YURIDIKA
FAKULTAS HUKUM UNIVERSITAS AIRLANGGA
Volume 40 No 1, January 2025
DOI: https://doi.org/10.20473/ydk.v40i1.55888
Fakultas Hukum Universitas Airlangga, Jalan Dharmawangsa Dalam Selatan Surabaya, 60286 Indonesia, +6231-5023151/5023252
Fax +6231-5020454, E-mail: yuridika@fh.unair.ac.id
Yuridika (ISSN: 0215-840X | e-ISSN: 2528-3103)

Article history: Submitted 24 March 2024; Accepted 12 November 2024; Available Online 30 January 2025.

Regulating Digital Finance for Small and Medium Enterprises Growth: Lessons From Thailand and Malaysia

Sugeng[1] and Widya Romasindah Aidy[2]
sugeng@dsn.ubharajaya.ac.id
[1 2] Universitas Bhayangkara Jakarta Raya, Indonesia

Abstract
This article aims to delve into how regulations and financial literacy policies can affect the growth of the Financial Technology (fintech) industry and contribute to increasing access to capital for Micro, Small, and Medium Enterprises (MSMEs). The focus of this research is to investigate the impact of regulations and financial literacy on access to capital for MSMEs through the use of financial technology. The research focuses on exploring the implementation of regulations and financial literacy policies in Thailand and Malaysia, as well as offering potential insights to deepen understanding of how regulations and financial literacy affect access to capital for MSMEs through the use of fintech in the context of Indonesia.The research method employs a doctrinal legal approach to analyze existing regulations and a literature review to understand the impact of financial literacy and financial technology. The research findings indicate that appropriate and responsive regulations, effective financial literacy programs, and good collaboration between the fintech industry and traditional financial institutions can enhance MSMEs' access to capital. The novelty of this research lies not only in its focus on Thailand and Malaysia but also in providing insights into the potential that can be developed within the context of Indonesia. However, in the context of Indonesia, challenges such as technological infrastructure and resistance to change still pose serious obstacles.
Keywords: Financial Technology; Capital; Microenterprise.

Introduction

Micro, small, and medium enterprises (MSMEs) are a crucial pillar for national economic development. Apart from contributing around 57.24% to the formation of the Gross Domestic Product (GDP), this sector also served as a source of income for approximately 116.97 million workers in 2018.[1] Despite these significant contributions,

[1] Kementerian Koordinator Bidang Perekonomian Republik, 'UMKM Plays a Vital Role in the Indonesian Economy' (*Kementerian Koordinator Bidang Perekonomian Republik*, 2021) <https://ekon.go.id/publikasi/detail/2969/umkm-menjadi-pilar-penting-dalam-perekonomian-indonesia> accessed 21 April 2024.

MSMEs face a fundamental challenge - limited access to funding. Many entrepreneurs encounter barriers in obtaining financing to develop their businesses.[2]

One solution is to strengthen the connectivity of micro-scale businesses with markets through digital platforms. The government can provide support for the development of digital infrastructure that enables MSMEs to connect more easily with consumers, both at the local and global levels. Additionally, training in digital marketing and e-commerce can help MSMEs enhance the visibility of their products. Collaboration among MSMEs can also be crucial for improving market access.[3] The government and private sector can facilitate the formation of consortia or networks of MSMEs, enabling them to collectively market their products on a larger scale. Programs such as local product certifications, local economic exhibitions, or branding support can add value to MSME products, increasing their attractiveness to consumers. In overcoming barriers to market access, the government can play a facilitating and leading role.[4]

Policies supporting the promotion of local products can provide an additional boost. Programs such as local product certifications, local economic exhibitions, or branding support can add value to MSME products, increasing their attractiveness to consumers. In overcoming barriers to market access, the government can play a facilitating and leading role.[5] Regulatory support that facilitates the integration of MSMEs into the economic value chain, as well as fiscal incentives for small businesses, can be strategic measures to strengthen the position of MSMEs in the market. In line with this, a holistic approach covering financing, market access, and managerial capacity improvement will create an environment that supports the growth and sustainability of MSMEs.

---

[2] Sri Juminawati,[*et.,al.*], 'The Effect of Micro, Small and Medium Enterprises on Economic Growth' (2021) 4 BRICI-Journal.[5697-5704].

[3] E Aminullah,[*et.,al.*], 'Interactive Components of Digital MSMEs Ecosystem for Inclusive Digital Economy in Indonesia' [2022] Journal of the Knowledge Economy <https://doi.org/10.1007/s13132-022-01086-8>.

[4] Beth Jenkins, *Business Linkages: Lessons, Opportunities, And Challenges* (IFC 2007).[21].

[5] OECD, *Managing Shocks and Transitions Future-Proofing SME and Entrepreneurship Policies Key* (Issues Pap, 2023).[27].

The high administrative and legal costs associated with loan processing can be an additional burden for micro-businesses (UM). These costs may be related to loan application requirements, document management, and legal examinations, significantly increasing the overall loan costs.[6] Often, the applied regulations are insufficient to support the development and needs of micro-businesses. This may include rules and requirements at both national and local levels, which may not align with the characteristics of micro-scale businesses.[7] Some business operators may lack sufficient understanding of regulations and financial services that can assist them. Education and training related to financial regulations can help reduce uncertainty and improve accessibility.[8]

To address these barriers, collaborative efforts are needed between governments, financial institutions, and other stakeholders. Regulatory reforms considering the specific characteristics of micro-businesses, simplification of loan application processes, financial education, and more inclusive policy support can help create a more favorable environment for the growth and development of micro-businesses.[9] Furthermore, regulatory liberalization that facilitates financing access for micro-businesses can also be a positive step in supporting the micro-business sector. The study by Ramiyanti and Arianto titled "Digital Financial Literacy Assistance for Digital Micro, Small, and Medium Enterprises (MSMEs) in Tembong Subdistrict, Serang City" highlights the insufficient digital financial literacy, which has hindered access to funding and financial services for micro-business operators, making it challenging for businesses to thrive.[10]

---

[6] Nicholas Burger, *Reforming Policies for Small and Medium-Sized Enterprises in Indonesia* (TNP2K 2015).[7].

[7] Naoyuki Yoshino and Farhad Taghizadeh-Hesary, 'Major Challenges Facing Small and Medium-Sized Enterprises in Asia and Solutions for Mitigating Them' (2016) 564 April 2016.[6].

[8] Dong He,[*et.,al.*], 'Fintech and Financial Services: Initial Considerations, Fintech and Financial Services' (2017) SDN/17/05, 2017.[17].

[9] Prasanna Gai,[*et.,al.*], 'Regulatory Complexity and The Quest for Robust Regulation' (2019) No 8/June 2019.

[10] A Manap,[*et.,al.*], 'Small and Medium Enterprises (MSMES)' (2023) 12 Jurnal Ekonomi. [468 - 475]. <https://ejournal.seaninstitute.or.id/index.php/Ekonomi/article/view/1204>.

This research investigates the impact of regulations and financial literacy on access to financing for MSMEs through the use of financial technology(fintech).[11] The primary focus is to analyze how existing regulations and financial literacy programs can influence the growth of the fintech industry and its contribution to MSME financing. The study also explores the collaboration between fintech players and traditional financial institutions, as well as the impact of financial technology on the economic growth of MSMEs. The research methodology employs a doctrinal legal approach to analyze existing regulations and literature studies to understand the impact of financial literacy and financial technology. The results indicate that friendly regulations, effective financial literacy programs, and good collaboration between fintech and traditional financial institutions can enhance access to MSME financing.[12]

The implementation of financial technology and regulations in Malaysia and Thailand is examined to extract valuable lessons for Indonesia. One key finding of this research is the presence of regulatory barriers hindering access to financing for micro-businesses in Indonesia. Complex and sometimes inadequate regulations to support the sustainability of micro-businesses often serve as a major obstacle.[13] The implementation of financial technology in Malaysia and Thailand is the focus of comparison because both countries have successfully created ecosystems supporting the growth of MSMEs through technology utilization. This study aims to evaluate the extent to which regulations in both countries support the integration of financial technology and how it can be effectively applied to assist micro-business operators in Indonesia.[14]

---

[11] Lanouar Charfeddine, Mohamed Ismail Umlai and Mazen El-Masri, 'Impact of Financial Literacy, Perceived Access to Finance, ICT Use, and Digitization on Credit Constraints: Evidence from Qatari MSME Importers' (2024) 10 Financial Innovation.

[12] *ibid.*

[13] Aulia Arifatu Diniyya, Mahdiah Aulia and Rofiul Wahyudi 'Financial Technology Regulation in Malaysia And Indonesia: A Comparative Study' (2020) 3 Journal of Islamic Economics, Finance, and Banking.[2622-2755].

[14] Mei Kay Loo, Sridar Ramachandran and Raja Nerina Raja Yusof 'Unleashing the Potential: Enhancing Technology Adoption and Innovation for Micro, Small and Medium-Sized Enterprises (MSMEs)' (2023) 11 Cogent Economics & Finance.

Based on the above description, the discussion will be focused on answering two main questions: 1) How is the implementation of financial technology applied to MSMEs in Malaysia and Thailand? 2) What are the relevant regulations to expand access to financing for MSMEs in Indonesia? Thus, this research not only contributes to the current understanding of regulatory obstacles in the micro-business sector but also provides policy directions that can help Indonesia achieve financial inclusivity and sustainable economic growth.

The structure of this article includes an introduction, research methods, discussion, and conclusion. In the introduction, the main focus of the research is outlined, which is to analyze the influence of regulations on the utilization of financial technology. Access to financing for MSMEs often faces several limitations that can affect their ability to develop and operate optimally.[15] Limited understanding of financial concepts and business management can also be barriers. Many MSME operators may not have sufficient financial literacy to plan and manage their finances effectively.[16] In the second part, the research methodology will be explained, followed by a discussion, examining findings with relevant literature to compare and support the research results, and indicating confirmation or disagreement with previous research findings.[17]

After identifying a relevant research topic, the first step in the doctrinal approach is to gather legal documents applicable in Malaysia, Thailand, and Indonesia related to the topic. These documents may include legislation, court decisions, and other official documents. Subsequently, researchers conduct in-depth analysis of these documents to understand the regulatory frameworks in place in the three countries. This involves identifying patterns, trends, and differences in regulations relevant to the research topic.

---

[15] Ulrigh Z Lumenta and Frederik G. Worang, 'The Influence of Financial Inclusion on The Performance of Micro Small and Medium Enterprises in North Sulawesi' (2019) 7 Jurnal EMBA 2910.[2910 – 2918].

[16] Anton Priyo Nugroho, 'Qualitative Investigation: Exploring the Challenges Faced by Indonesian SMEs in Accessing Financial Services in Sukabumi City' (2023) 1 West Science Interdisciplinary Studies.[183-193].

[17] Lorelli S Nowell, Jill M. Norris and Nancy J. Moules, 'Thematic Analysis: Striving to Meet The Trustworthiness Criteria' (2017) 16 International Journal of Qualitative Methods.[1-13].

Concept, Classification, and Challenges in the Implementation of Financial Technology

The term financial technology (fintech) consists of two words, namely technology and finance. In the context of the economy and business, fintech refers to business organizations, companies, or parts of companies that operate finance based on digital technology.[18] In Indonesia, Bank Indonesia (BI) defines fintech as the use of technology in the financial system that produces new products, services, technologies, and/or business models that can impact monetary stability, the financial system, efficiency, smoothness, security, and constraints of the payment system. Fintech has great appeal to consumers due to the speed and time efficiency of digital-based financial services. Financial services or products are provided by virtual fintech through the use of applications and/or web interfaces. This is the main differentiator between fintech services and conventional financial business operations that are generally based on direct interaction (face-to-face services).[19] Based on BI regulations, to be categorized as fintech services, several criteria must be met, such as: a) Financial services are innovative, b) Impact the pattern of digital technology-based financial product service or existing financial business models, c) Provide benefits to society virtually and widely.[20]

Fintech continues to evolve as a key catalyst for transformation in the financial sector. The speed and efficiency of transactions through digital platforms not only accelerate financial services but also bring innovation to business models.[21] The utilization of technologies such as artificial intelligence and blockchain opens new opportunities in providing safer and more effective services. Additionally, digital financial services not only offer alternatives to traditional financial services but

---

[18] Jagadeesha R Bhat, Salman A. AlQahtani and Maziar Nekovee, 'FinTech Enablers, Use Cases, and Role of Future Internet of Things' (2023) 35 Journal of King Saud University-Computer and Information Sciences.[87-101].

[19] Erik Feyen,[*et.,al.*], 'Fintech and the Digital Transformation of Financial Services: Implications for Market Structure and Public Policy' BIS Papers No 117.[17].

[20] Nicky Amanati Laily Rizkyana,[*et.,al.*], 'Impact of Tax Imposition on Electronic Commerce (E-Commerce) Transactions' (2020) 25 Perspektif.[20-34].

[21] Marta Barroso, 'Digital Transformation and The Emergence of The Fintech Sector: Systematic Literature Review' (2022) 2 Digital Business.[18].

also deeply transform the patterns of financial product services. Existing financial business models must adapt to the emergence of fintech, creating new dynamics in the financial ecosystem.[22]

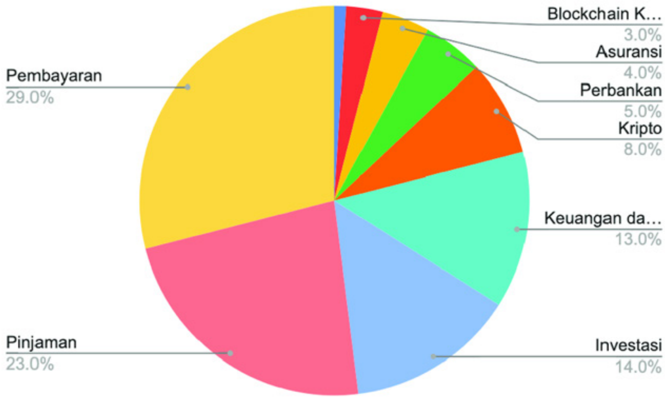

Figure 1. Types of Fintech in Indonesia

According to the Financial Services Authority (OJK) data as of July 2020, there is a significantly growing trend in loan distribution through fintech platforms in Indonesia. The cumulative loan distribution from January to July 2020 reached a staggering amount of Rp 35 trillion.[23] This achievement indicates an extraordinary growth surge, reaching 135% year-on-year in July 2020. The importance of fintech's role in meeting the financial needs of the public is evident from the fact that the public's interest in accessing loans through these platforms remains high, even amid the ongoing pandemic. Despite challenging economic conditions, Fintech loan disbursements continue to grow rapidly, demonstrating the flexibility and resilience of this sector.[24]

Insurtech leverages technologies such as big data analytics and artificial intelligence to conduct more accurate risk assessments. By analyzing various

[22] OECD, 'Artificial Intelligence, Machine Learning and Big Data in Finance: Opportunities, Challenges, and Implications for Policy Makers' (*OECD*, 2021) <https://www.oecd.org/finance/artificial-intelligence-machine-learningbig-data-in-finance.htm>.

[23] Ajisatria Suleiman, Thomas Dewaranu and Noor Halimah Anjani, 'Creating Informed Consumers: Tracking Financial Literacy Programs in Indonesia' (2022) Policy Paper No. 49, 2022. [32].

[24] Sofie Blakstad and Robert Allen, *FinTech Revolution Universal Inclusion in the New Financial Ecosystem* (Palgrave Macmillan 2018).[18].

factors, including user behavior and habits, insurance companies can determine the level of risk more precisely.[25] This not only provides a more accurate picture of the risk but also allows for fairer premium adjustments. Technology in insurtech introduces faster and more efficient claims processing. Automating claims processes using blockchain technology and other automated systems enables users to receive compensation more quickly, reducing administrative hurdles and providing a better experience for policyholders. Through continuous data collection and a deeper understanding of insurance behavior, companies can dynamically adjust premiums.[26] Over time, fintech will continue to shape how we interact with financial services, providing ongoing innovative impetus and transforming the global financial business landscape.[27]

In addressing these challenges, financial authorities' regulations, such as the Ministry of Finance, Financial Services Authority (OJK), and Bank Indonesia (BI), become crucial pillars in creating an environment supportive of fintech innovation and growth while maintaining financial system stability.[28] Over time, fintech's engagement and adaptation in society and business will continue to shape the global financial landscape, bringing greater benefits and overcoming emerging challenges. The Ministry of Finance, the Financial Services Authority (OJK), and Bank Indonesia (BI) stand at the forefront, responsible for formulating policies involving security, stability, and innovation in the financial sector.[29] Prudence in crafting regulations can create a clear legal framework, provide certainty for industry players, and foster sustainable growth. The importance of regulation is

---

[25] Dinçer Eti, S.[*et.,al.*], 'Insurtech in Europe: Identifying the Top Investment Priorities for Driving Innovation' (2024) 10 Financial Innovation <https://doi.org/10.1186/s40854-023-00541-y>.

[26] Yegnapriya Bharath, *InsurTech-Working Group Findings & Recommendations: Report on InsurTech in the Context of Risk Assessment, Product Design and Pricing* (Hyderabad 2023).[13].

[27] Sukarela Batunanggar, 'Fintech Development and Regulatory Frameworks in Indonesia' (ADBI Worki, 2019) No. 1014 October 2019.[1-16].

[28] OJK, *The Indonesian Financial Services Sector Master Plan 2021-2025 to Recover The National Economy and Enhance The Financial Services Sector Resiliency and Competitiveness* (OJK 2020).[16].

[29] Erik Feyen,[*et.,al.*], 'Fintech and the Digital Transformation of Financial Services: Implications for Market Structure and Public Policy' 117.

evident in its role in maintaining financial system stability.[30]

The study on the impact of fintech on MSMEs in Malaysia and Thailand is of significant relevance to Indonesia. The development of financial technology has brought about major changes in how MSMEs manage their finances and conduct their business operations. Malaysia and Thailand have served as examples of how fintech can enhance access to financial services, expedite transaction processes, and enable MSMEs to grow and compete in an increasingly global market. By studying the experiences of both countries, Indonesia can gain valuable insights into the potential of fintech in supporting the growth of MSMEs. This also provides an opportunity for Indonesia to understand the challenges faced in implementing fintech solutions, such as complex regulations, data security, and adequate financial inclusion.

Given that MSMEs play a vital role in Indonesia's economy, fostering their growth and competitiveness is paramount. The adoption of fintech solutions can significantly enhance the efficiency, productivity, and competitiveness of MSMEs, leading to broader economic benefits such as job creation and income generation. Therefore, leveraging the lessons learned from Malaysia and Thailand, Indonesia can formulate targeted policies and strategies aimed at fostering the integration of fintech within the MSME ecosystem. This may involve initiatives to improve fintech literacy among MSMEs, streamline regulatory frameworks to facilitate fintech adoption, and incentivize collaboration between fintech providers and MSMEs.

Implementation of Fintech for MSMEs: Lessons Learned from Malaysia

The progress of fintech in Malaysia not only creates new opportunities for industry players and the public but also serves as a crucial factor in fostering the country's digital economic growth. Through effective collaboration among the

[30] Ann Valery and Victor Metellus, *Policy Framework on Developing a National Fintech Strategy Policy Framework an Ecosystem Approach to Inclusive Fintech, Digital Economy, Financial Inclusion and The Sustainable Development Goals* (Policy Fra, Alliance for Financial Inclusion 2022).[11].

government, regulators, industry players, and the public, Malaysia continues to shape a future of finance that is more modern, efficient, and inclusive.[31] The Malaysian government has actively supported the development of the fintech industry through progressive regulations. The Central Bank of Malaysia (BNM), the country's central bank, has introduced initiatives such as the Regulatory Sandbox to provide space for innovation and testing fintech business models without compromising the stability of the financial system. The introduction of the Regulatory Sandbox initiative by the Central Bank of Malaysia (BNM) reflects the government's commitment to supporting fintech innovation.

Fintech has opened the doors to easier financing access for SMEs in Malaysia. Through P2P lending platforms and other technology-based financing services, SMEs can apply for loans without navigating the complex processes of traditional banks. This aids SMEs in obtaining working capital, expanding their businesses, or addressing financial challenges.[32] Many SMEs that previously struggled to access financial services can now leverage fintech applications and platforms to conduct financial transactions, save funds, and even manage the financial aspects of their businesses more efficiently. Various fintech solutions, such as financial management apps and digital payment services, help SMEs enhance their operational efficiency.

Fintech also plays a role in improving financial and digital literacy among SMEs. Through various applications and platforms, SMEs can access useful financial information, educational resources, and analytical tools that assist them in making smarter financial decisions. The presence of fintech has brought about a diversification of financial products and services for SMEs. In addition to loans, SMEs can utilize payment solutions, online accounting services, digital insurance, and various other financial instruments designed specifically to meet their business needs.[33] With the adoption of fintech, SMEs in Malaysia can enhance

---

[31] Nurhaiyyu Abdull Hamid,[*et.,al.*], 'Fintech in Malaysia: Navigating Challenges and Shaping a Digital Future' (2024) 13 Accounting and Finance Research.[1-14].

[32] Sami Ben Naceur,[*et.,al.*], 'Is FinTech Eating the Bank's Lunch?' WP/23/239.[30].

[33] Fahmiyatu Rizqiya, [*et.,al.*], 'The Role of Fintech in Improving Financial Literacy in Micro, Small and Medium Enterprises in Subang' (2022) 10 IJAFIBS.[66-73].

their competitiveness in the global market. Technological utilization enables SMEs to engage in international trade, expand market reach, and interact with business partners worldwide more efficiently.[34]

Furthermore, the fintech industry fosters innovation and competition within the financial sector, leading to the development of new products, services, and business models. These innovations drive improvements in efficiency, customer experience, and overall market dynamics, ultimately benefiting consumers and promoting economic growth. However, alongside these advantages, the rapid growth of fintech in Malaysia also presents challenges that must be addressed. Security risks, including cybersecurity threats and data breaches, pose significant concerns for fintech users and the integrity of financial systems. Additionally, regulatory complexities and uncertainties can impede the growth and development of fintech companies, hindering innovation and investment in the industry.

Here are several aspects of the government's role in shaping fintech regulations in Malaysia:[35]

a) Developing Policies and Regulations

The Malaysian government, through regulatory bodies such as Bank Negara Malaysia (BNM) and the Securities Commission Malaysia, plays a role in designing policies and regulations that govern various operational and security aspects of fintech. These regulations encompass business permits, security standards, consumer protection, and other relevant aspects. Fintech regulations in Malaysia govern security standards that must be adhered to by companies. This includes measures for data security, encryption, as well as protection against cyber threats. These security standards aim to protect sensitive customer information and maintain the reliability of fintech operations.

---

[34] Rheva Tiansyah Putri,[*et.,al.*], 'The Role Of Financial Technology (Fintech) in Developing MSMEs' (2023) 4 International Journal of Economics Development Research.[294-304].

[35] Economic Planning Unit, *Prime Minister's Department, Malaysia Digital Economy Blueprint* (Putrajaya: Economic Planning Unit, Prime Minister's Department 2022).[30].

b) Establishing Regulatory Sandbox

The Malaysian government has played a key role in establishing the Regulatory Sandbox, a mechanism that provides space for fintech companies to test their products and services without being burdened by strict regulations. This allows fintech innovations to flourish without compromising the stability of the financial system. The Regulatory Sandbox strikes a good balance between fostering innovation and ensuring the security and reliability of the financial system. By granting experimental freedom to fintech companies, the government can directly observe the impact of innovations without sacrificing the necessary controls to maintain the stability of the financial sector.

c) Promoting Collaboration between Fintech and Traditional Financial Institutions

The government encourages collaboration between fintech players and traditional financial institutions, such as banks. This step helps integrate fintech innovations into a larger financial ecosystem, generating more holistic solutions and ensuring broader adoption by the public. Collaboration between fintech players and traditional financial institutions contributes to financial inclusion and improves literacy in society. Through holistic solutions, they can provide financial services that are more easily accessible and understood by various segments of the population, including those previously underserved by traditional financial services.

d) Enhancing Fintech Literacy and Education

The government plays a role in improving fintech literacy and education among the public and businesses. This initiative includes organizing educational programs, seminars, and financial literacy campaigns aimed at informing the public about the potential and risks of fintech. The first step taken by the government is to organize structured education programs. This involves a series of training sessions and courses to provide a deep understanding of fintech concepts, the technologies involved, and their impact on various economic sectors. Financial literacy campaigns are a crucial part of the government's efforts. Through these campaigns, information about fintech is disseminated widely through various media channels, including television, radio, social media, and print.

e) Ensuring Compliance with International Standards:

The Malaysian government strives to ensure that its regulations align with international standards. Collaboration with international financial institutions and participation in international forums help Malaysia continually update and align its regulations with global developments. The importance of quality regulations drives the Malaysian government to collaborate with international financial institutions. Through dialogue and information exchange with institutions such as the World Bank and the International Monetary Fund (IMF), Malaysia can access expert insights that support the development of effective regulations. Malaysia's participation in international forums is a strategic step in streamlining fintech regulations. Through forums like the Financial Stability Board (FSB) and the International Organization of Securities Commissions (IOSCO), Malaysia gains insights into the latest developments and global trends in the fintech sector.

By maintaining active engagement in international forums, the Malaysian government can quickly respond to global developments. Continuous regulatory updates are a necessity to anticipate new challenges and ensure that existing regulations remain relevant and effective. International collaboration and participation help Malaysia harmonize with global best practices. By understanding and adopting international standards, regulations in Malaysia become more transparent, understandable, and progressive in line with fintech industry developments. Regulations that align with international standards provide flexibility for Malaysia to adapt to changes in the global landscape. It instills confidence that the regulatory environment in Malaysia aligns with global practices, creating the stability and certainty necessary for sustainable growth.[36]

Implementation of Fintech for SMEs: Lessons Learned from Thailand

The growth of fintech in Thailand has been notable, driven by a synergy of factors including government initiatives, public interest in technology, and innovation

[36] Cristina Martinez-Fernandez and Marcus Powell, *Employment and Skills Strategies in Southeast Asia Setting the Scene* (OECD 2009).[39].

from industry players. The Thai government has demonstrated strong support for fintech development. Policies and regulations that are friendly to the financial technology industry have been implemented to create a conducive environment for fintech companies. These measures include the establishment of institutions and regulatory bodies focused on fintech development. The digital payment industry in Thailand has grown rapidly.[37] Digital payment applications and e-wallets have become very popular among the public, facilitating day-to-day transactions. The adoption of digital payment methods is supported by technological innovations such as QR codes and wireless technology.

Online peer-to-peer lending services have become an increasingly popular financing alternative in Thailand. These platforms provide easier access for small and medium-sized enterprises (SMEs) to obtain funds without involving traditional financial institutions. Online peer-to-peer lending services have become an increasingly popular financing alternative in Thailand.[38] These platforms provide easier access for SMEs to obtain funds without involving traditional financial institutions.[39] The use of blockchain technology is also on the rise in Thailand, particularly in the financial sector. Blockchain is employed to enhance security and transparency in financial transactions as well as to facilitate cross-border money transfers. Fintech in Thailand is not only competing with traditional financial institutions but also collaborating with them.

The growth of fintech startups in Thailand continues to attract investor attention. Various startups have emerged, offering creative and innovative solutions in various sectors, including payments, loans, investments, and financial security. The adoption of artificial intelligence is increasing in the Thai fintech

---

[37] A Ardichvili,[*et.,al.*], 'The Role of Angel Investors in the Assembly of Non-Financial Resources of New Ventures: Conceptual Framework and Empirical Evidence' (2002) 10 Journal of Enterprising Culture.[39-65].

[38] Ryan Randy Suryono, Indra Budi and Betty Purwandari, 'Detection of Fintech P2P Lending Issues in Indonesia' (2021) 7 Heliyon.[1-22].

[39] N Wongpinunwatana, 'Ecommerce Adoption in Thailand: An Empirical Study of Small and Medium Enterprises (SMEs)' (2003) 6 Journal of Global Information Technology Management.[67-83].

industry. AI is utilized for risk analysis, personalization of financial services, and improving operational efficiency across various sectors. The development of fintech in Thailand reflects a spirit of innovation and adaptation to technological changes in the financial ecosystem. Government support, public enthusiasm, and collaboration among industry players are crucial pillars in creating a thriving fintech ecosystem.[40]

The Thai government has implemented a series of policies to address the barriers to fintech implementation and expand access to funding for SMEs. Some of the implemented steps and policies include:[41] a) Formation of Fintech-Friendly Regulations, b) Regulatory Sandbox, c) Collaboration with Traditional Financial Institutions, d) Tax Incentives, e) Development of Digital Infrastructure and Consumer Protection. Through the combination of these policies, the Thai government aims to create an environment supportive of fintech growth, particularly to broaden access to funding for SMEs. This collaborative effort is expected to reduce barriers faced by fintech industry players and strengthen the sector's contribution to the country's economic development.

Although there has been progress, the development of fintech in Thailand still faces several obstacles that hinder its full potential. These obstacles include: First, regulatory complexity. Despite efforts to create fintech-friendly regulations, navigating the regulatory landscape can still be challenging for fintech startups. Complex regulatory requirements and compliance processes may pose barriers to entry and expansion in the market. Second, limited access to funding: Despite initiatives to enhance access to funding for SMEs, many fintech startups still struggle to secure investment capital. Limited access to funding hampers innovation and growth in the sector, particularly for early-stage startups and those operating in niche markets. Third, digital infrastructure challenges: While the government has

[40] E Mollick, 'The Dynamics of Crowdfunding: An Exploratory Study' (2014) 29 Journal of Business Venturing.[1].

[41] M Peitz, *The Oxford Handbook of the Digital Economy* (Oxford University Press 2012). [72].

invested in digital infrastructure, there are still gaps in internet connectivity and digital literacy, particularly in rural areas.

Fourth, consumer trust and adoption: Building trust and confidence among consumers remains a challenge for many fintech startups. Concerns about data privacy, cybersecurity, and financial stability may deter individuals from adopting fintech products and services, particularly among older demographics. Fifth, talent shortage: The fintech industry requires a diverse range of skills, including technology, finance, and regulatory expertise. However, there is a shortage of skilled talent in the fintech workforce, making it difficult for startups to recruit and retain qualified professionals. Addressing these obstacles will require concerted efforts from the government, industry players, and other stakeholders. Continued regulatory reforms, increased investment in digital infrastructure, efforts to enhance consumer education and awareness, and initiatives to develop the fintech talent pool are essential for overcoming these challenges and unlocking the full potential of fintech in Thailand.

This step demonstrates the Thai government's commitment to creating a conducive environment for fintech innovation and development. The Regulatory Sandbox offers fintech companies the chance to test new products and services in a trial environment. As an area with less stringent regulations, innovators can conduct experiments with minimal risks. The Regulatory Sandbox not only provides benefits to individual fintech companies but also supports the overall growth of the fintech ecosystem.[42] By reducing regulatory burdens during the early stages of development, the Thai government creates space for creative ideas to flourish and contribute positively to the transformation of the financial sector. When innovation is driven by the freedom to experiment, solutions that can change the way financial services are provided emerge.

Collaboration between fintech companies and traditional financial institutions creates opportunities for mutually beneficial knowledge transfer. Fintech companies

[42] The World Bank, 'How Regulators Respond to Fintech Evaluating the Different Approaches—Sandboxes and Beyond, Finance, Competitiveness & Innovation Global Practice' (Finance, C, Fintech Note 2020) 5.[29].

can leverage the expertise and experience of financial institutions to deepen their understanding of complex financial operations. This collaboration can also result in the development of joint products that combine the technological strengths of fintech and the distribution networks of financial institutions.[43] For example, innovative financing services can be marketed through the traditional bank branch network, expanding consumer reach. This collaboration stimulates innovative thinking among stakeholders. Traditional financial institutions can adopt a more flexible and innovative approach to respond to technological changes, while fintech companies can better understand existing needs and procedures. Through this collaborative effort, the Thai government aims to build a strong foundation for fintech growth and enhance financial services for the entire population.[44]

The Thai government has taken proactive steps by providing tax incentives to stimulate the implementation of fintech, especially for micro, small, and medium enterprises (MSMEs). This policy aims to accelerate the adoption of financial technology among MSMEs, providing financial support, and supporting the growth of the small business sector. Some taxes specifically related to fintech transactions or certain financial services may be eliminated or reduced, providing additional incentives for fintech companies focusing on empowering MSMEs. In addition to direct tax incentives, the government may offer additional incentives for fintech training and literacy programs for MSMEs.[45] Data protection is a primary focus of the Thai government in building a secure fintech ecosystem. Stringent data security policies are implemented to safeguard consumer information and ensure public trust in fintech services. Efforts to prevent data leaks and the misuse of personal information are prioritized in data security regulations.[46]

---

[43] J Kang, 'Mobile Payment in Fintech Environment: Trends, Security Challenges, and Services' (2018) 8 Human-centric Computing and Information Sciences.[3247].

[44] P Gomber,[*et.,al.*], 'Digital Finance and FinTech: Current Research and Future Research Directions' (2017) 87 Journal of Business Economics.[537-580].

[45] Ahmad Afandi, [*et.,al.*],'Do Tax Incentives Improve The Performance of Indonesian MSME?' (2023) 7 Jurnal Pajak Indonesia.[67-77].

[46] Dian Purnama Anugerah and Masitoh Indriani, 'Data Protection in Financial Technology Services (A Study in Indonesian Legal Perspective)' (2018) 21 Sriwijaya Law Review.[1-11].

The Thai government also supports certification and standardization of security for fintech companies. These measures help build trust and ensure that fintech entities adhere to established security standards. By developing a robust digital infrastructure and implementing effective consumer protection regulations, the Thai government is creating an environment that supports fintech growth while providing security and trust to consumers. This strong foundation is key to stimulating innovation, increasing fintech penetration, and delivering tangible benefits to the people of Thailand.[47]

Structuring Fintech Regulations for the Development of SMEs in Indonesia: Challenges and Solutions

The development of fintech for MSMEs in Indonesia has been a crucial catalyst in improving financial access and inclusion. Over time, the fintech sector has experienced rapid growth, bringing positive changes to the MSME ecosystem in Indonesia. Fintech also provides inclusive financial services for MSMEs that previously had no access to formal banking services. Through fintech applications and platforms, MSMEs can open accounts, access savings products, and even take advantage of affordable insurance services.[48] This collaboration may include joint financing, the development of new products, and the integration of traditional financial services with fintech technology. With the continued growth of fintech in Indonesia, MSMEs are gaining broader access to financial services that support their business growth and resilience. The integration of traditional financial services with fintech technology has a positive impact on simplifying processes and improving efficiency.

The implementation of fintech in Malaysia and Thailand provides valuable lessons that Indonesia can refer to in developing its fintech ecosystem. Some of these lessons include aspects of regulation, collaboration among stakeholders,

[47] The Association of Southeast Asian Nations, *Asean Digital Masterplan 2025 ASEAN as a Leading Digital Community and Economic Bloc, Powered by Secure and Transformative Digital Services, Technologies and Ecosystem* (The Association of Southeast Asian Nations 2020).[18].

[48] Abdul Manap, 'The Role of Fintech in Micro, Small And Medium Enterprises (MSME)' (2023) 12 Jurnal Ekonomi.

and empowering SMEs. The introduction of the Regulatory Sandbox by Bank Negara Malaysia provides space for innovation without compromising financial system stability. Indonesia may consider implementing a similar mechanism to give fintech companies the opportunity to test new products and services in a controlled environment. The Thai government has established friendly regulations that support fintech innovation. The clarity in policy formulation helps create legal certainty for fintech companies, fostering the growth of the sector.[49]

The utilization of fintech in the development of MSMEs brings several challenges that need to be addressed to maximize its positive impact. Many MSME players still have low levels of financial literacy. Understanding the concept of fintech and how to manage digital financial services needs to be enhanced through effective educational programs. Data security is a primary concern. MSMEs and consumers are worried about the potential risks of cyber security, identity theft, and information leaks that may occur in the use of fintech. Building trust in the security system is key to overcoming this challenge. The complex fintech regulatory environment can be an obstacle. MSMEs may face difficulties in understanding and complying with constantly changing regulatory requirements. Efforts are needed to simplify regulations and provide clear guidance to MSMEs.[50] The development of this infrastructure is crucial to support the utilization of fintech across the entire region.

To overcome barriers in the implementation of fintech for financial inclusion and the development of MSMEs, concrete solutions involving various stakeholders, including the government, financial institutions, fintech industry players, and MSME communities, are needed. In addressing barriers to fintech implementation leading to financial inclusion and MSME development, there are several concrete solutions that can be implemented. Collaboration between the government, financial institutions, fintech industry players, and the MSME community is key to addressing

[49] Batunanggar (n 27).

[50] Isnurrini Hidayat Susilowati, 'Financial Technology in The Development of UMKM' (2020) 11 Enrichment: Journal of Management.[1-16].

these challenges.[51] First and foremost, the importance of specialized education and training programs for MSME players to enhance financial literacy and technological understanding needs to be emphasized. Inclusive digital infrastructure is also a crucial factor, with investments in internet connectivity and uniform electricity distribution throughout the regions.

To address micro-financing barriers, it is essential to develop fintech platforms specifically for micro-financing and peer-to-peer lending models. Government support is also a critical factor, both in the form of financial support and incentives for fintech players focusing on financial inclusion and MSME development. Innovations in user-friendly financial services, intensive financial literacy campaigns, and sustainable monitoring are additional necessary steps. All these solutions are directed toward creating an environment that supports and ensures fintech adoption can provide maximum benefits for MSMEs in Indonesia.[52] Through the implementation of these solutions, it is hoped that barriers in fintech implementation can be more effectively overcome, creating broader financial inclusion and supporting the overall growth of the MSME sector. To enhance the role of fintech in strengthening access and financial inclusion for MSME development, several aspects need improvement, namely:[53] a) Digitalization of licensing, b) Security and consumer protection standards, c) Special regulations for fintech financing, d) Increased financial literacy and inclusion, and e) Transparency and accountability.

a) Digitalization of Licensing

In the context of enhancing licensing efficiency, it is crucial to implement concrete measures to ensure that the licensing process for fintech players

[51] Khairina Rosyadah, 'The Role of Fintech: Financial Inclusion in MSMEs (Case Study in Makassar City)' (2021) 8 Jurnal Manajemen Bisnis.[268-275].

[52] Sumit Kumar,[*et.,al.*] ', Adrian Li, Helen Wong, Hameer Chauhan, Shobhit Shubhankar and Ignacio Oetama', (*BCG*) <https://www.bcg.com/publications/2023/fintech-industry-indonesia-growth> accessed 3 March 2024.

[53] Garry Bruton, 'New Financial Alternatives in Seeding Entrepreneurship: Microfinance, Crowdfunding, and Peer–to–Peer Innovations, Entrepreneurship Theory and Practice' (2015) 39 Sage Journal.[1-25].

seeking to operate becomes easier, faster, and more transparent. This involves the development of guidelines that facilitate understanding and application of regulations, both by fintech players and the authorities handling the licensing. Additionally, training and capacity-building for officials responsible for the licensing process are essential. This aims to improve their understanding of the fintech industry, enabling them to assess and process licenses more efficiently.[54]

Guideline documents should be designed in such a way that fintech players can easily comprehend licensing requirements and implement them without significant obstacles. This training may include a deep understanding of fintech business models, the technologies used, and their impact on the financial sector. Capacity-building will assist officials in making more accurate and efficient licensing decisions.[55] Through periodic evaluations, regulators can identify potential improvements and ensure that the licensing process keeps pace with technological advancements and industry needs.

b) Security Standards and Consumer Protection

In addition to the efficiency of licensing, strengthening regulations related to data security and consumer privacy is a crucial step in building a robust foundation in the fintech ecosystem. These efforts aim not only to protect consumers but also to provide adequate protection for MSMEs increasingly relying on fintech services. This includes regulations on how personal data can be collected, stored, and utilized by fintech companies. Ensuring transparency in consumer data management is key. By integrating these measures, it is expected that regulations related to data security and privacy can create a secure and trustworthy environment for both consumers and MSMEs.[56] Effective regulations will support fintech growth while prioritizing the protection of data security and consumer privacy.

---

[54] EBI, *Fintech Regulation and the Licensing Principle* (EBI 2023).[69].

[55] P Bains and Wu, C, 'Institutional Arrangements for Fintech Regulation: Supervisory Monitoring' (2023) 004 Fintech Notes <https://doi.org/10.5089/9798400245664.063.A001>.

[56] I Lukonga, 'Fintech, Inclusive Growth and Cyber Risks: Focus on the MENAP and CCA Regions' (2018) (201), A001 <https://doi.org/10.5089/9781484374900.001.A001>.

Strengthening regulations related to data security and consumer privacy is an essential step in shaping a secure and reliable fintech ecosystem, especially for MSMEs increasingly dependent on fintech services. Essentially, these regulations cover personal data management, information transparency, the use of encryption technology, the establishment of ethical codes and security standards, and the implementation of routine security audits. First, clear provisions on how personal data are collected, stored, and used by fintech companies need to be established. This ensures that the integrity and confidentiality of consumers' and MSMEs' personal information are well-protected. Second, information transparency is crucial, where fintech companies are obliged to provide clear information about data usage to consumers and MSMEs. This includes transparent notification of the purposes of data collection, types of data collected, and privacy rights held by consumers.[57]

c) Special Regulations for Fintech Financing

These special regulations can encompass several essential aspects involving loan amounts, interest rates, and collection procedures. Firstly, regulations can govern the amount of loans that can be offered by peer-to-peer lending platforms. This is important to prevent excessive or mismatched loans with borrowers' repayment capacities. Setting these limits may involve risk analysis and borrowers' repayment abilities, ensuring that loans provided align with the borrowers' needs and capabilities.[58] Furthermore, regulations need to consider the interest rates applied by peer-to-peer lending platforms. These restrictions can prevent unfair or detrimental interest rate practices for borrowers. Alongside this, establishing reasonable interest rates can also help encourage the development of the fintech financing industry while maintaining fairness and balance among all parties involved.

[57] Sofie Blakstad and Robert Allen, *Fintech Revolution Universal Inclusion in The New Financial Ecosystem* (Palgrave Macmillan 2018).[87].

[58] Naoko Nemoto,[*et.,al.*], 'Optimal Regulation of P2P Lending for Small and Medium-Sized Enterprises' (2019) No. 912 January 2019.[1-17].

Fair collection procedures also need to be regulated within the regulations. This includes provisions that govern ethical and non-detrimental collection actions. Thus, regulations can provide protection to borrowers from unfair or detrimental collection practices while providing guidelines for peer-to-peer lending platforms in handling payment issues. By formulating special regulations covering these aspects, it is expected to create a conducive environment for the growth of fintech financing, ensuring sustainability, and guaranteeing fair and responsible services to all parties involved in this ecosystem.[59]

d) Improvement of Financial Literacy and Inclusion

These regulations should not only be focused on strict regulation but also implement a flexible approach to avoid hindering innovation. This approach needs to consider the diversity of fintech business models, ranging from peer-to-peer lending, payment gateways, to insurtech. Flexibility in regulations will open space for the development of diverse business models, allowing fintech to continue innovating without being constrained by rigid rules.[60] This aligns with the spirit of accommodating the rapidly changing dynamics of the fintech world. One crucial element in inclusive regulations is encouraging active fintech participation in financial literacy and education programs for MSMEs.[61]

Integrating this obligation into regulations will have a double positive impact. First, MSMEs will have a better understanding of fintech services and the benefits they can obtain. Second, active fintech participation in financial literacy can also enhance a positive image and public trust in this industry. By developing inclusive and flexible regulations, the government can create a balanced legal framework that provides security while encouraging innovation.

[59] Ika Atikah, 'Consumer Protection and Fintech Companies in Indonesia: Innovations and Challenges of The Financial Services Authority' (2020) 9 Jurnal Hukum dan Peradilan.[132-153].

[60] C Basdekis,[*et.,al.*], 'FinTech's Rapid Growth and Its Effect on the Banking Sector' (2022) 6 Journal of Banking and Financial Technology.[159-176]. <https://doi.org/10.1007/s42786-022-00045-w>.

[61] Dwi Tatak Subagiyo, 'Characteristics of Financial Technology as Financing Alternative Capitalization of Medium Small-Medium Enterprises (MSME)' (2021) 15 Fiat Justisia: Jurnal Ilmu Hukum.[133-158].

This will create a dynamic fintech ecosystem, allowing various business models to thrive while ensuring the interests of consumers, especially MSMEs, remain protected.

e) Transparency and Accountability

In the development of regulations to support the growth of fintech, especially for MSMEs, it is essential to establish provisions that encourage transparency. These regulations should govern the disclosure of information related to costs and other terms associated with fintech services. Clarity in these matters will provide certainty for MSMEs regarding the costs they incur and the terms of the services they use.[62] Regulations should also mandate fintech companies to be responsible for the information provided to MSMEs. With these provisions, MSMEs will be more capable of making informed and intelligent decisions regarding the use of fintech services. In line with the principles of transparency and accountability, fintech companies should provide easily understandable access for MSMEs to comprehend all aspects related to the use of their fintech services.[63]

Conclusion

Fintech has proven itself as an innovative solution that can provide easier and faster access to capital for MSMEs. Business models such as peer-to-peer lending, payment gateways, and insurtech have demonstrated their positive impact in supporting the growth and resilience of MSMEs. Despite the significant potential, MSMEs still encounter obstacles in utilizing fintech services, especially related to financial literacy, regulatory uncertainty, and a lack of understanding of the risks and benefits of using fintech. Regulations play a crucial role in creating an environment that supports the development of fintech and provides protection for MSMEs. Efficient licensing processes, data security regulations, transparency, and

[62] Rosyadah (n 52).[268-275].

[63] Trissia Wijaya, 'Unpacking The Fintech Regulatory Sandbox Framework in Indonesia: Risks Management and The Data Privacy Imperative' (2023) Policy Paper No. 60 Center for International Private Enterprise (CIPE).[1-48].

responsible information disclosure are key points to ensure sustainability and trust in the use of fintech by MSMEs.

Collaboration between the government, fintech, and MSMEs forms a strong foundation in shaping an optimal ecosystem. With supportive regulations, MSMEs can feel secure and protected in adopting fintech services. Intensive education helps MSMEs optimize the use of fintech according to their business needs. This collaboration also creates an environment where fintech can continue to innovate and respond to market dynamics more rapidly. This conclusion provides a solid basis for the further design of policies that are responsive to fintech developments. With various interconnected elements, the government can be a key driver for the growth and strengthening of MSMEs through the utilization of fintech. The results of this research are also expected to contribute to further studies on the comparative analysis of fintech regulations in ASEAN countries, with a focus on Malaysia, Thailand, and Indonesia.

Acknowledgments

The completion of this article has been made possible through the collective efforts and support of numerous individuals and organizations. We express our heartfelt gratitude to The Rector of Universitas Bhayangkara Jakarta Raya, who consistently supports and sets an example for scholars within the campus environment to advance the academic atmosphere.

Bibliography

Afandi A,[*et.,al.*], 'Do Tax Incentives Improve The Performance of Indonesian MSME?' (2023) 7 Jurnal Pajak Indonesia.

Aminullah E,[*et.,al.*], 'Interactive Components of Digital MSMEs Ecosystem for Inclusive Digital Economy in Indonesia' [2022] Journal of the Knowledge Economy <https://doi.org/10.1007/s13132-022-01086-8>.

Anugerah DP and Masitoh Indriani, 'Data Protection in Financial Technology Services (A Study in Indonesian Legal Perspective)' (2018) 21 Sriwijaya Law Review.

Ardichvili A,[*et.,al.*], 'The Role of Angel Investors in the Assembly of Non-Financial Resources of New Ventures: Conceptual Framework and Empirical Evidence' (2002) 10 Journal of Enterprising Culture.

Atikah I, 'Consumer Protection and Fintech Companies in Indonesia: Innovations and Challenges of The Financial Services Authority' (2020) 9 Jurnal Hukum dan Peradilan.

Bains P and Wu, C, 'Institutional Arrangements for Fintech Regulation: Supervisory Monitoring' (2023) 004 Fintech Notes <https://doi.org/10.5089/9798400245664.063.A001>

Barroso M, 'Digital Transformation and The Emergence of The Fintech Sector: Systematic Literature Review' (2022) 2 Digital Business.

Basdekis C, [*et.,al.*],'FinTech's Rapid Growth and Its Effect on the Banking Sector' (2022) 6 Journal of Banking and Financial Technology <https://doi.org/10.1007/s42786-022-00045-w>.

Batunanggar S, 'Fintech Development and Regulatory Frameworks in Indonesia' (ADBI Worki, 2019) No. 1014 October 2019.

Bharath Y, *InsurTech-Working Group Findings & Recommendations: Report on InsurTech in the Context of Risk Assessment, Product Design and Pricing* (Hyderabad 2023).

Bhat JR, Salman A. AlQahtani and Maziar Nekovee 'FinTech Enablers, Use Cases, and Role of Future Internet of Things' (2023) 35 Journal of King Saud University-Computer and Information Sciences.

Blakstad S Robert Allen, *Fintech Revolution Universal Inclusion in The New Financial Ecosystem* (Palgrave Macmillan 2018).

Bruton G, 'New Financial Alternatives in Seeding Entrepreneurship: Microfinance, Crowdfunding, and Peer–to–Peer Innovations, Entrepreneurship Theory and Practice' (2015) 39 Sage Journal.

Burger N, *Reforming Policies for Small and Medium-Sized Enterprises in Indonesia* (TNP2K 2015).

Charfeddine L, Mohamed Ismail Umlai and Mazen El-Masri, 'Impact of Financial Literacy, Perceived Access to Finance, ICT Use, and Digitization on Credit Constraints: Evidence from Qatari MSME Importers' (2024) 10 Financial Innovation.

Diniyya AA, Mahdiah Aulia and Rofiul Wahyudi, 'Financial Technology Regulation in Malaysia And Indonesia: A Comparative Study' (2020) 3 Journal of Islamic Economics, Finance, and Banking.

EBI, *Fintech Regulation and the Licensing Principle* (EBI 2023).

Economic Planning Unit, *Prime Minister's Department, Malaysia Digital Economy Blueprint* (Putrajaya: Economic Planning Unit, Prime Minister's Department 2022).

Eti, S. D, [*et.,al.*],'Insurtech in Europe: Identifying the Top Investment Priorities for Driving Innovation' (2024) 10 Financial Innovation <https://doi.org/10.1186/s40854-023-00541-y>.

Feyen E, [*et.,al.*], 'Fintech and the Digital Transformation of Financial Services: Implications for Market Structure and Public Policy' BIS Papers No 117.

Gai P, [*et.,al.*], 'Regulatory Complexity and The Quest for Robust Regulation' (2019) No 8/June 2019.

Gomber P,[*et.,al.*], 'Digital Finance and FinTech: Current Research and Future Research Directions' (2017) 87 Journal of Business Economics.

Hamid NA, [*et.,al.*],'Fintech in Malaysia: Navigating Challenges and Shaping a Digital Future' (2024) 13 Accounting and Finance Research.

He D, [*et.,al.*], 'Fintech and Financial Services: Initial Considerations, Fintech and Financial Services' (2017) SDN/17/05, 2017.

Jenkins B, *Business Linkages: Lessons, Opportunities, And Challenges* (IFC 2007).

Juminawati S,[*et.,al.*], 'The Effect of Micro, Small and Medium Enterprises on Economic Growth' (2021) 4 BRICI-Journal.

Kang J, 'Mobile Payment in Fintech Environment: Trends, Security Challenges, and Services' (2018) 8 Human-centric Computing and Information Sciences.

Kementerian Koordinator Bidang Perekonomian Republik, 'UMKM Plays a Vital Role in the Indonesian Economy' (*Kementerian Koordinator Bidang Perekonomian Republik*, 2021) <https://ekon.go.id/publikasi/detail/2969/umkm-menjadi-pilar-penting-dalam-perekonomian-indonesia> accessed 21 April 2024.

Kumar S, ', Adrian Li, Helen Wong, Hameer Chauhan, Shobhit Shubhankar and Ignacio Oetama', (*BCG*) <https://www.bcg.com/publications/2023/fintech-industry-indonesia-growth> accessed 3 March 2024.

Loo MK, 'Unleashing the Potential: Enhancing Technology Adoption and Innovation for Micro, Small and Medium-Sized Enterprises (MSMEs)' (2023) 11 Cogent Economics & Finance.

Lukonga I, 'Fintech, Inclusive Growth and Cyber Risks: Focus on the MENAP and CCA Regions' (2018) (201), A001 <https://doi.org/10.5089/9781484374900.001.A001>.

Lumenta UZ, and Frederik G. Worang 'The Influence of Financial Inclusion on The Performance of Micro Small and Medium Enterprises in North Sulawesi' (2019) 7 Jurnal EMBA.

Manap A, [*et.,al.*], 'Small and Medium Enterprises (MSMES)' (2023) 12 Jurnal Ekonomi 468 <https://ejournal.seaninstitute.or.id/index.php/Ekonomi/article/view/1204>.

Manap A, 'The Role of Fintech in Micro, Small And Medium Enterprises (MSME)' (2023) 12 Jurnal Ekonomi.

Martinez-Fernandez C, *Employment and Skills Strategies in Southeast Asia Setting the Scene* (OECD 2009).

Mollick E, 'The Dynamics of Crowdfunding: An Exploratory Study' (2014) 29 Journal of Business Venturing.

Naceur S Ben,[*et.,al.*] 'Is FinTech Eating the Bank's Lunch?' WP/23/239.

Nemoto N,[*et.,al.*], 'Optimal Regulation of P2P Lending for Small and Medium-Sized Enterprises' (2019) No. 912 January 2019.

Nowell LS, Jill M. Norris and Nancy J. Moules, 'Thematic Analysis: Striving to Meet The Trustworthiness Criteria' (2017) 16 International Journal of Qualitative Methods.

Nugroho AP, 'Qualitative Investigation: Exploring the Challenges Faced by Indonesian SMEs in Accessing Financial Services in Sukabumi City' (2023) 1 West Science Interdisciplinary Studies.

OECD, 'Artificial Intelligence, Machine Learning and Big Data in Finance: Opportunities, Challenges, and Implications for Policy Makers' (*OECD*, 2021) <https://www.oecd.org/finance/artificial-intelligence-machine-learningbig-data-in-finance.htm>.

——, *Managing Shocks and Transitions Future-Proofing SME and Entrepreneurship Policies Key* (Issues Pap, 2023).

OJK, *The Indonesian Financial Services Sector Master Plan 2021-2025 to Recover The National Economy and Enhance The Financial Services Sector Resiliency and Competitiveness* (OJK 2020).

Peitz M, *The Oxford Handbook of the Digital Economy* (Oxford University Press 2012).

Putri RT,[*et.,al.*] 'The Role Of Financial Technology (Fintech) in Developing MSMEs' (2023) 4 International Journal of Economics Development Research.

Rizkyana NAL,[*et.,al.*], 'Impact of Tax Imposition on Electronic Commerce (E-Commerce) Transactions' (2020) 25 Perspektif.

Rizqiya F,[*et.,al.*], 'The Role of Fintech in Improving Financial Literacy in Micro, Small and Medium Enterprises in Subang' (2022) 10 IJAFIBS.

Rosyadah K, 'The Role of Fintech: Financial Inclusion in MSMEs (Case Study in Makassar City)' (2021) 8 Jurnal Manajemen Bisnis.

Subagiyo DT, 'Characteristics of Financial Technology as Financing Alternative Capitalization of Medium Small-Medium Enterprises (MSME)' (2021) 15 Fiat Justisia: Jurnal Ilmu Hukum.

Suleiman A, Thomas Dewaranu and Noor Halimah Anjani, 'Creating Informed Consumers: Tracking Financial Literacy Programs in Indonesia' (2022) Policy Paper No. 49, 2022.

Suryono RR, Indra Budi and Betty Purwandari 'Detection of Fintech P2P Lending Issues in Indonesia' (2021) 7 Heliyon.

Susilowati IH, 'Financial Technology in The Development of UMKM' (2020) 11 Enrichment: Journal of Management.

The Association of Southeast Asian Nations, *Asean Digital Masterplan 2025 ASEAN as a Leading Digital Community and Economic Bloc, Powered by Secure and Transformative Digital Services, Technologies and Ecosystem* (The Association of Southeast Asian Nations 2020).

The World Bank, 'How Regulators Respond to Fintech Evaluating the Different Approaches—Sandboxes and Beyond, Finance, Competitiveness & Innovation Global Practice' (Finance, C, Fintech Note 2020) 5.

Valery A and Victor Metellus, *Policy Framework on Developing a National Fintech Strategy Policy Framework an Ecosystem Approach to Inclusive Fintech, Digital Economy, Financial Inclusion and The Sustainable Development*

Goals (Kualalumpur: (Policy Fra, Alliance for Financial Inclusion 2022).

Wijaya T, 'Unpacking The Fintech Regulatory Sandbox Framework in Indonesia: Risks Management and The Data Privacy Imperative' (2023) No. 60, 2023.

Wongpinunwatana N, 'Ecommerce Adoption in Thailand: An Empirical Study of Small and Medium Enterprises (SMEs)' (2003) 6 Journal of Global Information Technology Management.

Yoshino N and Farhad Taghizadeh-Hesary, 'Major Challenges Facing Small and Medium-Sized Enterprises in Asia and Solutions for Mitigating Them' (2016) 564 April 2016.

HOW TO CITE: Sugeng and Widya Romasindah Aidy, 'Regulating Digital Finance for Small and Medium Enterprises Growth: Lessons From Thailand and Malaysia' (2025) 40 Yuridika.