



Faculty of Technology Management and Technopreneurship

**DETERMINANTS OF BEHAVIOR INTENTION ISLAMIC FINTECH
IN INDONESIA: THE INTEGRATION OF UTAUT2 AND SERVICE
QUALITY**

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

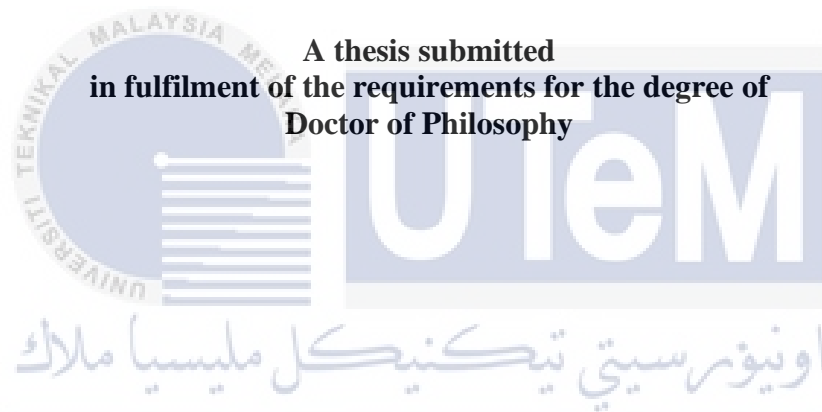
Dedi Wibowo

Doctor of Philosophy

2024

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DEDI WIBOWO



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2024

DEDICATION

This thesis is especially dedicated to my family,
Wiwip Wilevy and Muhammad Fauzan Rizqi Wibowo
my Father, and my Mother.



ABSTRACT

Indonesia, home to the world's largest Muslim population, holds immense potential to lead the global Islamic banking and Islamic FinTech revolution. However, the current landscape presents a stark contrast, with the limited market share of Islamic banking falling short of expectations. Out of 330 licensed FinTech's in Indonesia in 2023, only 28 adhere to Islamic economic principles, a discrepancy considering the substantial market potential for Islamic financing. This study addresses the gap of shaping factors assessment of Behavioral Intentions and moderating role of Religiosity in the use of Islamic FinTech in Indonesia. Utilizing UTAUT2 extended with Service Quality, the factors of Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Hedonic Motivation (HM), Facilitation Condition (FC), Price Value (PV), Habit (HA) and Electronic Service Quality (ESQ) on Behavior Intention (BI) are examined. This research also investigates moderating role of Religiosity (RE) on PE, SI, FC and HA toward BI of Islamic FinTech in Indonesia. The goal of this study was to provide a conceptual model for Islamic FinTech in Indonesia to enhance their systems. A comprehensive online questionnaire, as the primary data collection, was administered to 509 valid responses users' samples. Descriptive statistics were used for data analysis, while Structural Equational Modelling (SEM) via Partial Least Square Model (PLS) examined the relationships between variables. This study found that SI, FC, HA and ESQ have significant influences on Behavior Intention of Islamic FinTech in Indonesia with T-statistics above 1.96 and P-values less than 0.05. Furthermore, pivotal finding was the identification of Religiosity as moderating role of Performance Expectancy, Social Influence, Facilitating Condition and Habit toward Behavior Intention of Islamic FinTech in Indonesia. These results contribute significantly to the existing knowledge base, offering valuable insights to enhance the performance of Islamic FinTech in Indonesia. The proposed factor model not only provides a framework for influencing Behavioral Intention within the sector but also suggests improvements to operational efficiency and effectiveness. This study is poised to make substantial contributions to the managerial and policy frameworks of Islamic FinTech firms, fostering a more robust and responsive industry in Indonesia.

**PENENTU TINGKAH LAKU PENGGUNAAN TEKNOLOGI KEWANGAN ISLAM DI
INDONESIA: INTEGRASI UTAUT2 DAN KUALITI PERKHIDMATAN**

ABSTRAK

Indonesia, rumah kepada populasi Muslim terbesar di dunia, mempunyai potensi besar untuk menerajui perbankan Islam global dan revolusi FinTech Islam. Walau bagaimanapun, landskap semasa menunjukkan perbezaan yang ketara, dengan bahagian pasaran perbankan Islam yang terhad kurang daripada jangkaan. Daripada 330 FinTech berlesen di Indonesia pada 2023, hanya 28 yang mematuhi prinsip ekonomi Islam, percanggahan memandangkan potensi pasaran yang besar untuk pembiayaan Islam. Kajian ini membincangkan jurang faktor pembentukan, penilaian Niat Tingkah Laku dan penyederhanaan peranan Keagamaan dalam penggunaan FinTech Islam di Indonesia. Menggunakan UTAUT2 yang diperluaskan dengan Kualiti Perkhidmatan, faktor Jangkaan Prestasi (PE), Jangkaan Usaha (EE), Pengaruh Sosial (SI), Motivasi Hedonik (HM), Keadaan Fasilitasi (FC), Nilai Harga (PV), Tabiat (HA) dan Kualiti Perkhidmatan Elektronik (ESQ) pada Niat Tingkah Laku (BI) diperiksa. Penyelidikan ini juga menyiasat peranan penyederhanaan Keagamaan (RE) terhadap PE, SI, FC dan HA ke arah BI FinTech Islam di Indonesia. Matlamat kajian ini adalah untuk menyediakan model konseptual untuk Teknologi Kewangan Islam di Indonesia untuk meningkatkan sistem mereka. Soal selidik dalam talian yang komprehensif, sebagai pengumpulan data utama, telah diberikan kepada 509 sampel pengguna respons yang sah. Statistik deskriptif digunakan untuk analisis data, manakala Pemodelan Persamaan Struktur (SEM) melalui Model Kuasa Dua Terkecil Separa (PLS) mengkaji hubungan antara pembolehubah. Kajian ini mendapati bahawa SI, FC, HA dan ESQ mempunyai pengaruh yang signifikan terhadap Niat Tingkah Laku FinTech Islam di Indonesia dengan statistik T melebihi 1.96 dan nilai P kurang daripada 0.05. Tambahan pula, penemuan penting ialah pengenalanpastian Keagamaan sebagai peranan penyederhanaan Jangkaan Prestasi, Pengaruh Sosial, Memudahkan Keadaan dan Tabiat terhadap Niat Tingkah Laku FinTech Islam di Indonesia. Keputusan ini menyumbang dengan ketara kepada pangkalan pengetahuan sedia ada, menawarkan pandangan berharga untuk meningkatkan prestasi Teknologi Kewangan Islam di Indonesia. Model faktor yang dicadangkan bukan sahaja menyediakan rangka kerja untuk mempengaruhi Niat Tingkah Laku dalam sektor tetapi juga mencadangkan penambahbaikan kepada kecekapan dan keberkesanan operasi. Kajian ini bersedia untuk memberi sumbangan besar kepada rangka kerja pengurusan dan dasar firma FinTech Islam, memupuk industri yang lebih teguh dan responsif di Indonesia.

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LIST OF PUBLICATIONS

The following is the list of publications related to the work of this thesis:

Wibowo, D and Bakri, MHB., 2024. "Determining factors in the Adoption of Fintech of Sharia in Indonesia: Analysis of the Effect of Utaut2, Es-qual, and Religiosity," *Edelweiss Applied Science and Technology, Learning Gate*, vol. 8(4), pages 1333-1346.
<https://doi.org/10.55214/25768484.v8i4.1510>

Wibowo, D., and Hariri Bakri, M., 2024. Understanding Islamic Financial Technology Adoption in Indonesia: The Integration of Utaut, Es-Qual, and Religiosity. *Journal of Accounting and Finance Management*, 5(3), 230–247.
<https://doi.org/10.38035/jafm.v5i3.580>

Kusuma, H., and Wibowo, D., 2020. The Impact of Service Quality, Technology Acceptance and Religiosity on The Selection of Islamic Bank and FinTech – Investigating The Stagnation of Indonesian Islamic Banking. *Proceedings of the 1st International Conference on Islam, Science and Technology, ICONISTECH 2019, 11-12 July 2019, Bandung, Indonesia*, 2020. EAI.



CHAPTER 1

INTRODUCTION

1.1 Background

Innovation, technology, and developments in information and communication technology have invaded every aspect of human life as a consequence of subtle but discernible changes in the economic landscape. According to Lumineau et al. (2023) and Malik et al. (2024), the fourth industrial revolution is different from its predecessors in terms of pace, complexity, and transformational capabilities. According to Madakam et al. (2022), AI that relies on hyper-connectivity and hyper-automation is at the forefront of this transformation. Digitalization is the defining feature of our age, and it has compelled company owners to undergo digital transformation in areas such as internal processes, models, governance, and capabilities (Ghosh et al., 2022). This industrial revolution's disruption effect is like a vortex that eliminates the competitive advantage constraint; thus, all aspects are digitized optimally (Liang and Tan, 2024). One form of the established industry, digital disruption, has evolved in the financial sector. The business called FinTech or Financial Services and Technology has been disrupting the financial business for innovative ways to retain existing customers and attract new markets (Elsaid, 2023; Wang et al., 2023). Also known as "FinTech," these services use cutting-edge tech to improve financial transactions and ultimately benefit clients (Taherdoost, 2023).

While arranging a partnership with the Smart Card Forum in early 1990, Citicorp Chairman John Reed first mentioned FinTech. Essentially, it is described as financial innovation made feasible by IT (Puschmann, 2017; Li et al., 2023). Some sources define financial technology as a subgroup of the financial services industry that use innovative

technology to enhance the future satisfaction of clients (Taherdoost, 2023). As of July 2023, the tradable FinTech had a market value of US\$550 billion, a growth of 100% according to McKinsey (Lindsay et al., 2023). Payment systems, asset management, lending, crowdfunding, capital markets, and insurance are all part of the present FinTech landscape, which also includes traditional and shared models (Lee and Shin, 2018).

Innovations in FinTech have made it easier and faster for individuals to conduct financial transactions. With its rapidly expanding user populations worldwide, FinTech demonstrates a broader user reach in financial services. Customers are more swayed by the perceived benefits of FinTech adoption than by the risks. Promising zero poverty, eradicating hunger, and guaranteeing food security are all Sustainable Development Goals (SDGs) and United Nations Development Program (UNDP) priorities, and the benefits of FinTech adoption to communities align with these goals (Hudaefi, 2020). A circular economy helps maintain the environment while bolstering the cause of clean energy adoption. Customers may make better use of FinTech goods and services if they are aware of the potential advantages and drawbacks of using them (Mahmud et al., 2023; Gupta et al., 2024). It is insufficient to be open to new financial services and solutions (Yun et al., 2021). Society must foster an environment that encourages open innovation to speed up the adoption of FinTech. The recent COVID-19 outbreak has shown that individuals may become tech-savvy quickly and are compelled to handle their finances online.

Bapat (2022) characterized FinTech as a digital instrument for financial operations. Research by Mohamed and Ali (2019) following banks and other financial institutions have found FinTech to be an effective tool (Chinnasamy et al., 2021), and it has completely revolutionized the financial services market (Palmié et al., 2020). FinTech acts as a trusted financial intermediary, enabling people to conduct financial transactions and aiding them in their daily lives globally. Their methods of conducting financial transactions have been

revolutionized by technological advancements and the instruments they make available (Todorof, 2018). An excellent and trustworthy indication of the expansion of FinTech is the increasing investment in this area worldwide. Statistics reveal that by 2020, Global venture capital funding has grown 17% YoY, reaching over US\$ 33,3 billion (Lindsay et al., 2023).

Even if it's having a detrimental impact, market leaders are nonetheless pouring a lot of money into banking sector innovations (Chen et al., 2019). According to Gomber et al. (2018), new technological developments and processes are causing a stir in the financial services industry. Customers are free to choose and fully embrace a variety of services that meet their needs, made possible by the availability of information disclosure. Modern IT systems are the key to better financial services, and they are the ones that set off the data leak (Karim et al., 2022).

Information technology has driven the financial service business's significant transformation and influenced consumer behavior changes. (Pousttchi and Dehnert, 2018). Another study conducted by Haddad and Hornuf (2019) explained also that FinTech companies have disrupted traditional financial institutions. The research found that FinTech companies will develop economies (Vergara and Agudo, 2021). The research also highlighted that the presence of a secure and sufficient internet infrastructure, the efficiency of community technology adoption, and the availability of skilled information technology professionals all contribute to the expansion of FinTech firms.

Additionally, along with the significant growth of the internet globally, many more companies also consider that information technology in financial services creates better profits. Google, Samsung, and Apple have started new businesses in the financial services sector with Google Pay, Samsung Pay, and Apple Pay (Henry, 2016; Al-Busaidi and Al-Muharrami, 2021). This is a threat to the banking industry. This potential threat is also becoming more prominent. At the same time, strategic integration is being created by

technology companies with various large-scale global banks, such as ANZ and Commonwealth, and global payment system networks, such as Visa and Mastercard (Halliday, 2018). Strategic cooperation provides convenience for customers, but on the other hand, this has created a situation when the income of traditional banks is reduced significantly. In other words, FinTech with noble technology will make the business more competitive and sustainable and be considered a threat to traditional banks, including Islamic Finance (Sidaoui et al., 2022).

Despite the increased emphasis placed on FinTech by professionals, according to Milian et al. (2019), the term FinTech and the theories that support it are not universally agreed upon. The term "FinTech" was coined by Stewart and Jürjens (2018) To describe the use of mobile devices and technological platforms for financial transactions, such as receiving alerts about debits through push notifications through short messaging services, applications, or other notification methods, and accessing bank accounts and credit information. Islamic FinTech is defined by Ayedh et al. (2019) and Rabbani et al. (2021) As financial services and technology that follow Islamic principles and Islamic law.

Innovations in technology are causing a sea change in the financial technology industry. The financial industry is undergoing a shift as a result of this technological improvement, which includes new funding techniques such as e-finance and mobile technologies. Opportunities and challenges are presented by the fact that technology is the primary driver of the company. According to Miskam et al. (2019). In FinTech development and implementation, a country like the Malaysian government assists in the development and implementation of FinTech. Bank Negara Malaysia assists Malaysian banks, leading to most banks adopting FinTech and other digital technologies. According to Tun-Pin et al. (2019), this allows them to create a digital platform that caters to their clients. While Malaysia is well-known as a hub for Islamic banking, the country is still making strides in

FinTech. Malaysian Islamic financial institutions have provided state-of-the-art technical support to Southeast Asian countries (Shaikh et al., 2020). Studies indicate (Acar and Çitak, 2019; Milian et al., 2019; Breidbach et al., 2020) that an absence of research has investigated the implementation of Islamic FinTech using either empirical or non-empirical approaches. The process of integrating FinTech into the global Islamic economy, particularly Islamic FinTech, is well shown in Figure 0.1 Mapping Islamic FinTech Ecosystem. Miskam et al. (2019) assert that FinTech may revolutionize the Islamic financial sector by increasing operational efficiency, decreasing costs, broadening market penetration, guaranteeing adherence to Islamic law, and fostering financial inclusion (p. 223). Currently, Malaysia is known as a leading country on a global index of Islamic FinTech (Dinar Standard, 2022a).

As far as the media is concerned, FinTech is often considered a hip and happening word. The financial industry, innovation (including technological centers and investments), and information technology (IT) are all interdependent on FinTech, according to Milian et al. (2019). FinTech, combining the words "finances" and "technology," first appeared in the scholarly literature in 1972. The reference is from a study conducted by Milian, et al. (2019). In addition, Abraham Leon Bettinger, a vice-chair of the Manufacturers Hanover Trust, coined the term "FinTech" to describe the merging of banking expertise with cutting-edge management science methods and technology. (Bettinger, 1972). It may also be spelled FinTech, Fin-Tech, or Fin-Tech, among others (Milian et al., 2019). The term "FinTech" is continuously used throughout the book to refer to the current study. A few Islamic financial service providers are now contemplating the adoption of FinTech. They include Saudi Arabia, the UAE, Malaysia, Bahrain, Brunei, Indonesia, Oman, etc.

Muslims and non-Muslims alike are becoming more interested in Islamic finance (Dharani et al., 2022). Sharia law, often known as Islamic law, establishes a code of conduct for all monetary dealings (Rabbani et al., 2021; Naeem et al., 2023). Banna et al. (2021)

suggests that Islamic finance may benefit greatly from FinTech. society is now impossible to fathom contemporary life apart from technology, which has become an essential and ubiquitous part of society (Banna et al., 2022). The rise of ICT has a profound impact on the social and economic conditions in many developing countries. The financial technology sector is revolutionizing the world's financial markets (Abbasi et al., 2021).

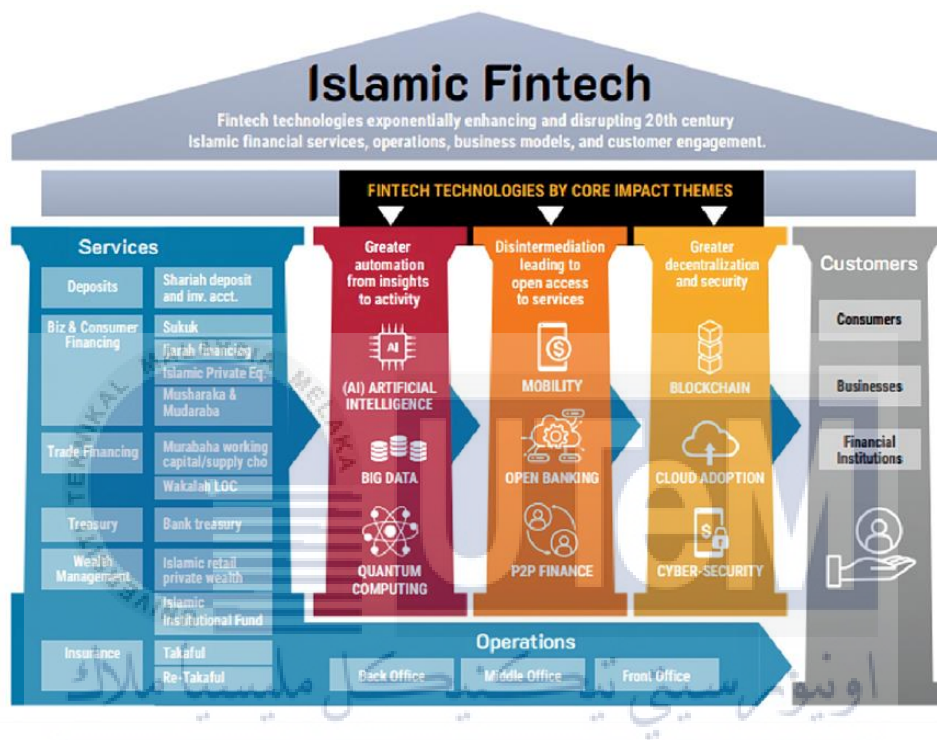


Figure 0.1 Mapping Islamic FinTech Ecosystem

Source: Dinar Standard (2022)

One way in which Islamic FinTech differs from conventional FinTech is because it is based on Sharia law (Rabbani et al., 2021). Incorporating the terms "Islamic" and "FinTech," the term is completely original. The first one addresses the use of technology to provide financial services, while the second one describes the conduct of financial transactions in accordance with Sharia law. Any Islamic financial transaction that does not adhere to Sharia law's standards is prohibited from employing technology (Ayedh et al., 2019; Mohd Haridan et al., 2023). Modern innovations in technology, such as blockchain, AI, cryptocurrencies, Regulatory Technology (RegTech), crowdfunding, and peer-to-peer

lending, have found their way into Islamic finance (Khan et al., 2021; Rabbani et al., 2021; Karim et al., 2022; Alsaghir, 2023; Ben Salem and Ben Abdelkader, 2023). FinTech essentially refers to executing financial transactions using groundbreaking and revolutionary technology (Karim et al., 2022), whereas Islamic FinTech specifically operates within the framework of Sharia principles (Khan et al., 2021). Given the increasing demand for sharia-compliant financial solutions among Muslims worldwide, as shown in Figure 0.1 Mapping Islamic FinTech Ecosystem, Islamic FinTech is a rapidly expanding market. To further enhance its growth, FinTech can play a crucial role by improving accessibility, efficiency, and transparency in the Islamic finance industry.

Among the many reasons for the rapid development of technological solutions in the financial sector are the need to increase client happiness and decrease opportunity costs. Bank efficiency has been enhanced as a result of the ease and speed with which individuals may receive financial services over the internet (Rabbani et al., 2021; D. Liu et al., 2023; Liao, 2023). Islamic financial technology (Islamic FinTech) is essential for the attainment of Islamic finance's tenets, such as equitable wealth distribution, social justice, and financial inclusion (Baber 2020a). In order to accomplish this goal, Islamic social finance services such as microfinance (Ben Salem and Ben Abdelkader, 2023), zard (Rabbani et al., 2021), and Qardh-Al-Hasan (Khan et al., 2021) might be provided via the use of blockchain technology and artificial intelligence.

Research by Lee and Shin (2018), Mostafa and Eneizan (2018), Chong (2021), Fu and Mishra (2022), and Mazambani and Mutambara (2020) illustrates the benefits of FinTech. Their findings indicate that FinTech improves openness, accessibility, and flexibility while decreasing risk and increasing profits for shareholders. In addition, the advent of ubiquitous mobile internet connectivity may explain the meteoric rise of FinTech. Global organizations for mobile communication systems have forecasted that the number of

mobile internet users will exceed 5 billion by 2025 (Hendratmi et al., 2019). These considerations indicate that the FinTech industry will grow significantly and rapidly in the following years (Chinnasamy, G. et al., 2021).

Indonesia, being a developing nation, has constraints in terms of financial resources and infrastructural development. Moreover, a substantial segment of the population lacks access to financial services. FinTech can potentially revolutionize the provision of economic goods to the presently underserved and financially excluded people in Indonesia. According to Otoritas Jasa Keuangan (2022), Indonesia's financial Inclusion was 76.19% in 2019, increasing by 8.91% to 85.10%, or 41 million people cannot access banking services.

Table 0.1 Indonesia Financial Literation and Inclusion

Index	2019	2022
Financial Literation	38,03%	49,68%
Financial Inclusion	76,19%	85,10%

Source : Otoritas Jasa Keuangan (2022)

FinTech may be advantageous for those unable to access traditional banking services, especially in peer-to-peer finance. This possibility is backed by the demographic that utilizes mobile telecommunications in Indonesia. According to Davis et al. (2017), the mobile phone penetration rate in Indonesia is 85 percent, while the internet use rate is 64.8 percent. This demonstrates that Indonesian culture is receptive and prepared to embrace advancements. FinTech adoption in a nation is thought to address unmet demand and enhance financial inclusion in society (Frost et al., 2021). Consequently, Indonesia has garnered a positive perception among international investors (Hendratmi et al., 2019). The Indonesia Financial Authorities, also known as Otoritas Jasa Keuangan-OJK, have registered a total of 330 FinTech businesses as of 2023 (Otoritas Jasa Keuangan, 2023), also FinTech in Indonesia growth significantly, as mentioned by BCG as Figure 0.2 Number of Indonesia FinTech by Segment.

Rapid growth in the number of fintech players

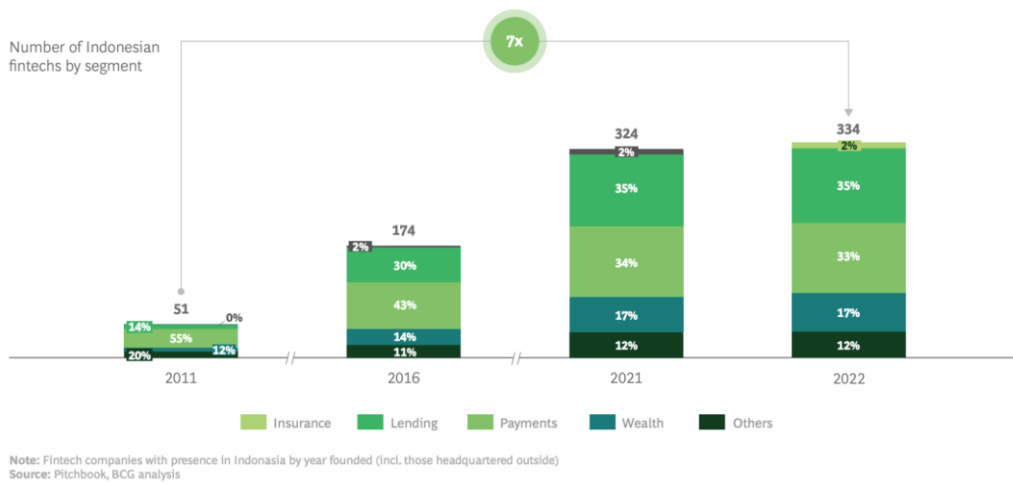


Figure 0.2 Number of Indonesia FinTech by Segment
Source: FinTech News Indonesia (2023)

Puschmann (2017) noted that Indonesia has embraced the global trend of Islamic FinTech, offering customers a new value proposition through digital financial services. Islamic Finance, rooted in Islamic principles, was introduced in Indonesia in 2018 and led by the pioneering FinTech business Ammana (Ammana, 2018). Since then, the Islamic FinTech industry in Indonesia has seen substantial growth. As of 2023, the Otoritas Jasa Keuangan (OJK) has registered 28 Islamic-based FinTech businesses in Indonesia, covering diverse FinTech models. Some firms cater to specialized economic sectors such as real estate, agriculture, and animal husbandry. According to The Chairman of the OJK Board of Commissioners Wimboh Santoso, FinTech presents a significant opportunity for the Islamic financial sector to increase its market share (Nurita, 2018) and transaction growth. The growth trajectory of Islamic FinTech for major Islamic countries and Indonesia's position among those countries is shown in Figure 1.3 Islamic FinTech Growth Trajectory, highlighting the industry's potential for further growth and development, a promising outlook for the future.

While 0.7% of global Fintech transaction volume, Islamic Fintech in OIC countries poised to grow at 21% CAGR through 2025

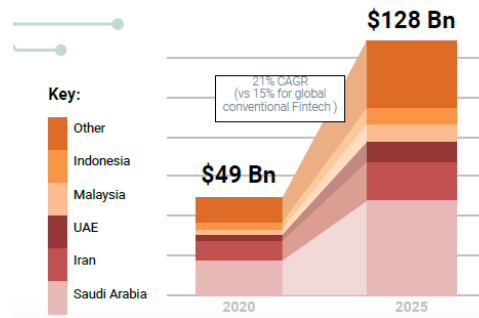


Figure 0.3 Islamic FinTech Growth Trajectory
Source : Dinar Standard, (2022a)

Financial technology (FinTech) and digital platform adoption for business purposes was studied by Shaikh et al. (2020). The factors that influence the intention to invest in fintech peer-to-peer lending platforms for Malaysian consumers were investigated by Thaker et al. (2019). To find out what factors influence people's propensity to use Islamic FinTech in Indonesia, researchers Yuspita et al. (2019), Darmansyah et al. (2020), and Purwantini et al. (2020) used an empirical study approach. The study was conducted using the following models: TAM, TPB, and UTAUT, which stand for unified theory of acceptance and use of technology. Most studies on Islamic banking and finance have focused on Islamic bank performance (44%), stock market performance (24%), market interaction 15%, and asset pricing 7%, according to Narayan and Phan (2019). Although FinTech has caught the attention of stakeholders, its long-term use might be enhanced. This study fills a gap in the literature by investigating what factors in Indonesian consumers' decision to adopt Islamic financial technology (FinTech) services such as crowdfunding, P2P lending, and payment systems. This study makes use of ES-QUAL, which was created by Parasuraman et al. (2005) and integrates the idea of religiosity, as well as UTAUT2, which was suggested by Venkatesh et al. (2012). Johar and Suhartanto (2019), Alharbi et al. (2022), Usman et al. (2022), and Sebayang et al. (2024) found that customers' religiosity is a major influence in