

# Exploring Digitalization of Malaysian Banking and Fintech Companies' Services from the Customer's Perspective

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## **Abstract**

This paper aims to explore the process of digitalization of the financial services provided by Malaysian banks and FinTech companies and to address the issues and challenges they face. Both secondary and primary sources are used in this study, where the latter represented by questionnaires and in-depth interviews with the banking and FinTech practitioners. The qualitative aspects of the Analytical Network Process method are used to identify and analyze economic, regulatory, and operational issues faced by banks and FinTech institutions in the process of digitalizing financial services. The findings provide useful insights on whether the policies set by Bank Negara of Malaysia either accelerate or hinder the growth of Malaysia's digital finance sector. The challenges faced by banks and FinTech companies, while digitalizing their financial services, are quite similar. They include the concerns of cyber security, lack of customer readiness in utilizing the financial services, particularly in rural areas, and the need for financial authorities to maintain stronger consumer and investor protection due to high pace of evolution of financial technology. It was also noted that customers have evolving expectations towards digital financial services, because they want seamless digital banking solutions to meet their daily needs. Previous studies had their focus on the benefits and impact of digital finance on financial inclusion as well as financial innovation. This research takes a different approach as it reflects on the impact of digitalization of financial services provided by banks and FinTechs through the prism of customer perspective.

**Keywords:** Digitalization, Digital financing, Digital Banking Services, Customer Satisfaction

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## **1. Introduction**

Digital banking allows users to conduct all banking needs including checking balance and making payment online or on their mobile phones. Today, nearly all banks offer digital option for their users to manage their accounts remotely without being physically present at the bank's premises. There is also an increasing number of digital-only banks that are transforming the banking sector. To a certain extent, COVID-19 accelerates the adoption for digital banking due to temporary bank branch closure and fear of exposure to COVID-19 and thus created a forced-adoption effect (Pearce et al., 2021).

Over the past decade, finance institutions have relied on in-person banking and added customer servicing journeys available through digital channels with two main purposes: to achieve cost efficiencies by the institutions and deliver convenience to customers. However, this approach delivers a "one size fits all" solutions to users with different attitudes towards technology adoption (Bastari et al., 2020) and varied financial life stages (Pearce et al., 2021). While the younger generations typically have a certain level of experience and knowledge to manage bank accounts using mobile applications, the older generation has difficulties in adopting digital channels safely and efficiently (Pirhonen et al., 2020). Additionally, non technology-savvy retirees generally spend less and they are more risk averse than the younger generations, requiring different financial products and services (Pearce et al., 2021). The process of digitalizing financial services should not just transform existing services into digital version; on top of that, the functionalities should also be redefined and new digital opportunities should be explored (Parviainen et al., 2017).

In recent years, advancements in technology led many banks to introduce a wide variety of banking services to the Malaysian banking system as part of their business model. To keep up with the intensified competition in the market more banks chosen to proceed with digitalization of the existing processes into digital technologies (Bastari et al., 2020) Digitalization is possible through technology which involves machine learning, a high degree of automation, leveraging cloud solutions, analytics, and artificial intelligence.

The COVID-19 crisis and the subsequent economic disruption it has caused have also had a significant impact on financial institutions globally. Many researchers moted the rise of financial inclusion as COVID-19 boosted the adoption of digital financial services (Ojo, 2022; Qiang et al., 2022; World Bank, 2022). The pandemic has pushed many customers, especially in the older cohorts, to use digital payments for the first time (Pearce et al., 2021). Customers became much more aware of digital banking features than before and at the same time, the digitalization of financial services accelerated during the pandemic, and customers had no choice but to embrace the use of digital channels due to COVID-19 mobility restrictions.

In 2022, the Malaysian central bank, Bank Negara Malaysia, issued five digital bank licenses. This demonstrates the importance of financial services evolution in Malaysia. However, only one of four businesses that received digital banking license from the

Monetary Authority of Singapore in 2020 is still operating in 2022 (Guild, 2022) and this fact suggests that digital banking is still at its early stage in South East Asia. Hence, digitalization of financial services gives a competitive edge to banks and Fintech companies in Malaysia.

This paper explores the key challenges faced by banks and Fintech companies in the process of digitalizing financial services and identified priorities that firms may consider while dealing with these challenges. The customer satisfaction survey has been conducted in order to identify major factors that lead to customer satisfaction or dissatisfaction in using digital financial services. Additionally, customer acceptance of digital financial services provided by traditional banks is discussed aiming to determine whether or not their digital services meet customer expectations and at par with those provided by FinTech companies. Lastly, the paper explores the potential risks digital finance represents to Malaysian banks and FinTech companies and the challenges in digitalizing financial services. The findings of this study provide useful insights to service providers and policymakers involved in digitalization of financial services.

The research objectives of this study are:

1. to identify the key challenges faced by banks and Fintech companies in the process of digitalizing financial services;
2. to identify the most important factors influencing customer satisfaction when using digital financial services;
3. to determine the major risks of digital finance to Malaysian banking institutions and the challenges in digitalizing Malaysian banking institutions.

## **2. Literature Review**

The banking industry is slowly transforming from providing financial products and services in brick-and-mortar physical branches into delivering digital financial services in virtual locations. In this transformation, banks and financial institutions face a range of obstacles, from increased operational complexity to new forms of competition and constantly evolving technologies, such as digital assets and block chain technology. Banks not only face increased competition from other banks but also new entrants and other intermediaries who are becoming more market-based, competitive, and digital. The digital disruption of the financial service industry is leaving incumbents with overextended physical branch networks and often obsolete technologies to serve the customers that competitors can provide at a more competitive price and shorter waiting time (OECD, 2020). Customers have new expectations when comes to digital financial services: they want simple and seamless transactions and at the same time a customer-centric environment (Levertov, 2021).

FinTech sector can be understood as “the use of innovative information and automation technology in financial services” (OECD, 2020: 7). The terms “digitization” and “digitalization” are always used interchangeably in a wide range of literature. While digitization essentially refers to changing analog information to digital format, digitalization is about transforming business operations with digital

technologies (Bloomberg, 2018). Digitalization is a process which transforms industry through digital technologies and it involves a high degree of automation, leveraging cloud computing, machine learning, and artificial intelligence. The heart of digitalization is change in essence of jobs, business processes and technology. The profile of jobs changes as manual transactions gives place to automation. This process makes some jobs obsolete, while new jobs are being created to cater new demands. For example, FinTech firms have identified unmet customer needs in payments and advisory services (OECD, 2020), many of these firms aim to recruit highly-skilled engineers and experienced customer services specialists to serve their customers (McMurray, 2022), while traditional banks are cutting jobs at the time of writing in order to stay cost competitive (Kahl, 2018; Pooley, 2022).

The following sections will look at advantages and disadvantages of digitalization, digital financial services in Malaysia and factors that lead to customer satisfaction when using digital financial services.

### *2.1. The digital financial services provided by banks vs. FinTech companies*

FinTech includes software, mobile applications, and other technologies designed to enhance efficiency for service providers and offer convenience to consumers. PayPal is an exemplar of FinTech because it is one of commonly used online payment methods and it also nearly dominates mobile payment market. Most customers and merchants prefer using PayPal while purchasing and selling online. PayPal can also be used to transfer money between one person and another without relying on interbank transfers. Similar to online shopping, customers need to deposit funds from the traditional bank account to PayPal account through the use of the bank issued credit or debit card; after that, customers can then transfer the money from one PayPal account to another.

The change to digital currency, online purchasing and transactions are rather new. As such FinTechs still require customers to have physical cash deposited at a traditional bank. While services provided by FinTechs greatly diminish the need to visit the bank in person and by that making the use of banking services easier, it is impossible to detach from traditional banks completely as physical cash still circulates in the marketplace and therefore a bank account is often required to fund online purchasing or to convert digital currency to cash.

The introduction of digital currencies brought a certain degree of disruption to the banking sector. The value of cash and its capacity to serve as a reliable monetary anchor are being undermined by the digitization of payments. However, the inherent drawbacks of digital currencies, such as regulatory uncertainty, make them a speculative investment instead of a useful store of value that can be retrieved and exchanged in the future without deteriorating in value (OECD, 2020).

Cryptocurrency is a prominent digital currency distinctively different from PayPal. It does not require bank or any other financial authority to support or maintain it. Instead it is exchanged through a computer network (Royal and Voigt, 2022). Cryptocurrency

can be converted to cash at a cryptocurrency exchange platform (e.g. Coinbase Global, Inc.). Due to lack of regulations and control, cryptocurrency tends to be volatile that is the price of a cryptocurrency asset can move up and/or down over a period of time significantly. In practice, cryptocurrency and cryptocurrency exchange platforms can experience bankruptcies (e.g. FTX Trading).

Although some FinTech firms have successfully changed the provision and consumption of financial services, they did not become dominant players in the financial services industry due to high switching costs for the customers have been adapting FinTechs innovative offerings (OECD, 2020). Moreover, incumbents have accumulated information capital and substantial size of funding due to their banking charters. It is therefore unsurprising to notice a number of FinTech firms that have formed partnerships with traditional banks as a part of the growth strategies. The strategic partnership of global banking giant HSBC and digital invoicing platform Tradeshift to provide integrated financing solutions via apps is a good example here (Arslanian and Fischer, 2019). It illustrates that the traditional banks derive benefits from access to technological advances and new customers of FinTech firms, whereas FinTechs benefit from established brands, economies of scale, and distribution channels of the partnering banks (OECD, 2020).

### *2.2. The factors that affect customer satisfaction in using digital financial services*

The success of any service or product offered to customers is determined by the feedback received from the customers. A service or product can be considered good or a success, only if the customer is satisfied with it. This can further mean that the customer would refer the service or product to their peers resulting in the expanding customer base of the product or service. As such the success and development of FinTech is determined by the satisfaction of the customers appreciating the functionality of financial service or product. Some of the factors that relate to customer satisfaction with FinTech offerings include a more advanced security, effortless connectivity, perceived ease of use, reliability and continuous improvements (Jun and Palacios, 2016). Levertov (2021) also asserts that to ensure customer's expectations of digital financial services they need to be customer-centric, user-friendly, secure, and providing seamless transactions.

Traditional banking can be quite tedious. Visiting the bank physically and waiting in queue for extended periods of time proved to be particularly draining for the customers and resulting in the increased workload, stress and fatigue of bank workers. These issues have been considerably mitigated by introduction of financial technology and online banking (Binti Abdul Rani, 2021). The swiftness of receiving the services, whether it be transferring funds, depositing cash, online payments of bills can all be done through smartphones at the flick of a button, if FinTech functions and used correctly. Therefore, any FinTech must cater to the factor of swiftness of service, easiness and reliability of use to be deemed satisfactory by customers.

### *2.3. Digitalizing financial services in Malaysia*

Since the 1970s, the banking system in Malaysia has undergone a gradual deregulation process. The Malaysian banks and finance institutions have actively

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developed electronic banking services since the mid-2000s. Table 1 illustrates that the number of users using e-payments in Malaysia from 2017 to 2021 has been growing steadily.

**Table 1: Transactions per capita in Malaysia from 2017 to 2021**

<b>Transaction Volume Per Capita (unit):</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Cheque <sup>1</sup>	3.7	3.1	2.6	1.8	1.5
<b>E-payments:</b>	<b>110.6</b>	<b>124.6</b>	<b>150.3</b>	<b>170.3</b>	<b>221.2</b>
Credit card	12.7	13.8	15.7	15.0	17.0
Charge card	0.1	0.2	0.2	0.1	0.1
Debit card	5.1	7.6	11.4	15.3	22.6
E-money	58.1	59.3	64.3	56.3	64.5
Other cashless instruments <sup>2</sup>	0.9	0.2	0.2	0.1	...
Interbank GIRO	6.1	6.4	6.2	8.1	10.8
Instant Transfer <sup>3</sup>	4.1	7.4	13.7	22.3	34.8
Interbank direct debit	0.1	0.1	0.1	0.2	0.3
ATM <sup>4</sup>	1.3	1.1	1.0	0.5	0.3
Internet banking <sup>5</sup>	15.9	19.0	23.1	30.6	40.7
Mobile banking <sup>5</sup>	2.7	5.9	10.1	17.8	25.3
Mobile payment <sup>6</sup>	0.01	0.04	0.2	0.4	1.2
RENTAS - Third party transactions <sup>7</sup>	0.1	0.1	0.1	0.1	0.1
Intrabank direct debit & standing instructions	3.4	3.6	3.9	3.6	3.6

1. Cheques cleared via eSPICK  
2. Refer to single purpose payment cards  
3. Beginning from December 2018, Instant Transfer include DuitNow transaction  
4. Refer to payment transactions via ATM, including own and third party funds transfer. Exclude cash withdrawals.  
5. Exclude non-financial transactions.  
6. Refer to payment service offered by banking and non-banking institutions that facilitate payments or funds transfer using a mobile device. Exclude transactions using payment card and mobile banking transactions  
7. Refer to Government, custom duty and third party payments via Interbank Funds Transfer System.

Source: Bank Negara Malaysia (2022)

The digital transformation in the Malaysian banking industry is noteworthy. The following examples illustrate the depth and directions of FinTech developments in the recent years. MoneyMatch, for example, is a digital remittance platform that offers currency exchange service at competitive rates, whereas Pentaip leverages big data and AI technology to provide AI training and investment management solutions. The development of FinTech in Islamic finance is remarkable and experienced significant growth in recent years. Global Sadaqah, for instance, is an award-winning zakat and waqf management platform which allows the public and business clients to donate to zakat or waqf campaigns on the Islamic crowdfunding platform; these campaigns are verified and approved by their internal Shariah team. Finterra is another FinTech

exemplar which provides blockchain-based applications and smart contracts that integrate options for fundraising, Waqf management, asset management and impact reporting that are handled in accordance with Shariah Laws. In a similar vein, Ethis provides Shariah-compliant funding for SMEs and short-term projects, in addition to its licensed Shariah-compliant equity crowdfunding platform in Malaysia.

The Malaysian central bank, Bank Negara Malaysia (BNM) has issued digital banking licenses to five consortiums after receiving 29 applications, as the country seeks to embrace online financial services amid an e-commerce boom. Three out of five consortiums are majority-owned by Malaysians: first, mobile carrier Axiata's fintech unit Boost Holdings; second, Kuok Brothers which partners with ride hailing and food delivery giant Grab Holdings, and third, a group led by Shopee owner Sea Group and a unit of YTL Corp., a Malaysian conglomerate. Groups led by KAF Investment Bank and AEON Financial Service were also granted the permits.

According to Guild (2022), the reasoning behind granting licenses to these consortiums is straightforward. Businesses with large consumer base in the mobile, gaming, delivery, retail, and online payments industries in collaboration with well funded partners are well positioned to provide their respective user bases with a larger range of financial services. It is anticipated that they will have an advantage over established brick and mortar banks due to their capacity of combining all of these services through an integrated digital interface, such as an "all in one" platform or mobile application.

BNM had released Exposure Draft on Licensing Framework for Digital Banks in 2020. The key highlights are as follows: a digital bank has five years to prove that its business model is viable and to serve the underserved/unserved market segments. BNM may revoke its license if licensee fails to do so. It is crucial for the digital bank to participate in the Shared ATM Network and offering banking services through Agent Banking. This indicates that BNM has focus on financial inclusion, with an emphasis on the unbanked population who are typically underserved due to low revenue potential and high servicing cost (PwC, 2019). In Malaysia, nearly 15 percent of the population categorized as unbanked and this is where digital banking could have a huge impact (Guild, 2022).

#### *2.4. Advantages and Disadvantages of Digitalization*

Due to COVID-19 pandemic and the subsequent fear of exposure to COVID-19, the need to access banking services without going to banks physically has increased significantly (Baicu et al., 2020; Pearce et al., 2021; World Bank Group, 2022). In the beginning of the pandemic, the adoption of digital banking was mainly caused by COVID-19 mobility restrictions and partly driven by fear as cash was perceived as unsanitary and increasing the risk of getting coronavirus disease (World Bank Group, 2022).

Moreover, the pandemic also demonstrates the influential role of digital infrastructure in delivering financial services to the masses and social assistance to the people in

need efficiently. An estimated 1.7 billion people in developing countries received COVID-response social assistance payments, and over half of them never had government support before in most regions (Qiang et al., 2022). This posed two main challenges to the governments: first, identify and verify who needed financial support, and second, making digital payments safely and efficiently during the pandemic (Qiang et al., 2022). According to World Bank Group (2022), countries that overcome these obstacles were in good position to make the further use of the developed digital competence. More specifically, the simplified digital identification procedures and the integration of digital payments and trusted data sharing platforms allow the governments to reach new beneficiaries, access their eligibility, verify their identity and, check against a range of databases and approve applications.

A mounting number of studies demonstrate that technology can improve welfare. Digital technology provides mechanisms in developing economies that improve risk sharing, smoothing consumption, and encourage savings. Demombyne and Thegeya (2012) found that mobile money users in Kenya are 32 percent more likely to have some savings. Similarly, Jack and Suri (2014) found that the households who do not use mobile money in Kenya saw a seven percent decline in consumption during times of difficulties, while the consumption in households that uses mobile money is unaffected by shocks.

Digital technology also allows consumers to better manage their personal finance and their lifestyles. Technology allows inexperienced customers to save money and avoid illicit fees (Breza et al., 2020), and helps people to curb a gambling addiction by blocking their access (Baynes, 2022). Some countries have a highly developed payments ecosystem and digital transformation of service consumption. China's WeChat, for instance, is an all-in-one platform allowing users to pay utility bills, order food, and make doctors appointments. Sweden's mobile payment method Swish, iZettle payment terminals and digital identification service BankID are notable innovations which lead to high levels of confidence and comfort using digital payments in the country (HM Treasury, 2019).

With digital technology, financial institutions can serve rural communities more cost-effectively so that rural residents can easily access financial services without traveling long distances, thereby minimizing the urban-rural economic divide and increasing financial inclusion. However, rural residents remain less likely to have broadband at home and also less likely to own an electronic device (e.g. smartphone, tablet computer or traditional computer) than their urban counterparts. The digitalization of government-to-person payments during the COVID-19 pandemic illustrates that a coordinated action and commitment during the crisis can make huge progress, but that progress needs to be translated into long term developments. It will also require learning from the failures or pitfalls of some governments in delivering COVID-19 support schemes. Paraguay, for instance, created new mobile e-wallets but they had limited functionality as the beneficiaries were not allowed to save or make transfers (World Bank Group, 2022).



Such occurrences lead to the downsides of digitalization of financial services: the limited functionality and security concerns of the digital financial services. Facilitating such conditions as perceived easiness of use and user-friendliness are found to be considerably related to the usage intention of e-wallets and mobile banking applications (Goerge and Sunny, 2022; Jun and Palacios, 2016; Ojo et al., 2022). Some mobile banking customers found mobile applications as “frustrating” (Jun and Palacios, 2016) and “slow” (Sampaio et al., 2017). One common problem of digital banking is the out-of-sync information on bank accounts as the real-time tracking of account balances after each transaction is not widely available. Moreover, the compatibility of digital payments with existing payment infrastructure and other mobile applications that customers broadly use remains a problem (Kang, 2018). Some apps only work on particular types of devices: Apple Pay only works between Apple devices, for example.

Perhaps the biggest drawback of digitalization of financial services is that it requires an internet connection and a fairly modern smartphone that can support the mobile applications. Another weakness of mobile payment is that users need to worry about the battery life on their phones. There is also the risk of theft and data security, and the need for protecting customers from cyber-attacks has become crucial for financial service providers (George and Sunny, 2022).

In short, digital banking, or digitalization of financial services in general, presents both opportunities and threats. It transforms the traditional banking slowly but surely. It is causing losses of certain jobs, as evident in Germany (Kahl, 2018) and UK (Pooley, 2022), and yet at the same time, it also creates new job opportunities, such as digital analyst and Artificial Intelligence project manager in banking and finance.

### **3. Research Methodology**

The Analytical Network Process (ANP) method utilized in this study has been carried out in three steps. First, questionnaires and in-depth interviews with the bank and FinTech companies' practitioners were administered in order to identify economic, regulatory, and operational issues faced by institutions in the process of digitalizing financial services. Then at this stage, in addition to providing questionnaires aiming to identify the factors that determine customer satisfaction in using digital financial services to customers of banks and FinTech companies who use digital financial services, questionnaires were also distributed to regulators and experts in digital finance in Malaysia to identify the effects and challenges of digital finance on the risk profile of the Malaysian banking institutions. Second, the first stage results were used to create second questionnaire to be used with Super Decisions software, which then was distributed to respondents. The results of the second questionnaire are then entered into the Super Decisions software to be analyzed. The third stage is the data analysis aimed to find out 1) the most influential economic, regulatory, and operational issues faced by institutions in the process of digitalizing financial services; 2) the most important factors influencing customer satisfaction when using digital financial services; 3) to determine the most significant effects and challenges of digital finance on the riskiness of Malaysian banking institutions.

*3.1. Population and Sample*

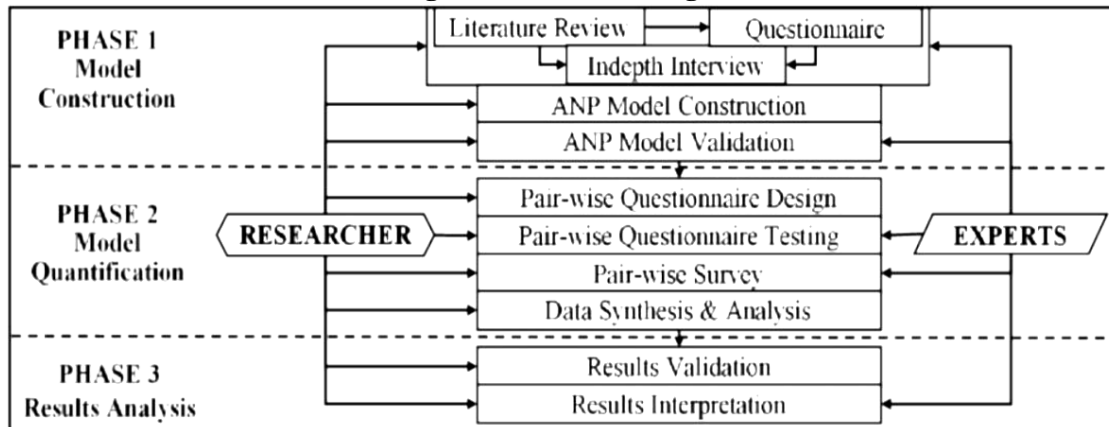
The selection of respondents in this study was carried out using a purposive sampling technique by considering the respondents' understanding of the research topic. In total, 30 respondents were selected for participation in this study, based on their familiarity with digitalization of services provided by Malaysian banks and FinTech companies. In the ANP analysis the sample, or the number of respondents, is not used as a benchmark for validity, as long as the respondents are experts in their respective fields: bank practitioners and customers, fintech company practitioners and customers, as well as representatives of regulator and experts in digital finance (Table 2).

**Table 2: Categories of the Respondents**

No.	Categories of the Respondents	Number of Respondents
1.	Bank Practitioners	6
2.	Bank Customers	6
3.	Fintech Company Practitioners	6
4.	Fintech Customer	6
5.	Regulator and Digital Finance Experts	6
<b>TOTAL</b>		<b>30 Respondents</b>

This paper has focus on the qualitative output of the Analytical Network Process analysis in aiming to identify and analyze economic, regulatory, and operational issues faced by banks and FinTech institutions in the process of digitalizing financial services. The research stages are summarized in Figure 1:

**Figure 1: Research Stages**



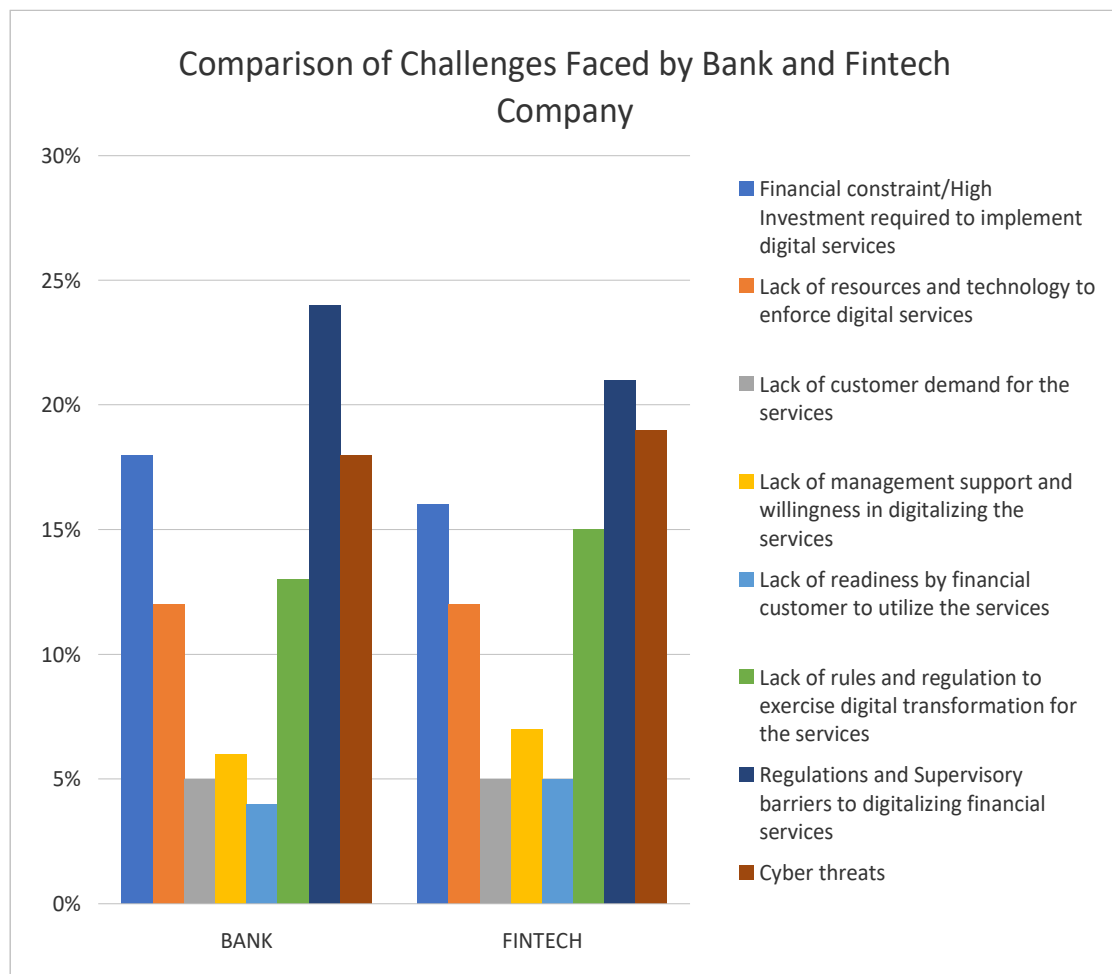
Source: Nasrulloh et al. (2022: 97)

**4. Findings**

*4.1. Challenges faced by financial institutions in digitalizing financial services*

The implementation of digital banking has provided tangible benefits for financial institutions and their customers. Both groups enjoy a variety of actual benefits that can be seen from various perspectives. Financial institutions have increased their efficiency, whereas customers have easy access to banking services at any time and in any location. Nonetheless, there are challenges faced by financial institutions in digitalization of financial services which are illustrated in Figure 2.

**Figure 2: Challenges faced by banks and FinTech companies in digitalization**



The challenges faced by banks and FinTech companies in digitalizing their financial services are quite similar. 20% of respondents agree that the main challenges in digitalizing the financial services faced by banks and fintech companies are related to regulations and supervisory requirements. Regulation of digital banking evolves over time. Regulators recognize the potential advantages of digital banking for inclusion, competition, and customer experience. Nevertheless, many regulators have exercised caution to prevent opportunism that would jeopardize confidence and financial stability. Traditional and digital banks are subject to the same regulations globally, but some jurisdictions have developed regulatory frameworks specifically for digital banks.

The second highly cited challenge is cyber security. 18% of banks and 19% of FinTech companies agree that cyber security is a threat to digitalization of financial services. The technological advances create a new set of challenges not just for the financial institutions but also the regulators and customers because the risk management systems and overall resilience of most financial technology remain uncertain. As more consumers shift to digital banking, financial institutions need to

protect customers from cybercriminals in order to prevent financial losses caused by unauthorized transactions through these new technologies.

The third mostly cited challenge is the lack of customer readiness in utilizing the financial services, as evidenced by the questionnaire in which 18% of bankers and 16% of FinTech companies do not think that customers are sufficiently ready for digitalization of financial services. In Malaysia, high-quality fixed-line infrastructure is underdeveloped, while the quality of mobile broadband networks varies by state (World Bank Group, 2018). Although the growth in digital economy has been rapid in past few years and that has contributed to a digital divide as recent progress has been concentrated in a handful of states. The digital divide between urban and rural areas across the country remains distinctive since the 2000s. For rural areas in Malaysia with low digital connectivity, agent banking is more relevant and popular than digital banking. The agent banking program was started in 2012 and has since proven to be a powerful tool for promoting financial inclusion in Malaysia, particularly in areas without bank branches. Over time, a network of bank representatives that offer financial services has expanded noticeably (World Bank Group, 2017).

Furthermore, approximately 15% of respondents agreed that another barrier to implementing digitalization of financial services is a lack of rules and regulations governing digital transformation of services. Traditionally, central banks and regulators have always kept a close eye on the financial industry by controlling foreign exchange reserves in order to maintain stability, manage foreign exchange reserves. However, as more and more new technology firms enter the banking industry, these new entrants create new set of challenges for financial authorities and may necessitate stronger customer and investor protection due to regulatory arbitrage, which occurs when businesses relocate to less regulated industries and locations (Pascual and Natalucci, 2022). Global coordination will be necessary for existing fragmented regulatory domains like climate regulation, disclosures, and data privacy as well as for new areas like sustainable finance and emerging technologies.

Other challenges faced by banks and FinTech companies in digitalizing the financial services include: lack of resources and technology to enforce digital services, lack of management support and willingness to digitalizing the services, lack of customer demand for the services and lack of readiness by financial customers to utilize the services.

#### *4.2. Factors that affect customer satisfaction in using digital financial services*

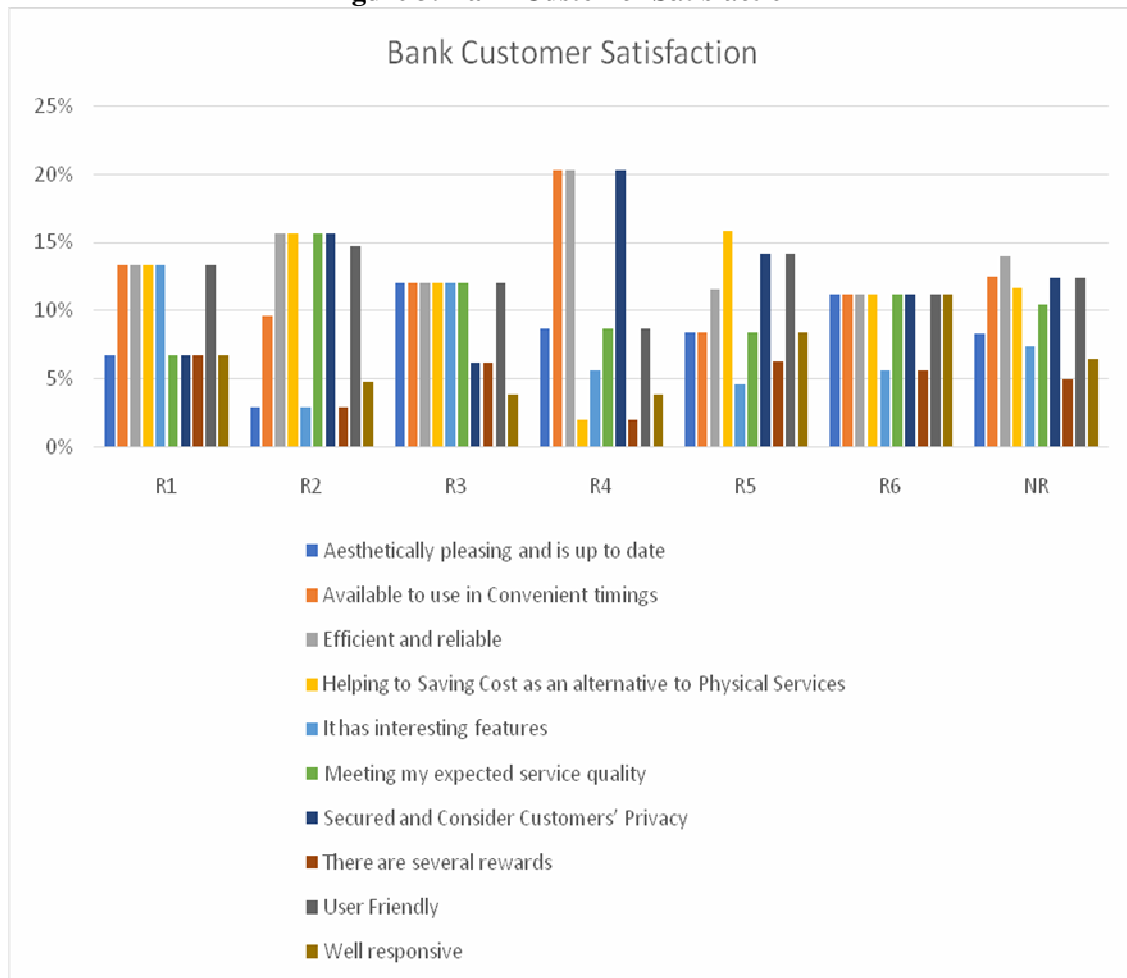
Customers have new expectations towards digital financial services because they want seamless digital banking solutions to meet their daily needs. More and more people want a variety of simple and reliable products and services from financial institutions, especially banks, or other companies that offer similar services. In line with changing needs and expectations, financial institutions not only need to make efforts to retain current customers and gain new customers, but at the same time, they must also be able to increase profits and reduce costs, especially in an increasingly intensified competitive environment.

After conducting in-depth interviews and distributing questionnaires to the respondents, a number of factors that affect customer satisfaction when using digital financial services were identified and shown in Figure 3 and 4.

**4.2.1. Customer Satisfaction with Bank**

There are ten factors that determine bank customer satisfaction in using digital services as shown in Figure 3:

**Figure 3: Bank Customer Satisfaction**



According to 14% of respondents, the main factor that determines bank customer satisfaction in using digital financial services is 'efficient and reliable'. The second priority is 12% each, namely the digital financing is available to use in convenient timings, helping to save cost as an alternative to physical services, user friendly, secured and consider customer privacy.

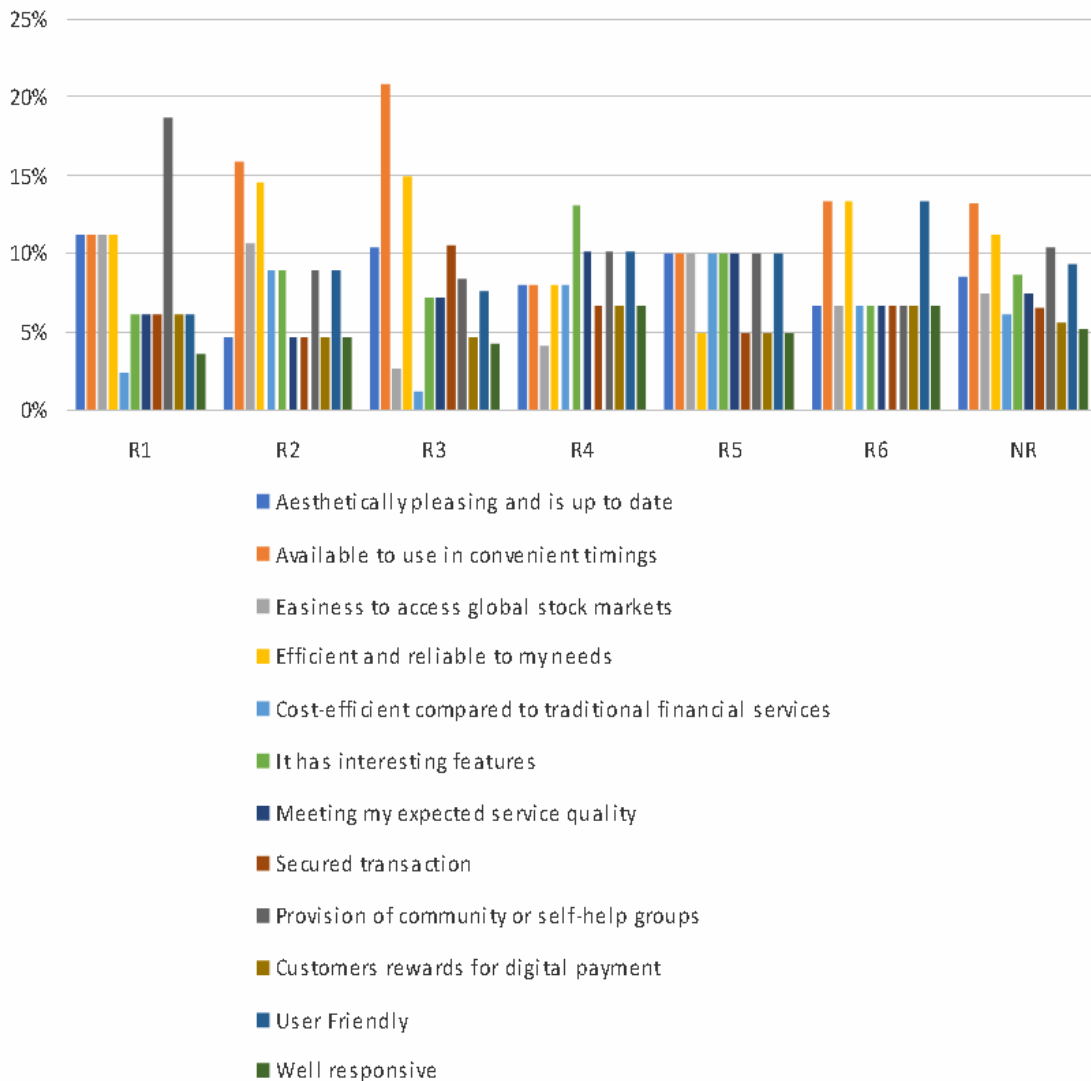
Furthermore, the third factor of 10% that determines customer satisfaction in using digital financial services is that this digital banking service is able to meet the customer's expected service quality which is then followed by considerations of

aesthetically pleasing and is up to date at 8%, the digital financial services have interesting features at 7%, well responsive at 6% and there are several rewards at 5%.

**4.2.2. Fintech Customer Satisfaction with FinTech Companies**

There are ten factors that determine customer satisfaction with FinTech companies in using digital services as shown in Figure 4:

**Figure 4: Customer Satisfaction with FinTech Firms**



The first priority factor that determines FinTech customer satisfaction is the same as bank customers, namely the efficiency and time effectiveness factor. Figure 4 shows that the majority of respondents (13%) agree that the priority factor for customer satisfaction with FinTech company in using digital financial services is the digital financing available to use in convenient timings and 11% of the respondents agreed that the next priority factor is the efficient and reliable service.

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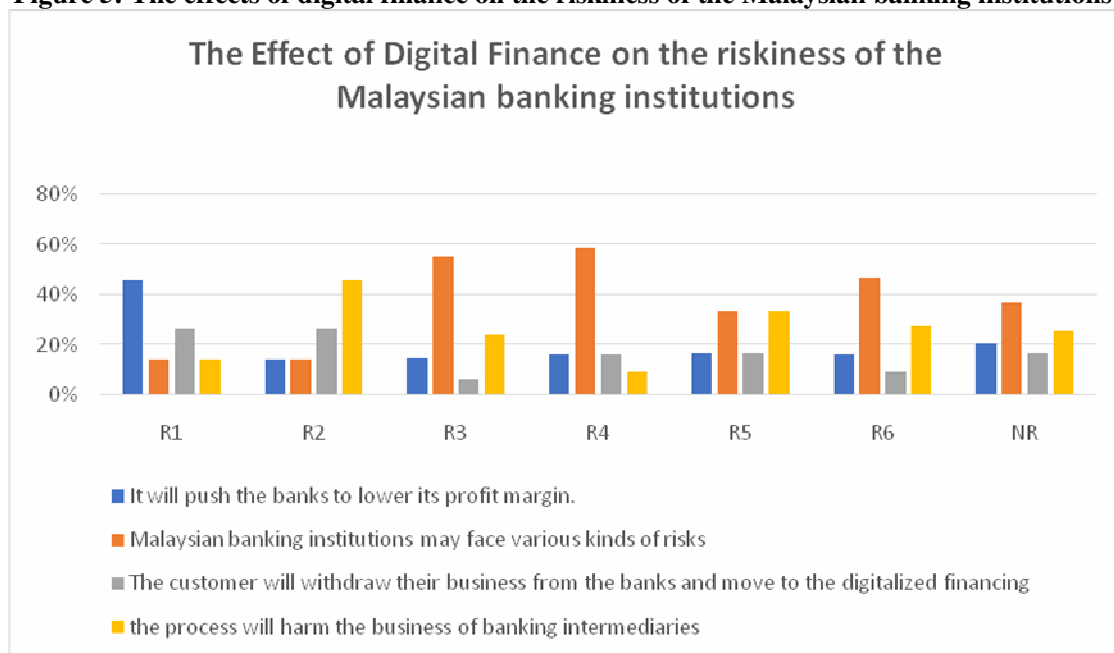
Furthermore, one of the advantages that determine customer satisfaction at FinTech companies is that the Fintech company also provides community sites to discuss concerns between its members. This helps the customer to reach out and learn from each other (10%) which is then followed by several factors such as aesthetically pleasing and is up to date, it has interesting features and user friendly with each value of 9%. The next priority factor at 8% is that customers can easily access global stock markets.

Several other priority factors are: the services provided were able to meet the quality services expected by customers (7%), helping to save costs as an alternative to physical services and there are several rewards that customers can obtain frequently from regular transactions (6%) and well responsive when the customer needs any personal assistance (5%).

### 4.3. The effects of digital finance on the riskiness of the Malaysian banking institutions

After conducting in-depth interviews and distributing questionnaires to respondents, several effects of digital finance on the riskiness of the Malaysian banking institutions have been identified:

**Figure 5: The effects of digital finance on the riskiness of the Malaysian banking institutions**



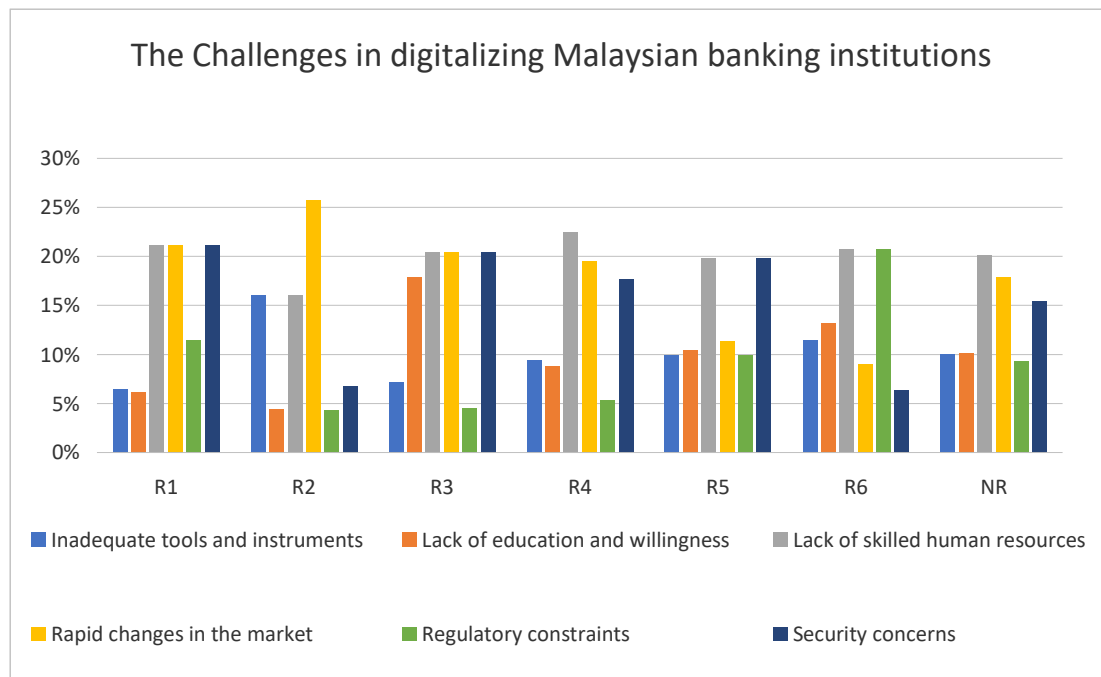
37% of respondents agree that the Malaysian banking institutions may face various types of risks such as business risk, interest rate risk, and displaced commercial risk. Furthermore, 26% of respondents agreed that any other digital financing solutions to simplify and automate the process may harm the business of banking intermediaries, as banks act as an intermediary between fund providers and fund receivers. The third effect of 21% is that digital financing may reduce profit margins. Although digital finance could lead to greater financial inclusion this raises questions about how banks and FinTech firms profiting from the poor, a situation of putting “profit-maximizing

digital finance providers” against “welfare-seeking digital finance users” (Ozili, 2018). Lastly, 17% of respondents fear that customers could switch from traditional banking to digital finance completely because they find digitalized financing solutions simpler, easier, and more profitable.

**4.3.2. The challenges in digitalizing Malaysian banking institutions**

Following in-depth interviews and questionnaire distribution, there are several challenges in digitalizing Malaysian banking institutions, as illustrated by Figure 6.

**Figure 6: The challenges in digitalizing Malaysian banking institutions**



On average, 20% of respondents agree that the main challenge in digitalizing Malaysian banking institutions is a lack of skilled human resources (20%), followed by rapid market changes (18%) and customer security and trust (15%) in light of rising scam cases. 10% of respondents think the following factors, insufficient tools and instruments, a lack of education and customer unwillingness to change, as the challenges to digitalization of financial services. Only 9% of respondents think of regulatory constraints as a challenge to digitalization, given that the Malaysian central bank BNM has simplified regulatory framework for digital banks, such as licensed digital banks are exempted from stress testing during the foundational phase (BNM, 2020).

**5. Conclusion**

The development of technology in the financial sector, especially digital finance, has proven to have a real and significant impact on financial institutions, and has fundamentally changed the way they do business. The pace of this change continues to increase with the introduction of new technologies and the progression of customer



needs. However, there is a number of challenges that the banking industry and FinTech companies have to overcome in order to digitalize their financial services.

The following key challenges faced by banks and FinTech companies are identified in the process of digitalizing financial services: legal challenges, cyber security challenges, investment challenges for technology infrastructure, and a lack of management support. A comparatively low number of respondents have also been concerned about the following challenges: a lack of customer demand for services and a lack of financial customers' readiness to use the services.

Furthermore, a survey of customers of banks and FinTech companies revealed that the efficiency and time effectiveness are important as the digital financing is available for use at convenient times, helps to save costs, user friendly and secure. Customer privacy is the priority factor that determines customer satisfaction in using digital financial services. Other factors, such as rewards and appealing features in digital banking apps, have little influence on customer interest in using digital financial services.

This study has identified the significant effects of digital finance on the riskiness of Malaysian banking institutions, as well as the challenges in digitalizing Malaysian banks. Digital finance has the following impact on the riskiness of Malaysian banking institutions. First, Malaysian financial institutions may face a variety of risks. Second, any other digital financing solutions that simplify and automate processes may harm business of banking intermediaries. Third, profit margins of banks can be reduced as a result of digital financing. Fourth, customers may abandon banks in favor of digitalized financing, a phenomenon known as displaced commercial risk, because digitalized financing solutions are simpler, easier, and more profitable. Lastly, Malaysian banking institutions may also face following difficulties in digitalizing financial services: a lack of skilled human resources, rapid market changes, and security concerns.

Digital technology is a double-edge sword. Financial service providers are increasingly able to provide customers and organizations with customized, practical, and flexible payment options because of digitalization and ongoing technology advancement. Digital payments can also help with budgeting, financial inclusion, and taking action to stop and combat economic crime when used adequately. However, there are gaps in infrastructure and consumer literacy and the lack of familiarity with digital finance makes consumers vulnerable to exploitation and/or abuse. Additionally, there is a growing need to increase secured finance access points as well as continuously improve financial products and services. As the society has been becoming more reliant on digital financial services, the cyber threats to the financial system can mature in sophistication. The challenge for the regulators is thus to find the right balance between protecting customers and supporting innovation.

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