem, with FT3 advocating for a domestic and regional Islamic FinTech regulatory task force, including regulators, ministries, academics, companies, and stakeholders. FT1 adds that the task force should involve financial experts, Shariah advisors, tech specialists, legislators, and regulators to facilitate Islamic FinTech company registration and licensing. FT6 notes that some emerging markets may be unattractive to Islamic FinTech companies, leading governments to engage in regional agreements to boost cooperation and allow expansion across markets, as stated by FT1. FT5 explains that such agreements offer access to resources, contacts, and markets.

Successful Islamic FinTech companies in emerging markets often develop business models that comply with existing regulations, as mentioned by FT2. However, FT2 and other experts call for light regulations to simplify complex rules and attract more customers. Light regulations simplify complicated rules, and straightforward laws make it simpler to get more customers on board. FT1 supports light regulation in anti-money laundering and counter-terrorist financing. Nonetheless, Islamic finance and FinTech face certain constraints due to anti-money laundering and combating the financing of terrorism (AML/CFT) concerns. In 2016, the International Monetary Fund pinpointed three primary issues (Jani, 2018): 1) diverse business relationships influenced by Shariah structures, which affect AML/CFT measures, 2) risks arising from the intricate nature of Shariah structures that involve numerous transactions and layers, and 3) substantial zakat payments and late payment charges, which are primarily channelled to charitable organizations susceptible to money laundering and terrorism financing risks. Prominent international organizations, such as the Financial Action Task Force (FATF) and the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), should consider developing guidance to address AML and CFT within the realm of Islamic finance and FinTech as stated by FT1.

In conclusion, a regulatory action plan tailored to emerging markets is needed, considering Islamic FinTech's unique characteristics. This plan should protect customers' rights, allow innovation, and avoid copying developed countries' approaches as stated by FT3. A dynamic action plan with broad guidelines is suggested to regulate Islamic Fintech adequately.

4.4 Islamic FinTech Capital (Angel Investors, VC investors, IPO Investors)

Improving the Islamic FinTech ecosystem in emerging markets requires capital entities to focus on critical areas, including angel investors, venture capital investors, and IPO investors. According to FT1 and FT5, investment should target firms addressing consumers' needs with affordable, accessible, and user-friendly products and services. However, political and economic instability poses challenges for investors, as stated by FT3.

FT1 highlights the need for Islamic investment platforms to channel funds from international investors into emerging markets, and FT3 advocates for enhancing Islamic investment banks' and institutions' roles. One solution is registering FinTech companies in stable countries while targeting markets in unstable regions, as suggested by FT3.

FT1 and FT5 note that some investors perceive FinTech and Islamic FinTech investments as riskier than traditional investments, calling for awareness campaigns to educate fund providers about FinTech risks and correct misconceptions. FT4 suggests that having startups participate in qualifying programs in project management, finance, Islamic finance, risk management, and entrepreneurship from reputable partners would boost investor confidence and funding.

FT6 emphasizes the importance of prioritizing investments in companies that promote Islamic financial inclusion and address underserved populations' needs. This includes firms providing Islamic financial education, literacy programs, and innovative solutions for small and medium-sized businesses. FT4 and FT5 recommend that Islamic FinTech engages in mergers, acquisitions, and cooperation. Islamic financial institutions in emerging markets should consider acquiring emerging Islamic FinTech companies to enhance their operations and reduce time-to-market. Incubating these acquisitions separately before full integration could also prove beneficial.

4.5 Opportunities and Challenges of Islamic FinTech Ecosystem in Emerging Markets

FinTech has the potential to extend Islamic financial services in emerging markets, where rapid technological adoption and growing consumer acceptance create new opportunities. Key Islamic FinTech solution areas include catering to the digital demographic, as younger generations are more tech-savvy and open to online-based services, as noted by FT1. According to FT6, Islamic financial institutions should focus on digital-only banking to leverage this potential.

Islamic crowdfunding platforms can facilitate cross-border trade and financing, with equity crowdfunding helping startups and SMEs avoid debt-related fears, as mentioned by FT6. FT6 suggests that insurance technology can provide low-cost coverage in emerging markets, and mutual insurance might gain acceptance due to solid societal cohesion. Open banking architectures and Islamic social finance can also drive innovation and Islamic financial inclusion, as stated by FT3.

However, emerging markets face unique challenges, such as political and economic instability, which can create uncertainty in the financial sector, as noted by FT3. FT4 argued that securing funding for Islamic FinTech startups may be difficult due to perceived risks, and competition from established players might be intense. The lack of financial literacy and trust can increase the risk of scams and fraud, particularly in P2P and crowdfunding sectors, as mentioned by FT6.

FT5 argued that FinTech and Islamic FinTech companies in emerging markets might also face increased cyber-attacks and fraud risks due to less mature security and regulatory frameworks. Over-indebtedness could result from the convenience of borrowing, and underdeveloped financial infrastructure may hinder Islamic FinTech growth, which FT6 notes. Uncertain and stringent regulations may stifle FinTech and Islamic FinTech development in these markets, as discussed by FT1.

To overcome these challenges, Islamic FinTech companies should work with regulators, investors, and consumers to build trust and confidence while investing in infrastructure, talent, and cybersecurity. Collaborations with Regulatory Technology (RegTech) organizations, which specialize in harnessing technology to assist financial institutions in meeting regulatory standards, might be critical for Islamic FinTech enterprises. Such collaborations may make it easier to navigate complicated regulatory frameworks, assuring compliance, supporting long-term sustainability, and facilitating development.

5.0 Conclusion

Islamic FinTech is a growing topic of interest, with significant potential to enhance financial inclusion in emerging markets. This study examines the key elements of the Islamic FinTech ecosystem – talent, demand, policy, and capital – and uses them as a framework to explore its role in shaping emerging markets. The research aims to identify critical aspects of the Islamic FinTech ecosystem and provide a roadmap for stakeholders to improve financial inclusion. Ultimately, the study highlights potential opportunities for FinTech to expand financial services and close financial inclusion gaps.

To fortify the Islamic FinTech ecosystem, Islamic FinTech talents should emphasize the development of locally tailored, Sharia-compliant products, anchored by a comprehensive understanding of the financial needs in emerging markets. They should actively foster trust, transparency, and regulatory compliance, while concurrently enhancing public awareness of Islamic FinTech's advantages. The significance of forging partnerships with traditional Islamic financial institutions for resource and expertise augmentation cannot be overlooked, underscoring the value of accelerators, incubators, and mentorships. Professionals should also prioritize capacity building, effective policy implementation, and the cultivation of an open, collaborative environment. Given the substantial demand for religiously affiliated financial services in these markets, accurate market assessment is equally paramount.

Demand for Islamic FinTech is high among consumers, but other stakeholders, such as governments, clients, corporates, and financial institutions, have different needs. Islamic FinTech providers should focus on understanding and addressing these diverse requirements with customer-centric products. To cater to diverse customer needs, Islamic FinTech companies should do extensive market research and create user-friendly, religiously aligned solutions. They should solicit regular client input to improve their services, provide individualized services based on individual financial needs, and develop educational activities to increase user comprehension of their offers. Additionally, customers need more protection and targeted awareness programs to build trust in Islamic FinTech. Word-of-mouth can be an effective way to communicate the benefits of Islamic FinTech to various stakeholders.

Government policies and regulators are vital for Islamic FinTech growth and stability in emerging markets. They should revise regulations, implement consumer protection laws, establish a regulatory sandbox, and form a task force involving stakeholders. Regulatory sandboxes in Islamic FinTech act as controlled settings that allow for testing new solutions while maintaining Sharia and financial regulatory compliance. They encourage innovation, eliminate legal uncertainty, boost investor confidence, and aid in the refinement of legislation. Additionally, regional agreements and light regulations can promote market expansion and attract customers. These policies lower bureaucratic barriers, make market entrance easier, and promote cross-border services. Reduced regulatory complexity also encourages inventors to create Sharia-compliant solutions. Furthermore, they foster client confidence and acceptance by ensuring that Islamic FinTech solutions adhere to regulatory norms while allowing for innovation. As a result, they promote Islamic FinTech's greater penetration and success inside regional and global financial networks.

International organizations must address anti-money laundering and counter-terrorist financing concerns for Islamic FinTech. A tailored regulatory action plan should protect customer rights and encourage innovation without copying developed countries' approaches.

Enhancing the Islamic FinTech ecosystem in emerging markets involves investing in firms providing accessible, affordable products and services, adopting innovative strategies to overcome political and economic instability, raising awareness to build investor confidence, and prioritizing companies promoting Islamic financial inclusion. Mergers and cooperation between Islamic financial institutions and FinTech firms can improve operations and expedite market entry.

While this study explored Islamic FinTech's potential to improve financial inclusion in emerging markets, it may not cover all aspects of the rapidly evolving landscape. Further research could investigate Islamic FinTech's impact on specific demographics (such as women, youth, and rural communities) and the role of technological advancements, like artificial intelligence and blockchain, in shaping the future of Islamic FinTech in emerging markets. This could deepen our understanding of the Islamic FinTech ecosystem and lead to more effective strategies for promoting financial inclusion.

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