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Navigating the Uncharted: The Shaping of FinTech Ecosystems in Emerging Markets

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Abstract: Although there is a significant gap in comprehensive research on FinTech ecosystems in emerging markets, it is evident that these regions hold immense potential for growth in the field of financial technology. This study explores the FinTech landscape of these markets, focusing on the opportunities and challenges that exist. We emphasize the necessity of adopting localized, trust-oriented strategies, strengthening capacity, and exploring under-represented segments such as small markets and Islamic Finance. We further identify the need for confidence-building measures, customer-focused approaches, active consumer participation, equitable FinTech reporting, and an orientation toward the Future. We strongly encourage policymakers to update regulations that prioritise consumers, create task forces dedicated to FinTech, promote collaboration among regions, and ensure that business models comply with existing laws. We suggest simplifying regulations and developing a flexible, industry-specific regulatory action plan. In addition, we emphasise the significance of strategic investment in emerging market FinTech companies through secure regional registration, investor education, qualification programmes, third-party evaluation, and promoting mergers and acquisitions. These factors are essential for nurturing a strong FinTech ecosystem in these markets.

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1. Introduction

Although there are individuals around the globe who have access to financial services, there is still a significant portion of the population that lacks access to banking services or has limited access. In economics, these regions are commonly referred to as emerging markets, as indicated by various studies (Mhlanga, 2021). With the rapid advancement of financial technology (FinTech), the global financial landscape is undergoing a significant transformation. This transformation offers emerging markets a valuable chance to bypass traditional banking systems and make significant strides towards achieving greater financial inclusion (Lynn, Rosati, & Cummins, 2020; Mills, 2018). FinTech is utilising cutting-edge technology to provide groundbreaking financial solutions for individuals and enterprises (Nicoletti, 2017). Given the growing acceptance of technology and digital financial services among consumers, FinTech has the potential to expand its influence in both its primary markets and beyond.

The reality of emerging markets can be challenging, as highlighted by recent research (Ali, Ali, & Fatima, 2023; Kanan et al., 2022). However, amidst these challenges, there are also numerous opportunities, especially in the dynamic field of FinTech. Given the significant presence of emerging markets, which have a vast majority of young individuals, it becomes an ideal environment for the growth of FinTech. In addition, these markets account for 59% of global economic output, which has transitioned from being export-oriented to adopting more customer-centric approaches (Global X, 2019; Muller, 2018). The interest of governments and large companies in developing regions in investing in the FinTech sector also presents a significant opportunity (Global X, 2019).

Based on data from Statista (2022), there has been a substantial rise in global FinTech financing, with the amount increasing from $59.2 billion in 2017 to $210.1 billion in 2021. Emerging markets, with their substantial number of digital users, have managed to secure an impressive $47.32 billion in funding through FinTech firms and startups. This trend clearly indicates the potential growth and success of the FinTech sector in emerging markets, evidenced by increased investments and the evolving digital consumer base. However, this growth is hampered in part by a lack of supporting research and comprehensive evidence that focuses on the FinTech ecosystem in these emerging markets.

The FinTech ecosystem goes beyond being a mere trend. It has profound implications for financial inclusion, economic development, and societal transformation, especially in emerging markets. Therefore, it is important to delve into the FinTech ecosystem in emerging markets due to its ability to transform their financial landscapes and make significant contributions to economic and social objectives. The FinTech ecosystem initially centred on analysing the influence of various stakeholders on the advancement of FinTech. Key players in the industry, including FinTech startups, government entities, financial customers, technology developers, and traditional financial institutions, were all given significant attention (Castro, Rodrigues, & Teixeira, 2020; Lee & Shin, 2018).

However, there is a limited understanding of the complex dynamics that shape the FinTech ecosystem in developing countries. This divide hampers the potential for these areas to reap the advantages of financial inclusion and economic development opportunities provided by FinTech. Thus, a more holistic approach is required to gain a complete understanding of the FinTech ecosystem. Our research delves into the FinTech ecosystem, utilising a comprehensive conceptual framework that encompasses various elements derived from (Ernst & Young, 2016). These dimensions are talents (academia, entrepreneurial firms, startups, and financial institutions), demand (government, clients, corporates, and financial institutions), policy (government and regulators), and capital (angel investors, VC investors, IPO investors).

The dimensions and elements have been meticulously selected due to their substantial influence on the trajectory of FinTech, as evidenced by the research conducted by various scholars. This approach provides a holistic view of the FinTech ecosystem, allowing for a deeper comprehension of the key elements at play and how they are interconnected. Furthermore, it facilitates the identification of prospects, obstacles, and potential domains of intervention, promoting the expansion and advancement of the FinTech sector. In addition, given the rising importance of emerging markets and their promising potential in the future, we investigate the FinTech ecosystem in the context of these markets. By examining these elements, we can better understand the dynamics that shape the FinTech ecosystem and identify opportunities for growth and development in emerging markets.

This study seeks to enhance our understanding by exploring the FinTech landscape in emerging economies. It focuses on the essential components of the FinTech ecosystem and offers guidance to stakeholders in these markets. Prior studies have concentrated on different facets of the FinTech ecosystem, such as its components (Lee & Shin, 2018), its influence on entrepreneurial ecosystems (Festa et al., 2022; Harris, 2021), its effect on sustainable development (Vovchenko et al., 2019), and the evolution of the FinTech ecosystem (Castro, Rodrigues, & Teixeira, 2020). This study synthesises these conversations to elucidate the aspects and components that define FinTech ecosystems in developing economies. All things considered; this research clarifies important elements influencing the prosperity of FinTech ecosystems in developing nations.

The study is organised into five sections, with each section building upon the previous one. In this section, we will delve into the theoretical orientation and provide a detailed description of the methodological process employed to obtain our findings. The following sections will now present the findings and analysis, leading to a comprehensive plan for all parties involved in the FinTech ecosystem. In our final section, we highlight the main discoveries.

2. Theoretical Orientation

2.1 Review of FinTech Knowledge: A Bibliometric Analysis

The recent study conducted a comprehensive analysis of the modern literature on FinTech knowledge, examining publishing trends and presenting the data in a visual format. The purpose of bibliometric analysis is to establish a clear and structured review process by using statistical assessments of the conceptual structure, thematic maps, and thematic evolution (Altarturi & Ajouz, 2021; Aria & Cuccurullo, 2017). Therefore, the Bibliometrix R package was utilised to thoroughly analyse the collected data in a methodical manner (Aria & Cuccurullo, 2017).

Between 1986 and 2023, a total of 1723 documents have been published and indexed by Scopus. These works have been written by 3755 authors and published in 824 sources, with the majority (57.16%) being journal articles, 20.71%

being conference papers, and 14.33% being books and book chapters. Interestingly, the use of the term financial technology in academic work only began in 1986 with Nayar (1986), who raised the question of whether traditional financial technology could coexist with modern financial technologies. In Nayar's (1986) analysis, three key characteristics were identified as crucial for modern financial technologies to align with the demands of the contemporary financial system: adaptability, flexibility, and universality.

An analysis of the author's keywords as presented in Figure 1 showed that the terms "FinTech or financial technology" appeared 1033 times, followed by "banking, financial services, and finance", "artificial intelligence and machine learning", "financial inclusion", "blockchain", "innovation", "crowdfunding", "trust", "regulation", and "digitalization". An interesting conclusion can be drawn from the word cloud of the dataset that FinTech is tightly linked to banking and financial services with increasing financial inclusion with more use of artificial intelligence and machine learning. FinTech has been debated as a potential replacement for traditional financial institutions. However, previous research suggests that it is intertwined with and utilised to enhance financial and banking services.

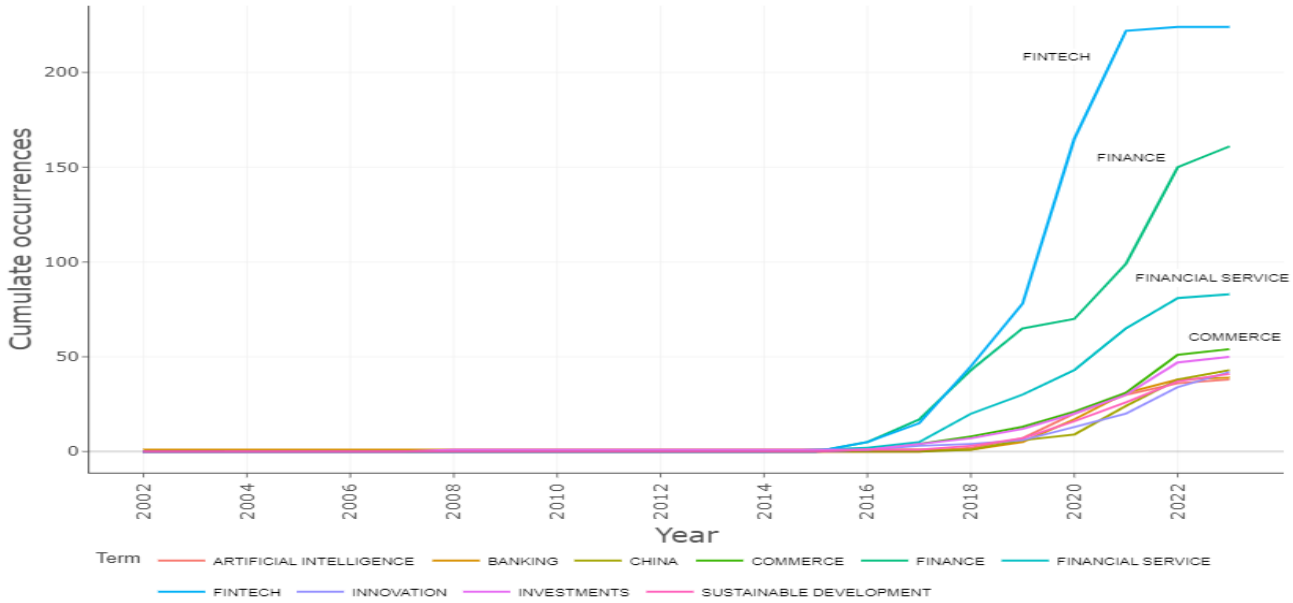

Figure 1: The Trending Topics in FinTech Literature Over the Years.

This finding indicates that FinTech is a burgeoning phenomenon in the financial services sector and is being employed to enhance current offerings. FinTech is gaining significant traction in the banking and financial services industry, playing a crucial role in enhancing financial inclusion and streamlining existing services. The data also indicates that the utilisation of artificial intelligence and machine learning is gaining traction in the industry, potentially leading to cost reduction and improved accessibility to financial services. Overall, this finding emphasises the significance of FinTech in the financial services sector and indicates that it serves as a valuable addition to traditional financial services rather than a substitute for them.

Furthermore, Figure 2 showcases the yearly trends and highlights the activity of the ten main topics over the course of the last two decades. In 2016, there was a noticeable shift as more attention was given to the field of FinTech. Over the past five years, there has been a noticeable shift towards subjects such as finance and financial services, commerce, investment, innovation, sustainable development, and artificial intelligence.

Lately, there has been a growing interest among scholars in the field of financial technology. Researchers have conducted a thematic analysis to better comprehend the field's growth. This is evident in the works of Al-Hosaini et al. (2023). Thus, data visualisation was employed to quantify the conceptual structure, thematic map, and thematic evolution of the research constructs.

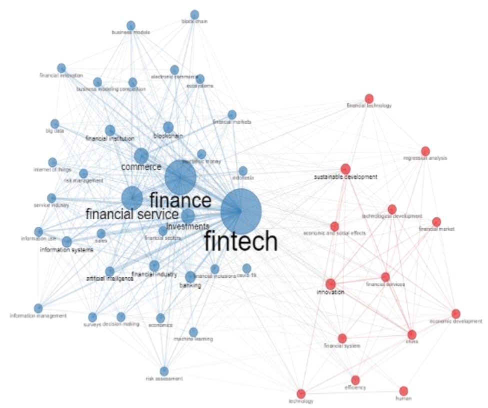

Figure 2: Co-occurrence Network.

Conceptual Structure: The co-occurrence network or co-word analysis uncovers the conceptual structure, showcasing the interplay among different themes, topics, and trends. In Figure 2, the co-occurrence network reveals the presence of two distinct clusters (blue and red) that were identified from the data. The colours indicate distinct clusters, while the proximity of the nodes demonstrates their interconnectedness. The vertices symbolise the words, with the size of the nodes reflecting their frequency. The blue cluster primarily consisted of FinTech and finance, while the red cluster is still developing and lacks a specific theme, but it is closely connected to FinTech.

Thematic Map: In this study, a thematic map was used to plot typological themes on a two-dimensional plot. A co-word analysis was performed to identify clusters of keywords, which revealed themes in the research domain based on their density and centrality (Cobo et al., 2011). As shown in Figure 3, the results indicate that the upper right quadrant theme is connected to FinTech, financial services, and blockchain, which are central to the field and widely discussed. The lower right quadrant highlights important yet untapped sectors such as finance, commerce, and investment. The upper left quadrant represents a specialised area of focus that is extensively explored internally but lacks strong connections to the outside world and holds limited significance, much like humans. Prior studies have focused on gaining insights into the impact of FinTech or the dynamics between individuals and FinTech. The development and critical analysis of learning algorithms, deep learning, and learning systems in the lower left quadrant theme need further improvement. It showcases both growing and diminishing connections. However, the themes of innovation and sustainable development are constantly evolving and intersecting with other areas.

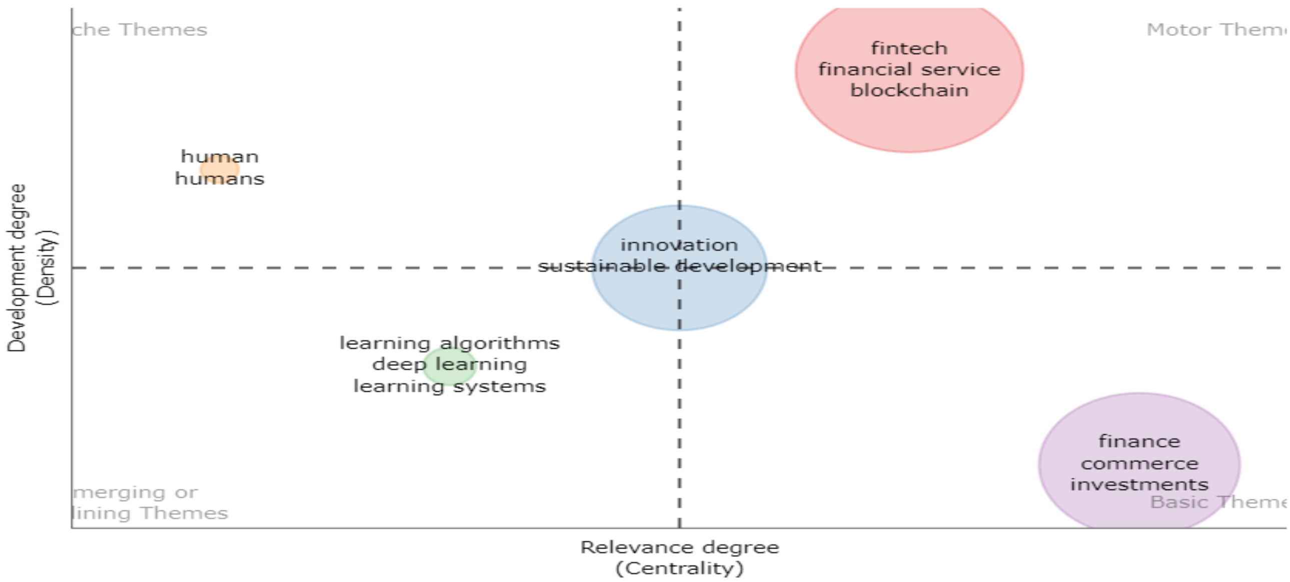

Figure 3: Thematic Map.

Thematic Evolution: Furthermore, it is crucial to emphasise the thematic evolution network in the field to analyse the overall progression of the area by segmenting the entire time frame into various intervals using interactive Sankey diagrams. Figure 3 shows the analysis of thematic evolution over three-time slices. The author's keyword field had a 500-word count and a minimum cluster frequency of seven. The first period analysed was from 1986 to 2016, followed by the second period from 2017 to 2020, and finally the third period from 2021 to 2023. This analysis linked previous research themes to current emerging themes. As depicted in Figure 4, there has been a limited amount of research conducted on FinTech between 1986 and 2016. However, starting in 2017, there was a shift in research focus towards FinTech and its various aspects, including digital transformation, peer-to-peer lending, financial services, and machine learning.

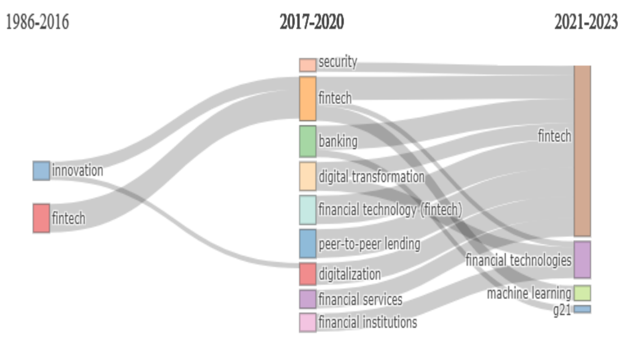

Figure 4: Thematic Evolution Network of Author's Keyword.

2.2 Review of FinTech Ecosystem

The rise of FinTech has caused significant disruptions in financial systems around the world, including in developing economies. The FinTech ecosystem in emerging markets is constantly evolving, offering plenty of growth opportunities and posing numerous challenges. The purpose of a literature review is to offer a thorough understanding of the existing research on FinTech ecosystems in emerging markets. It seeks to illuminate the ever-changing landscape and how it affects the financial industry. acquiring a comprehensive understanding of the potential for growth in emerging markets' FinTech ecosystem is crucial, considering the numerous opportunities and challenges it presents.

This literature review delves into various facets of the FinTech ecosystem. Collaboration between FinTech startups and established companies can be highly advantageous, as highlighted by Svensson, Udesen, & Webb (2019) and emphasised by Ünsal et al. (2020). These experts emphasise the significance of partnerships between banks and FinTech companies to develop innovative products and services for customers. There has been considerable interest in the subject of FinTech entrepreneurial ecosystems as well. For example, Harris (2021) discovered that a specific actor in the accelerator space had a significant impact on the development of entrepreneurial networks in the FinTech industry. In a similar vein, Festa et al. (2022) explore the possible impact of FinTech factors on the entrepreneurial ecosystem.

In addition, Soloviev (2018b) and Soloviev (2018a) conducted an analysis of the Russian FinTech landscape and the development of its ecosystem, exploring the perspectives of different participants within the ecosystem regarding FinTech. Meanwhile, a recent study by Zheng, Ab-Rahim, & Jing (2022) has evaluated the FinTech ecosystems of several Asian countries, revealing that

Singapore has emerged as the top performer in this domain. Furthermore, researchers have delved into different facets of FinTech, in addition to ecosystem rankings. In a recent study, Hudaefi, Hassan, & Abduh (2023) delved into the realm of FinTech regulation in Indonesia Senyo et al. (2022) explored the relationship between FinTech and financial inclusion. In a recent study conducted by Lee & Shin (2018), an analysis was conducted on investment options, business models, and ecosystems in the field of FinTech. Mirzaei (2022) presents an insightful perspective on the Iranian FinTech market, highlighting its significant role in the Middle Eastern region. While these studies provide valuable insights into the FinTech landscape, further research is necessary to fully understand the effects of FinTech on financial inclusion and its significance in emerging markets.

In recent studies, researchers have explored how strategies employed by FinTech platform operators, including phantomization, decentralisation, localization, and democratisation, can improve the scalability of financial service delivery (Muthukannan et al., 2021). In addition, according to Berman, Cano-Kollmann, & Mudambi (2022), FinTech innovation provides unique benefits to startups and smaller firms, while also presenting challenges for larger incumbents. Still, Lähteenmäki, & Seppänen (2019) highlight the ways in which established players have cultivated numerous innovation relationships within FinTech ecosystems. Organisations are actively incorporating IoT technology into FinTech to improve financial services. They are utilising blockchain, the internet, mobile networks, cloud storage, and IoT devices to achieve this goal (Maiti & Ghosh, 2021). To fully understand the potential of FinTech innovation, it is crucial to continue exploring the development of the FinTech ecosystem and the various economic and social benefits it can bring.

Furthermore, it is essential to grasp the intricacies and interconnectedness of the FinTech ecosystem, including its various participants such as entrepreneurs, investors, regulators, and customers. As per the research conducted by Avarmaa et al. (2022), it has been found that the conditions and actors within an ecosystem are interconnected, and the dominant actor in a particular ecosystem can be influenced by local conditions. In addition, Sohns & Wójcik (2020) suggest that the strategic responses of entrepreneurial actors are influenced by factors such as the firm's age, size, product specialisation, and egocentric network structure. It is important to consider FinTech ecosystems as intricate and ever-changing systems, where various elements interact and create patterns on their own, as highlighted by Muthukannan et al. (2020).

Regulation has a major impact on the development of FinTech ecosystems. According to a study by Arkanuddin, Saragih, & Nugroho (2021), financial regulation plays a crucial role in mitigating risks and maintaining stability in FinTech ecosystems. Additionally, Muthukannan et al. (2020) recommend implementing compliance by design to foster a shift in organisational culture. In addition, Sohns & Wójcik (2020) emphasise the significance of Brexit's effect on London's FinTech sector, illustrating how regulatory frameworks can impede innovation and the growth of ecosystems. In general, these articles provide valuable insights into the emergence and development of FinTech ecosystems, highlighting the significance of comprehending the dynamics and interdependencies of the actors involved and the role of regulation.

The FinTech industry has been greatly impacted by information technology, as highlighted in the research conducted by Basole & Patel (2018), Castro, Rodrigues, & Teixeira (2020), and Mamonov (2020). Mamonov (2020) utilises the business model canvas framework to examine the influence of IT on leading FinTech startups. He highlights the ability of IT to effectively coordinate resources and processes to provide customised financial services, often emphasising affordable options that could potentially disrupt traditional financial service models. Basole & Patel (2018) present a visualisation of the FinTech ecosystem across 24 market groups.

The visualisation highlights the uneven distribution of FinTech activities worldwide, the varying growth rates in different sectors of the ecosystem, the interconnectedness of the network structure, and the diverse investments and purchases made by major players and venture capital firms. They discuss the theoretical and managerial implications and suggest further research on service ecosystems. Castro, Rodrigues, & Teixeira (2020) conducted a study that explored the growth of the FinTech ecosystem by utilising socio-technical system theory and service innovation. The authors illustrate the influence of various factors on the development of these ecosystems and the results they produce, providing insights into the evolution of FinTech ecosystems from a socio-technical system and service innovation standpoint. These studies suggest that FinTech startups are causing significant disruption in the financial services industry and providing opportunities for research into service ecosystems.

FinTech has become a crucial component of the financial industry, necessitating additional research to gain a comprehensive understanding of its effects on financial inclusion, its significance in emerging economies, and its ethical and social consequences. Although FinTech holds great promise in enhancing financial services, financial inclusion, and entrepreneurship, its current growth and expansion face limitations. Thus, further investigation is required to tackle the obstacles and drawbacks of the FinTech ecosystem's development and expansion, especially in emerging markets.

2.3 The Proposed Conceptual Framework

2.3.1 FinTech Talents (Academia, Entrepreneurial, Firms and Startups, Traditional FIs)

FinTech is an industry that requires a diverse set of talents and skills. Academia, entrepreneurs, firms and startups, and traditional financial institutions are all investing in FinTech (Mei, Peiguang, & Xiushan, 2018). In the world of academia, a solid understanding of mathematics, computer science, economics, and finance is crucial. On the other hand, entrepreneurs must possess qualities like creativity, adaptability, and a willingness to take risks. Meanwhile, firms and startups require individuals with specialised skills such as software engineering, data analysis, user experience design, and marketing. Traditional financial institutions require professionals who possess expertise in risk management, compliance, and cybersecurity, along with a strong grasp of emerging technologies and innovative business models. Those looking to enter the field of FinTech should prioritise honing their skills in these areas and remain receptive to fresh perspectives and innovative methods (Santoso et al., 2021). Therefore, based on this reasoning, the following question is proposed:

Q1 How do attract, develop, and retain FinTech talent to improve FinTech ecosystem in emerging markets?

2.3.2 FinTech Demand (Government, Consumers, Tech savvy, Corporates, and FIs)

The demand for FinTech services is driven by various factors, including the needs of governments, financial institutions, corporations, and consumers. Financial technology has the potential to revolutionise government services, making them more efficient, cost-effective, and secure. Similarly, corporations and financial institutions can leverage FinTech to enhance their services and streamline financial operations, resulting in increased profitability and savings (Gurrea-Martínez, 2020; Wu, Bai, & Chen, 2023). Consumers can enjoy a wide range of FinTech services that offer convenient features like instant money transfers and electronic payments. These services can help save valuable time, effort, and costs (Ajouz, Abuamria, & Hammad, 2021). Accordingly, the following question is proposed:

Q2 How does the FinTech demand improve FinTech ecosystem in emerging markets?

2.3.3 FinTech Policy (Government, Central Banks, and Regulators)

Government and regulatory FinTech policies aim to create a supportive legal and regulatory environment for emerging businesses in the field, grant relevant licences, and mitigate the inherent risks of the industry (Fáykiss et al., 2018). The main objectives are to promote healthy competition and encourage new ideas (Van Loo, 2018), address the financial requirements of marginalised communities, and establish frameworks for consumer protection and security (Lee & Shin, 2018). Ultimately, government and regulatory policies are essential in fostering innovation and growth in the FinTech industry, all while ensuring the well-being of consumers and businesses. Hence, the following question is proposed:

Q3 How do governments and regulators collaborate to improve the FinTech ecosystem in emerging markets?

2.3.4 FinTech Capital (Angel Investors, VC investors, IPO Investors)

FinTech capital is the financial support that is injected into the FinTech industry to foster its growth and success. Angel investors offer initial funding, while venture capitalists offer equity. Initial public offerings (IPOs) channel funds into publicly traded businesses. These types of investments play a vital role in fostering the growth and development of the FinTech industry. This funding is essential for FinTech as it enables businesses to acquire machinery, recruit employees, and venture into new markets. It is crucial for the economy as it promotes growth, cultivates new talent, and enhances innovation and competitiveness in the financial services industry (Cumming & Schwienbacher, 2021; Kolokas et al., 2022). In view of the foregoing, the following question is asked:

Q4 How does FinTech Capital improve the FinTech ecosystem in emerging markets?

3. Methodology

The study utilised semi-structured qualitative case study interviews to engage respondents in thought-provoking discussions. This approach allowed for in-depth insights into their viewpoints on various components of the FinTech ecosystem, including demand, policy, talent, and capital. The methodology was adapted from Ernst & Young (2016). The interviews consisted of open-ended questions that enabled the respondents to freely share their thoughts on important factors and unforeseen issues. Both Arabic and English were utilised during the interviews, and a thematic analysis approach was employed to analyse the findings.

To examine the FinTech ecosystem in emerging markets, Ajouz, Abuamria, & Hammad (2021) employed a judgement sampling technique to select participants. The informants were chosen based on their working experience, field of expertise, and qualifications. The number of participants was determined based on the need to fully report all essential elements of the study. The sample size was deemed adequate when no new concepts emerged during subsequent interviews, a phenomenon referred to as data saturation. According to Gill et al. (2008), it is suggested that the optimal number of participants for such studies is between six to eight.

This study sought to evaluate the FinTech ecosystem in various emerging markets through conducting in-depth interviews with experts. The researchers utilised an online interview method through Zoom, enabling authors to share expert opinions, address questions, resolve doubts, and generate new inquiries (Sekaran & Bougie, 2016). Seven out of nine participants willingly agreed to take part in the study. The study encompassed a variety of emerging markets, each with its own unique economic, social, and political circumstances. The interviews were divided into two sections, one for gathering demographic information and another for asking a set of semi-structured questions to ensure consistency. The qualitative approach led to the analysis and interpretation of transcripts to gather data.

Table 1: Demographic Profile of FinTech Experts.

No	Position	Qualification	Specialization	Geographies Expertise	Work Experience
FT1	Assistant Professor & Researcher	Ph.D.	Islamic Finance	Middle East	25 years in teaching, training, consulting, and researching.
FT2	Executive Director	Ph.D.	Financial Engineering	MENA	20 years in consulting banking and finance services
FT3	Co-Founder	Ph.D.	Finance, Banking & FinTech	Southeast Asia	10 years in teaching, training, consulting, and researching.
FT4	Director of Business Growth and Digital Innovation	Ph.D.	Finance & Banking	Southeast Asia & Asia	25 years in business consultancy, training, and education in FinTech.
FT5	Researcher	Master	FinTech Marketing	Middle East	5 years in FinTech researching
FT6	Assistant Professor & Researcher	Ph.D.	International Business	Middle East	5 years in teaching and researching.
FT7	Managing Director	Master	Finance, Marketing, Real Estate Development	MENA & Asia	25 years in Entrepreneurship

In Table 1, the study involved seven interview sessions. Each interviewee's response was assigned a reference number, ranging from FT1 to FT7, for easy identification. The participants had diverse backgrounds, with five holding a Ph.D. degree and two having a master's degree in fields like FinTech, finance, banking, and marketing. The participants had a wide range of geographical expertise, including the Middle East, the broader MENA region, Southeast Asia, and other parts of Asia. Their professional experience varied from 5 years to an impressive 27 years. The study has identified four main themes that have been derived from the findings of the interviews. These themes will be presented in the following sections.

4. Results and Discussions

The study employed the saturation approach to establish the sample size and achieved data sufficiency after the seventh interview (Charmaz, 2014). A grand total of 316 codes were generated, with 92 codes stemming from the initial interview, 75 and 57 codes from the subsequent two interviews, and 92 codes from the fourth to seventh interviews (Guest, Bunce, & Johnson, 2006). The decision to halt data collection was made based on the principle of saturation, which suggests that gathering more data does not yield any new information.

This section highlights the key findings of the study, which were obtained through interviews with participants. The focus of the study was on the FinTech ecosystem in emerging markets. The analysis centres on the interviewees' viewpoints regarding the FinTech ecosystem, which is currently in a state of flux with no definitive direction for those involved. The interview method was used to uncover important aspects of the FinTech ecosystem in order to create a roadmap for stakeholders.

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

The FinTech industry has the potential to completely transform the delivery of financial services in emerging markets. However, there are several areas that require enhancement to ensure that talents in the field of FinTech, including academia, entrepreneurial firms and startups, and financial institutions, can effectively contribute to this transformation.

Various studies and reports have highlighted the significant interest in groundbreaking financial products from emerging markets, suggesting a widespread embrace and integration of FinTech in these areas. All interviewees unanimously emphasise the importance of FinTech talents prioritising the development of groundbreaking products and services that cater to the unique requirements of the local population.

According to FT3, it is essential to provide training and education to FinTech talents regarding the financial requirements of emerging markets. This will enable them to develop customised strategies for different segments in the market, including government, consumers, corporates, and financial institutions. It is crucial for FinTech talents to prioritise the establishment of trust and credibility within the FinTech ecosystem. This entails creating products and services that prioritise security, transparency, and adherence to applicable local regulations. In addition, it is crucial for FinTech experts to create valuable resources aimed at educating the public about the benefits of using FinTech products and services. All interviewees have emphasised the significance of accelerators, incubators, hackathons, and sandboxes in fostering FinTech innovation. However, FT3 emphasised the importance of adapting these tools to suit the unique characteristics of local markets, particularly in emerging economies with diverse economic, social, and political landscapes. It is important to have a thorough understanding of both the demand and supply side. Universities, institutions, training campuses, and mentorships should play a crucial role in providing the necessary human capital. When it comes to meeting the demands of the industry, it is crucial for FinTech talents to prioritise building partnerships with traditional financial institutions. This will empower them to gain access to the essential funding, resources, and knowledge to expand their operations and reach a wider range of customers.

FT4 shows more than 70 percent of start-ups fail in their first three years. This requires capacity building for FinTech entrepreneurs, such as vocational training, academic training, specific skills training, and finance training. FT4 further argues for the need for two-level FinTech mentorships; the first is at the theoretical of FinTech, while the second is at the practical level, which contains people who successfully developed their own FinTech start-up. However, FT2 argues that talents are essential to foster FinTech but still not enough; It's all about policy, application, and implementation. FinTech talents must focus on creating an open and collaborative environment.

There are a wide range of activities in the field of FinTech in emerging markets, including conferences, workshops, and meetings. However, not all emerging markets, particularly smaller ones, have received equal attention. This is also true for Islamic Finance, which is thriving in these markets. According to FT1, there is a demand in the emerging markets for Islamic financial services that align with religious beliefs and allow voluntary exclusion from the financial sector. Thus, it is important for FinTech entrepreneurs to recognise the significance of appealing to the religious motivations of their target population, rather than solely focusing on economic or financial incentives.

4.2 FinTech Demand (Government, Consumers, Tech savvy, Corporates, and FIs)

Governments play a significant role in the adoption and development of FinTech in emerging markets, leveraging their influence to enhance the FinTech ecosystem. However, there are concerns about the actions of governments in emerging markets that have not undergone a fully democratised process. These actions towards FinTech are seen as questionable, as they may be driven by a desire to exert more control over citizens or to increase tax collection. This is particularly true in markets that heavily rely on the shadow economy. It is crucial for governments to increase their investment in establishing trust in FinTech among citizens, as demonstrated by FT3. This involves, as stated by FT4, by equipping individuals with the knowledge and abilities to utilise, comprehend, and reap the advantages of FinTech products and services. As per FT1's findings, having a licence as a FinTech company may not provide sufficient protection against fraud, hackers, and financial difficulties in emerging markets. However, customers desire a sense of security, knowing that the FinTech company has insurance, and their funds are secure. It is comparable to the deposit insurance programme, but with significantly more favourable conditions. FT6 promotes the acquisition of additional clients for the FinTech board: FinTech clients to take a proactive approach in managing their financial affairs. To maximise the effectiveness of FinTech products, clients should prioritise conducting comprehensive research and analysis of the available options. This will enable them to evaluate the suitability of each option in meeting their unique needs. In addition, it is important for customers to provide feedback to financial institutions and FinTech providers to identify areas for improvement and ensure that their expectations are being met.

Every FinTech company knows the necessity of prioritising consumer demands, but not all do. However, FT5 believes that emerging market FinTech institutions still need to understand their clients' needs. Since they sell the same things to everyone, financial exclusion increases. Interestingly, some FinTech startups target the banking sector. Similar stories play out in academics. The government wants a FinTech borrowing solution. According to FT1, FinTech companies must offer simple goods to satisfy the government.

Corporations play a crucial role in the development and enhancement of the FinTech ecosystem in emerging markets. According to FT6, it is crucial for businesses to adopt FinTech solutions that provide advantages such as enhanced efficiency, lowered expenses, and enhanced customer experience. Similarly, it is crucial for financial institutions to take a proactive approach in adopting FinTech solutions to maintain competitiveness. By partnering with FinTech startups, they can tap into their fresh ideas and gain a strategic advantage.

According to FT1, it is important to have awareness campaigns alongside FinTech legislation. It is crucial to address the needs of the financially excluded segment by implementing FinTech literacy and education programmes that effectively engage and captivate their interest. In emerging markets, as highlighted by FT5, it has been discovered that word-of-mouth holds significant influence in marketing. Therefore, it is crucial for employees to actively promote FinTech. Media campaigns should also be utilised, as it is evident that current news channels tend to focus heavily on reporting negative aspects such as fraud, financial failure, hacking, and financial problems, while neglecting to give equal attention to the positive aspects of FinTech. They are failing to acknowledge the user-friendly, convenient, and easily accessible nature of FinTech products.

It is crucial for individuals to have a comprehensive understanding of the diverse range of FinTech products and services that are accessible. It is important to have a comprehensive understanding of the risks and rewards associated with various offerings, as well as the potential benefits and drawbacks. Ultimately, as per FT7, it is also important for FinTech to prioritise the needs of the present generation while also keeping an eye on the future.

4.3 FinTech Policy (Government, Central Banks, and Regulators)

The existence of government policies and regulators is essential for ensuring the stability and growth of the FinTech industry in emerging markets. These policies and regulations create a framework for the industry to operate within, guarantee adherence to laws and regulations, and encourage innovation and expansion. Regulators play a crucial role in promoting competition and protecting consumers by overseeing and regulating the industry. Their aim is to ensure that FinTech companies act responsibly and deliver top-notch services to their customers.

With a focus on fostering innovation, governments and regulators have been actively supporting the growth of FinTech. This has created an environment that promotes the success of both emerging start-ups and established service providers. FT1 reports that there is a need for revision of rules related to FinTech in certain developing economies. FT1 highlights the significance of implementing consumer financial protection laws to address concerns surrounding FinTech products. He emphasises the importance of such measures in guaranteeing the safety and security of customers in the financial sector. It is crucial to strike a balance between safeguarding customers and fostering the growth of FinTech without imposing unnecessary burdens. FT3 and FT4 hold a similar perspective, with FT3 proposing the implementation of an improved regulatory sandbox to safeguard both customers and the financial system.

Governments and regulators have a vital role to play in nurturing a thriving FinTech ecosystem. An essential step towards fostering a thriving FinTech ecosystem in the emerging market is the establishment of a domestic and regional regulatory task force. FT3 emphasised the importance of a comprehensive FinTech task force that includes regulators, ministries, academics, companies, and stakeholders. Furthermore, as per FT1, it is crucial for the FinTech task force to engage various stakeholders, including financial experts, Shariah advisors, tech and programming experts, legislators, and regulatory bodies, to streamline the process of registering and licencing FinTech companies.

FT6 mentioned that certain FinTech companies perceive emerging markets as small and unattractive. That is partially true, which motivates governments in these markets to participate in regional agreements in FinTech, as mentioned by FT1. Collaborating with the region is essential for the success of FinTech. It is important to prioritise agreements that promote regional cooperation, enabling FinTech companies to thrive in multiple emerging markets. This is particularly relevant given the borderless nature of FinTech services, as highlighted by FT6. As per FT5, FinTech companies can leverage regional agreements to broaden their operations in emerging markets. These agreements provide valuable access to resources, contacts, and markets that may otherwise be out of reach. A key factor contributing to the success of numerous FinTech companies in emerging markets is their approach to developing their business model in alignment with existing regulations. Rather than attempting to challenge or change laws, these companies focus on adapting their ideas to fit within the established framework. They have a strong grasp of the regulations and have developed a business model that aligns perfectly with the current regulatory framework, as highlighted by FT2. However, FT2 has emphasised the importance of minimal regulations, a viewpoint shared by other experts in the field. It appears to be quite fitting in a scenario like emerging markets. Streamlined regulations simplify complex rules, and clear laws make it easier to attract more customers. Similarly, FT1 advocates for minimal regulation when it comes to anti-money laundering (AML) and counter-terrorist financing (CFT).

The conclusion highlights the necessity of implementing a regulatory action plan to enhance the FinTech experience in emerging markets, considering the distinct features of FinTech in these markets. Having policies and regulations that prioritise customer rights and foster innovation is crucial, especially when considering the unique requirements of emerging markets. A clear vision and well-defined policy for FinTech are essential, and it is not practical to simply replicate strategies from more advanced nations. An effective action plan with comprehensive guidelines is recommended to ensure proper regulation of the industry.

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

To enhance the FinTech ecosystem in emerging markets, it is crucial for FinTech capital entities to focus on specific key areas. These areas include angel investors, venture capital investors, and IPO investors. FT1 and FT5 demonstrated the significant impact of FinTech on the future of technology and the financial industry. Therefore, it is advisable for investors to consider investing in companies that cater to the unique requirements of consumers in developing economies. This involves creating products and services that are reasonably priced, readily available, and user-friendly. FT1 emphasises the growing need to invest in emerging markets, yet there are certain markets that pose challenges for investors. There is a pressing need for an investment platform that can effectively direct funds from international investors towards emerging markets. FT3 promotes the advancement of investment banks and investment institutions. There is a pressing need for angelic investment, providing an opportunity for FinTech ideas and startups to showcase their business and secure equity financing.

However, the volatility in emerging markets poses a challenge for investors. Based on FT3's analysis, the challenges of economic and political instability are apparent at a macro level, creating obstacles for investment and growth. On the other hand, there is a chance for success at the micro level, and investors have the freedom to work without constraints. One proposed solution involves registering the FinTech company in a country that offers economic and political stability. However, it should be noted that the target market for the company is in a country that is known for its instability, as mentioned by FT3. Some Pakistani companies have successfully positioned themselves as Singaporean FinTech startups, even though their primary operations and customer base are in Pakistan.

FT1 and FT5 suggest that certain investors perceive investing in FinTech as being riskier compared to traditional investment. Thus, it is crucial to organise an awareness campaign targeting fund providers to educate them about the risks associated with FinTech and dispel any misconceptions they may have about its riskiness compared to other investment options. In fact, FinTech investments can sometimes be less risky than alternative forms of investment.

The participation of FinTech startups in reputable programmes focused on project management, finance, risk management, and entrepreneurship would boost investors' trust in these startups and facilitate the funding process, as highlighted by FT4. Implementing a system where a trusted entity evaluates startups and offers suggestions to investors and capital providers would expand the investment opportunities for FinTech startups. FT6 emphasises the importance of prioritising investments in companies that promote financial inclusion and address the needs of underserved populations in the FinTech capital sector. This involves investing in companies that offer financial education and literacy programmes, as well as providing innovative solutions for small and medium-sized businesses.

The FinTech industry would greatly benefit from increased involvement in mergers, acquisitions, and collaboration. In emerging markets, it is advisable for financial institutions to consider acquiring emerging FinTech companies to enhance their operations and expedite their time-to-market. This topic has been extensively discussed in FT4 and FT5. It would also be advantageous for them to incubate these acquisitions separately before fully integrating them into their operations.

4.5 Opportunities and Challenges of FinTech Ecosystem in Emerging Markets

FinTech has the potential to expand the reach of finance, both within its core markets and beyond. The rapid increase in technological adoption in the financial sector has created a multitude of opportunities for FinTech, as consumers have become more accepting of online-based services. Here are some important areas of opportunity in the FinTech industry.

According to FT1, the younger generations in emerging markets are more inclined to embrace technological and financial services compared to their older counterparts. This trend reflects the growing digital presence in these markets. However, it is essential for the provided services to fully meet and comprehend the customer's requirements, as outlined by FT5. According to FT6 emerging market service providers must build customer trust, especially in the excluded areas, enhance security, and make it simple and accessible to everyone. Financial institutions should expand and focus on building out digital-only banking rather than more ' brick-and-mortar branches to leverage the young tech-savvy and high mobile.

Crowdfunding and other FinTech platforms have the potential to greatly enhance cross-border trade and financing. One of the primary challenges faced by startups and SMEs when seeking financing is the concern of becoming burdened with debt, as highlighted by FT6. However, with equity crowdfunding, there would be no need to worry about such concerns. One of the intriguing models in equity crowdfunding involves pre-vetted financing, where equity crowdfunding offers financial support to carefully selected and high-impact SMEs. This model would be well-suited for emerging markets, but it is crucial to have a trusted third party that can thoroughly assess the SMEs and offer their recommendations, as emphasised by FT6.

According to FT6, insurance technology has the potential to provide affordable coverage in developing markets. Nevertheless, the insurance industry in these markets continues to rely on traditional methods, with underwriting and claims settlement processes still lacking complete automation. Considering the strong sense of family and societal unity in emerging markets, mutual insurance may be a practical option. People in these markets are more inclined to embrace it when they perceive it as a collective ownership rather than a profit-driven system that evades claims. FT3 suggests that financial institutions in emerging markets can embrace open banking architectures, allowing FinTech companies to access their banking platforms and provide additional services directly.

Furthermore, there is a need for further exploration of social finance. The potential of social FinTech to utilise the vast social financing pool, which amounts to billions of dollars, to address the global social funding requirements outlined by the SDGs, is worth considering. FT6 notes that there is a lack of recognition for the potential of social FinTech in emerging markets, despite discussions about financial inclusion. However, it holds the promise of lifting over 30% of individuals living below the poverty line out of financial exclusion. By harnessing the capabilities of FinTech in this field, a greater number of people and small and medium-sized enterprises can reap the advantages of social finance initiatives.

However, the FinTech ecosystem in emerging markets encounters distinct challenges and risks that necessitate careful attention. Political and economic instability pose significant challenges for emerging markets, leading to uncertainty and volatility in the financial sector, as highlighted by FT3. According to FT4, it can be challenging for FinTech startups in emerging markets to obtain funding from conventional sources like venture capitalists or banks. This difficulty arises from the perceived risks and uncertainties associated with operating in these markets. This aligns with the intense competition from well-established players, like banks and financial institutions, who hold substantial market shares and resources.

The rise of scams and fraud in emerging markets, particularly in P2P and crowdfunding sectors, may be attributed to a lack of financial literacy and trust. Efficiency in funds collection can unfortunately facilitate fraudulent activities, as highlighted by FT6. In addition, FT5 pointed out that FinTech companies operating in emerging markets could be more vulnerable to cyber-attacks and fraud risks because of the less developed security and regulatory systems in place. In addition, the ease of borrowing may result in excessive debt, as highlighted by FT6. The accessibility of funds can lead individuals to borrow more than necessary and accumulate excessive debt.

Insufficient financial infrastructure may lead to increased financial exclusion, as FT6 pointed out. Several emerging markets lack sufficient or well-established financial infrastructure. Building and scaling businesses in the FinTech industry can be quite challenging. The absence of adequate financial infrastructure in numerous developing nations can pose challenges for financial services and discourage a significant number of individuals. In addition, the importance of digital and communication infrastructure cannot be emphasised enough in enabling fast internet speed, access, and smartphone usage, all of which are crucial for FinTech services.

Uncertain and strict regulations in the FinTech industry could potentially hinder the growth of FinTech in emerging markets, as highlighted in a discussion by FT1. It is crucial for emerging markets to establish clear and uniform regulations for FinTech services. Operating in this environment can be challenging for FinTech companies, as they may encounter various legal and regulatory obstacles. As a result, FinTech companies have the opportunity to collaborate with RegTech companies to ensure compliance with regulatory requirements (Jaradat, Al Zeer, & Areiqat, 2023).

Successfully navigating these challenges and risks will be crucial for the prosperity of FinTech ecosystems in developing economies. FinTech companies must establish strong partnerships with regulators, investors, and consumers to foster trust and confidence in their offerings. Additionally, they should prioritise investments in infrastructure, talent, and cybersecurity to ensure their long-term viability and expansion.

5. Conclusion

FinTech is a widely discussed subject these days, with a focus on its potential in emerging markets. Many believe it can help improve financial inclusion and contribute to sustainable development. This paper has identified the key components of the FinTech ecosystem, specifically talents, demand, policy, and capital, and has utilised them as a conceptual framework to examine their impact on shaping the FinTech ecosystem in emerging markets. The main objective of this research is to assess key aspects in the FinTech ecosystem in emerging markets and provide guidance for stakeholders in the FinTech industry.

In general, this study highlights important areas where FinTech in emerging markets can make a significant impact. The potential lies in its ability to propel financial services to new heights, bridging the gaps in financial inclusion within key markets and providing social financing to bring over 30% of the population into the fold of financial inclusion.

As a result, this research drew a roadmap for stakeholders in the FinTech ecosystem. As for the talents (academia, entrepreneurial, firms, startups, and financial institutions), the suppliers of FinTech services need to understand and appreciate the value of FinTech and translate it by providing innovative product. However, individuals with a strong academic background should prioritise enhancing their skills and fostering collaborations with financial institutions in the field of FinTech. Regarding the demand for FinTech, there is a high demand among consumers, but other stakeholders have not shown the same level of interest. Government, clients, corporates, and financial institutions have unique requirements compared to regular customers; FinTech providers must have a deep understanding of their customers' needs to offer products that are tailored to meet those needs. Customers would benefit from increased protection to fully engage with FinTech. Efforts should be made to focus on the demand side through tailored awareness programmes that effectively capture their attention and foster trust. However, FinTech can effectively convey its message through word-of-mouth.

When it comes to the FinTech policy (government and regulators), it is crucial for policymakers to strike a delicate balance between ensuring consumer protection and fostering the continued growth and innovation of FinTech. In this scenario, a more relaxed regulatory approach appears appropriate, particularly in the context of emerging markets. This approach streamlines complex regulations and facilitates the acquisition of new customers. It is important for policymakers to actively participate in regional agreements in the field of FinTech. Therefore, it is crucial for the government and regulators to establish a FinTech Task Force equipped with a comprehensive action plan for FinTech. When it comes to the FinTech capital (angel investors, VC investors, IPO investors),

FinTech presents a global investment opportunity. However, investing in certain markets may not be as straightforward for these investors. Nevertheless, the political and economic instability in emerging markets poses a challenge for investors. It is crucial to analyse the investment prospects and opportunities in these markets on a smaller scale and boost investors' trust in them. In addition, FIs and FinTech companies are expected to increase their involvement in mergers, acquisitions, and cooperation activities.

Finally, FinTech presents numerous opportunities in emerging markets. It promotes greater access to financial services, enhances living standards, and fosters a more sustainable financial ecosystem. Nevertheless, the FinTech ecosystem in emerging markets encounters distinct challenges and risks that demand careful attention. These include political and economic instability, limited financial literacy and trust, inadequate financial infrastructure, and uncertain and stringent regulations.

5.1 Implications

5.1.1 Managerial Implications

This study provides important insights for managerial decision-making in FinTech in emerging markets. It highlights the importance of developing skills and fostering creativity within organisations, focusing on a customer-focused approach that meets the growing consumer demand for FinTech. It is important for policymakers to create a regulatory environment that strikes a balance between protecting consumers and fostering the growth of FinTech. It motivates investors to acknowledge and take advantage of the potential of FinTech in these markets, despite the prevailing political and economic instabilities, and to facilitate mergers and acquisitions. Lastly, it emphasises the impact of FinTech on society, improving quality of life, and supporting long-term growth. These findings provide valuable insights for managers in the FinTech and financial industry, emphasising the importance of fostering innovation, encouraging collaboration, and prioritising consumer protection.

5.1.2 Academic Implications

The study has some limitations, including a narrow geographic scope and a lack of diversity among participants. In addition, the ever-changing political and economic situations in developing countries, along with the rapid progress of financial technology, could potentially undermine the significance or accuracy of the findings in the future. Considering the limitations, future research efforts could concentrate on examining FinTech ecosystems in various emerging economies to uncover specific challenges and opportunities at a smaller scale. Using longitudinal studies to monitor the development of the FinTech industry and comparing different emerging markets can provide a deeper understanding. Moreover, focusing on the impact of FinTech on various societal sectors, like healthcare, education, and agriculture, could uncover new areas for research.

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