

Fintech, the threat of technology in the conventional financial system

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■ **Abstract.** This study centred on the effect of technology on conventional payment methods and their consequences for society. Considering the presence of digital currencies, also known as cryptocurrencies, used in transactions through financial technology (fintech), this study could serve as a basis for developing laws and regulations governing fintech. The purpose of this study was to offer a clear and specific understanding of the legitimacy and societal advantages of fintech in Indonesia. This study employed regulatory research methodology, incorporating socio-legal techniques, legislative analysis, and examination of legal concepts. The findings of this study have effectively achieved three fundamental criteria in the use of fintech: assurance, benefit, and fairness. The regulations on fintech are outlined in Bank Indonesia Regulation No. 19/12/PBI/2017, Financial Services Authority Regulation No. 77/POJK.01/2016, and Law No. 8 of 1999, which also address matters related to consumer protection. From a sociocultural standpoint, fintech embodies a technologically-driven revolution that fosters societal development. Fintech endeavours to offer benefits to the public through facilitating electronic financial transactions. It was emphasised that fintech plays a crucial role in reshaping society by revolutionising how people interact with finances. A key aspect of this transformation is the shift away from conventional payment methods towards digital alternatives. It is essential for both consumers and fintech companies to understand and follow legal requirements when implementing fintech solutions,

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as adherence to regulations is critical. Failure to uphold ethical standards within the fintech industry can hinder its widespread adoption and lead to negative consequences. Understanding the potential threats posed by fintech to the conventional financial system will allow financial institutions and regulators to develop effective risk management strategies

■ **Keywords:** financial technology; fairness; customer protection; social change; legal purpose

■ Introduction

The progress of technology in the current era of globalisation is closely intertwined with societal development. The consequences of this expansion can be advantageous or detrimental, irrespective of how individuals employ technology. Technological advancements, especially in the field of financial technology (fintech), are having a profound effect on societal transformation. Fintech is a manifestation of economic and technological advancement within the trade business. The internet serves as the fundamental basis for technology advancements in the trading industry, usually referred to as online commerce. Online trading is a prevalent practice in society, demonstrating the impact of technological advancements on societal transformation.

The emergence of fintech has been influenced by the mechanics of buying and selling transactions. R. Rusmi *et al.* (2022) found that conventional forms of exchange, such as bartering, continue to be prevalent in Indonesia. F. Allen *et al.* (2022) present evidence that fintech and decentralised finance have permeated every aspect of the financial system and have bolstered financial inclusion over the last decade. According to M.M. Alshater *et al.* (2022), fintech has experienced advancements that are now aligned with religious law, specifically Islamic fintech. Islamic fintech aims to create and implement innovative technological solutions that follow Sharia principles and cater to the needs of Islamic financial institutions. F. Shao (2022) emphasised that the digital divide poses a considerable challenge to the development of fintech in rural areas. To overcome this obstacle and promote the global application of fintech, particularly in rural areas, the revitalisation of these regions through the utilisation of machine learning algorithms is imperative. M. Doumpos *et al.* (2023) discussed how they utilised operational research approaches and artificial intelligence to address significant obstacles and possibilities in the banking sector, particularly in fintech.

Fintech presents a potential threat to organisations that are still engaged in conventional cash-based transaction systems for buying and selling. Hence, it is crucial to prioritise the topic of legal clarity on this technology. Key areas of attention should be the expansion of fintech services to the lower-middle socio-economic stratum and the integration of payment

systems in traditional markets. In 2020, Indonesian peer-to-peer lending fintech startups primarily aimed to capture numerous conventional markets. These firms want to integrate financial technology into payment systems in as many as 5,000 conventional marketplaces (Jati, 2020). Upon analysing the fundamental tenets of the Indonesian government, it is clear that fintech occupies a prominent position in the nation's economic expansion. Fintech plays a crucial role in promoting economic development by ensuring fair efficiency and balanced advancement¹.

The purpose of this study was to investigate whether the payment system supported by fintech media follows the required legal criteria. It focused on examining two specific problem formulations. What is the organisational framework of the payment system enabled by fintech media and how does it affect social transformation? Furthermore, this study examined the fintech payment system in Indonesia through the lens of social transformation and found how fintech can effectively fulfil legal purposes, such as ensuring certainty, advantages, and equity.

■ Materials and Methods

This study primarily examined normative research methodologies, specifically focusing on socio-legal approaches, statutory approaches, and legal analytical approaches. Normative research methodology was employed to examine the legal certainty and efficiency of financial phenomena by evaluating pertinent legal sources. This study used the normative method to analyse the internal characteristics of positive law on fintech. Therefore, it was imperative to gather primary sources of legal data, which encompass relevant laws and regulations. The normative research methodology helped to examine the existing laws and regulations on fintech concerns from a legal standpoint. Hence, normative research methodology was bolstered by legal methodologies and the examination of legal concepts to elucidate and scrutinise fintech from a legal perspective. The incorporation of socio-legal approaches was crucial due to the integration of several interdisciplinary and multidisciplinary sciences, including social sciences and computer technology science, in fintech research. The purpose of employing a socio-legal approach was to fully integrate the

¹ Constitution of the Republic of Indonesia. (1945, August). Retrieved from <https://www.mkri.id/public/content/infoumum/regulation/pdf/UUD45%20ASLI.pdf>.

knowledge, expertise, and research methodologies of multiple disciplines to address the theoretical and methodological constraints of those disciplines. This approach aimed to establish a basis for the development of a novel form of fintech analysis within the field of law. This socio-legal method aimed to comprehensively investigate a problem by not only examining relevant legal norms or doctrines but also considering the broader context of fintech rules and implementation in Indonesia. An integrative strategy was expected to enhance endeavours in the pursuit of truth and the investigation of occurring situations.

The sample for this study comprised a range of laws and regulations, notably the Law of the Republic of Indonesia No. 8 of 1999, which pertains to consumer protection¹, Law of the Republic of Indonesia No. 19 of 2016 “Amendments to Law No. 11 of 2008 concerning Electronic Information and Transactions”², Bank Indonesia Regulations, Regulations of the Financial Services Authority of the Republic of Indonesia, and Circular Letter of the Indonesian Financial Services Authority, The International Financial Services Centres Authority Act, 2019³, Notification of the Bank of Thailand No. FPG. 6/2565 Re: Regulations on Commercial Banks’ Financial Business Groups Undertaking Digital Asset-Related Businesses and Transactions.⁴ Furthermore, this study employed a prescriptive analytical methodology. This study analysed the legislative and regulatory framework that governs the different aspects of financial technology (fintech). The research was backed by secondary sources, such as legal and scientific literature and government publications, to address uncertainties in the legislation cited.

■ Results and Discussion

Financial technology overview. Fintech is well-known in business, particularly in Indonesia, especially during the COVID-19 pandemic. As a result of the pandemic, all activities, particularly in business ventures, have had to be shifted to a hybrid system and conducted fully through the network, including the payment system. Regarding fintech regulation, Article 1 Item 1 of the regulation issued by Bank Indonesia defines financial technology as a system that utilises technology to produce products, services, technologies, and business models in the modern era. These innovations have implications for maintaining monetary

stability, ensuring the efficiency and stability of the financial system, and enhancing security. Fintech-based financial systems can overcome these challenges⁵.

The fintech industry in Indonesia is seeing tremendous growth due to the country’s massive population, which is the highest in Southeast Asia and is among the top five most populous countries globally. The inception of fintech in Indonesia commenced in 2015, with the foundation of the Indonesian Fintech Association (AFI). AFI has a major role in shaping the growth of fintech in Indonesia (Igamo *et al.*, 2024). AFI was established in 2016, leading to the emergence of companies and goods involved in this fintech system.

The presence of 125 businesses listed at Financial Services Authority Indonesia (OJK) signifies the enormous development of fintech. Furthermore, Bank Indonesia has registered 54 payment systems facilitated by fintech media (Rahman, 2020). The Indonesian population is considered technologically savvy, particularly in financial technology (fintech). The distribution of loans through fintech in Indonesia in 2019 amounted to Rp 25.92 tn, showing a 14.36% rise compared to Rp 22.67 tn in 2018. AFI reported a 78% growth in the fintech industry in Indonesia in 2016. As of November 2016, AFI documented 135-140 startup enterprises in this sector (Wahyuni, 2019). Based on the statement above, Indonesia embraces this fintech system to address the financial requirements of the social society in Indonesia. Fintech offers considerable potential to address the pressing demands of conventional financial institutions in Indonesia. Fintech development in Indonesia encompasses more than just funding and lending. It has expanded into transport services, with companies like Gojek introducing GoPay, Grab launching Dompert Grab, and Uber also entering the market. The fintech industry in Indonesia is now mostly controlled by entrepreneurs involved in payment services (43%), lending (17%), and other forms of aggregators, crowdfunding, and analogous activities (Hassan *et al.*, 2023).

The fintech industry is a popular segment of the financial services sector that has gained significant traction in the current era of globalisation, particularly during the COVID-19 pandemic. The government and the community view fintech as a promising solution to facilitate the availability of financial services (Murinde *et al.*, 2022). Fintech is driving a

¹ Law of the Republic of Indonesia No. 8 “On Consumer Protection”. (1999, April). Retrieved from <https://peraturan.bpk.go.id/Details/45288/uu-no-8-tahun-1999>.

² Law of the Republic of Indonesia No. 19 “On Amendments to Law No. 11 of 2008 Concerning Electronic Information and Transactions”. (2016, November). Retrieved from <https://peraturan.bpk.go.id/Details/37582/uu-no-19-tahun-2016>.

³ The International Financial Services Centres Authority Act. (2019, December). Retrieved from https://www.indiacode.nic.in/bitstream/123456789/14009/1/A2019__50.pdf.

⁴ Notification of the Bank of Thailand No. FPG. 6/2565 “Regulations on Commercial Banks’ Financial Business Groups Undertaking Digital Asset Related Businesses and Transactions”. (2022, October). Retrieved from <https://www.bot.or.th/content/dam/bot/fips/documents/FPG/2565/EngPDF/25650188.pdf>.

⁵ Regulation of the Bank of Indonesia No. 19/12/PBI/2017 “On Implementation of Financial Technology”. (2017, November). Retrieved from https://www.bi.go.id/id/publikasi/peraturan/Documents/PBI_191217.pdf.

revolutionary transformation in the startup business sector by facilitating various services such as mobile payments, crowdfunding, and money transfer services. Fintech is demonstrated by the efficacy of the crowdfunding platform, which enables the collection of donations from a global audience straightforwardly and effortlessly. Furthermore, fintech enables individuals to conduct global or international money transfers. PayPal exemplifies the influence of fintech by automatically adjusting currency exchange rates, enabling individuals in countries like Australia to purchase goods from Indonesia conveniently.

It is important to understand that the services provided by this fintech platform are closely linked to technology, which is a crucial aspect in driving societal change. From the perspective of backend system development, fintech presently utilises a wide scope of programming languages, including Ruby, Java, Go, etc., to construct several services or mobile applications (Demir *et al.*, 2022). Through the development of mobile applications, fintech service users may effortlessly access data, financial transactions, loans, and bill payments to meet their everyday demands (Zhou *et al.*, 2022).

The key considerations in advancing fintech today are safeguarding user data and the integrity of transaction processes. Each database management system (DBMS), such as MySQL, MongoDB, and PostgreSQL, offers distinct functionalities (Pizzi *et al.*, 2021). Several security measures, including QR Code Scan and OTP (One Time Password) code, were created to protect data and transactions (Agung, 2021). Fintech companies currently under development and registered and licensed by the OJK have introduced convenient transaction methods, including top-ups, withdrawals, and transfers through banks and other third-party channels. The global perspective on technological advancements in digitalising payment methods, as seen in the fintech system, reveals rapid and continuous growth in various sectors. These sectors include lending startups, payment systems, financial planning, financing, retail investment, financial research, remittances, and more.

The legal perspective of fintech. The genuine essence of the legal purpose encompasses the concepts of certainty, practicality, and fairness following the law. Before discussing this fintech phenomenon, it is imperative first to explore the concept of legal certainty and its relevance to this study. Legal certainty, as defined by science, is the fundamental basis of a state that adheres to legal ideology, like Indonesia,

where the emphasis is on establishing laws and regulations, adherence to them, and pursuing justice in all state policies. The concept of legal certainty is closely intertwined with the principle of the rule of law, indicating that the law holds supreme authority within a state. The rule of law is a fundamental concept that guarantees the fair and consistent enforcement of laws, safeguards individual rights, and maintains fairness and responsibility within a community. Sovereignty is derived from the law rather than from a leader's authority, position, or rank. The ultimate sovereignty is in the power of the law, as it is the legal standards that grant and define an individual's rights and obligations. Legal standards are predetermined regulations or criteria that serve as benchmarks for assessing compliance with the law, making decisions, or determining accountability.

In fintech, the determination of legal certainty is based on the regulations set by Bank Indonesia and the Financial Services Authority (OJK). Bank Indonesia has established two rules related to fintech. The initial rule, implemented in 2016, concerns limitations on processing financial transactions. The second provision, enacted in 2017, pertains to the application of financial technology. The regulations on fintech are explicitly outlined in Article 1 of Bank Indonesia Regulation No. 19/12/PBI/2017¹. According to this regulation, fintech is a technological tool within the financial system that generates products and services to facilitate secure and efficient payment systems. The parameters for fintech are outlined in Article 3, Item 1, which identifies five distinct sectors for its application. One of these categories pertains to financial services and payment systems.

Additionally, according to Article 2 Item 2 of Financial Services Authority Regulation No. 77/POJK.01/2016², it is required that providers of financial services in the payment system using technology services must be legal entities in the form of limited liability companies or cooperatives. The precise framework of fintech regulation in Indonesia has not yet been established within the context of state legislation. Admittedly, fintech has undeniably received legal recognition from regulatory bodies such as Bank Indonesia and OJK.

Legal expediency is a legal purpose that is inherently biased towards society. Jeremy Bentham's comment confirms that the objective assessment of a legal policy involves determining if the policy may yield advantages or produce a useful outcome (Lasswell & Kalpan, 2017). Legal expediency involves the practi-

¹ Regulation of the Bank of Indonesia No. 19/12/PBI/2017 "On Implementation of Financial Technology". (2017, November). Retrieved from https://www.bi.go.id/id/publikasi/peraturan/Documents/PBI_191217.pdf.

² Financial Services Authority Regulation No. 77/POJK.01/2016 "Information Technology-Based Money Lending and Borrowing Services". (2016, December). Retrieved from <https://www.ojk.go.id/id/regulasi/otoritas-jasa-keuangan/peraturan-ojk/Documents/Pages/POJK-Nomor-77-POJK.01-2016/SAL%20-%20POJK%20Fintech.pdf>.

cal and pragmatic criteria that guide decision-making in the legal system, considering aspects like efficiency, feasibility, and the overall advantages and repercussions of a particular course of action. The legal system comprises legal policies, and a policy is considered a failure if it causes harm to the affected population.

The legal convenience in the fintech industry is clear in the stipulations of Article 3 Item 2 of Bank Indonesia Regulation No. 19/12/PBI/2017¹, which specifies that fintech must meet certain characteristics, including the ability to deliver advantages to the community and be widely accessible. These laws demonstrate that fintech is a platform designed to serve the greater community. Fintech plays a crucial role, particularly during the COVID-19 pandemic, where non-cash payment methods, lending, and other financial activities are necessary. The legal purpose of its elaboration is inherently intertwined with the concept of justice, namely legal justice. Legal justice seeks to provide an equitable allocation of societal rights and responsibilities. It is essential to have a beginning state that directly assures a fair process to ensure this condition's proper and accurate implementation. The essay examines the necessity of rethinking the rights of individuals in motion, highlighting the significance of legal protection rights as a crucial element in guaranteeing justice for society. This initial condition, known as the initial position, is characterised by the principles of freedom, rationality, and equality (El-Chaarani *et al.*, 2022).

Financial institutions, particularly those involved in fintech media, must comprehensively understand the legal rights and responsibilities outlined in laws and regulations. It is crucial to uphold legal fairness for companies and their customers or consumers. Nevertheless, considering the regulations set by Bank Indonesia and OJK that govern the application of fintech by enterprises, the focus stays on imposing penalties on companies that fail to follow the rules. Article 20, Items 1-3, explicitly state that fintech enterprises failing to follow the regulations would face severe penalties, including termination of business activities, removal from the list of fintech operators, and revocation of business licenses².

Legal justice must be examined from the standpoint of fintech organisers and the perspective of fintech consumers, who are the customers of these fintech businesses. Legal justice encompasses the just and unbiased enforcement of laws, regulations, and court procedures to guarantee that persons and organisations are held responsible for their conduct

and get fair treatment within the legal framework. Thus, to explain fintech in terms of legal justice, it is essential to delve into the legal regulations about fintech consumers, who are essential members of contemporary society. Specifically, there are currently no legal regulations for customers who actively engage in implementing this technology. Hence, this study will use the legislative provisions outlined in the Consumer Protection Law of 1999³ to guarantee equitable treatment for customers of fintech services.

The fairness principle is a key idea that can be applied to implement equitable fintech. Fairness is of utmost importance in climate negotiations, as it directs the conversations regarding the just allocation of duties, capabilities, and rights among nations. The idea of fairness states that everyone should be treated justly, with equal opportunities and results, regardless of their inherent qualities or circumstances. It functions as a fundamental principle in diverse fields, such as social justice, law, ethics, and decision-making procedures. The fairness principle of fintech pertains to guaranteeing equal and justifiable availability of financial services and products, irrespective of one's socioeconomic situation or demographic (Davidson, 2021). The text highlights the significance of transparent and impartial algorithms, equitable pricing, and equal treatment of customers to foster inclusivity and prevent prejudice. The fairness principles in fintech underscore the significance of guaranteeing equitable access and impartial treatment for all users, irrespective of their socioeconomic situation or background while utilising financial technology services. Financial technology services include refraining from engaging in discriminatory practices, reducing the influence of biases in algorithms and data, and actively advocating for openness and accountability in decision-making processes. The principle of fairness is a fundamental notion that governs ethical and moral issues in different circumstances, such as consumer protection. It highlights the need to treat consumers fairly and protect their rights and interests in commercial transactions and relationships with firms.

The proposed approach integrates fairness issues and legal purposes to advance sustainable development, enhance environmental quality, and reach the outcome of augmenting community economic value through fintech at both the provincial and national scales. In the context of legal procedures, the fairness principle denotes the notion that every individual should be treated equitably and without prejudice. Its priority is the equitable implementation of laws

¹ Regulation of the Bank of Indonesia No. 19/12/PBI/2017 "On Implementation of Financial Technology". (2017, November). Retrieved from https://www.bi.go.id/id/publikasi/peraturan/Documents/PBI_191217.pdf.

² Ibidem, 2017.

³ Law of the Republic of Indonesia No. 8 "On Consumer Protection". (1999, April). Retrieved from <https://peraturan.bpk.go.id/Details/45288/uu-no-8-tahun-1999>.

and procedures, guaranteeing that every individual is provided with an impartial and equitable chance to submit their argument and obtain a just resolution. The fairness principle is a guiding principle in resource allocation that aims to distribute resources equitably and impartially among users or entities. It ensures that no individual or group is disproportionately favoured or disadvantaged. The fairness concept in fintech consumer protection involves guaranteeing that individuals are treated fairly and without prejudice in their dealings with financial technology products and services. The concept entails advocating for transparent methods, impartial algorithms, and equitable access to financial possibilities while addressing any biases and protecting consumer rights. Ensuring equitable treatment, openness, and morally sound methods in delivering financial services to consumers (Mikołajczak & Becker, 2019). It includes equitable access to financial products and services, transparent disclosure of terms and conditions, and effective resolution channels for consumer complaints and disputes.

Consumer protection in electronic transactions, particularly in financial systems like fintech, is strongly linked to Laws and Regulations. Consumer protection seeks to defend individuals rights and interests when engaging with firms, promoting fairness, openness, and safety in the marketplace (Al-Khowarizmi *et al.*, 2024). Hence, social communities embody a certain demography that actively engages in consuming products and services provided by enterprises operating in fintech. People buy and sell goods, services, online events, and financial transactions using fintech services. Fintech services cover a diverse array of cutting-edge financial technologies and digital solutions that seek to improve efficiency, accessibility, and convenience in banking, payments, investing, and other financial operations (Etudaiye-Muhtar *et al.*, 2024). The community must exercise caution and selectivity to obtain legal protection when engaging in fintech activities. Legal protection in the fintech industry encompasses the implementation of regulatory frameworks, the preservation of consumer data

privacy, and the mitigation of potential risks such as cyber threats and criminal actions. Thus, this is done to ensure that the community, as consumers, can seek justice in the event of any financial losses made by fintech businesses. Justice in financial losses entails the impartial and just allocation of responsibility, accountability, and compensation among the parties affected. Section 2 establishes the principles and objectives of consumer protection. One of these concepts is the promotion of fairness and balance (Law of Indonesia on Consumer Protection)¹.

OJK demonstrates its commitment to ensuring justice for fintech consumers by issuing a Circular Letter of the Financial Services Authority No. 2/SEOJK.07/2014², which addresses the service and implementation of consumer complaints to financial service institutions. Furthermore, according to Article 1 No. 3 of the OJK Regulation on information technology-based money loans, it is specified that information technology-based lending services are a type of financial service that aims to facilitate the connection between lenders and borrowers to enter into money lending and borrow agreements using electronic transaction methods³. According to the regulations issued by OJK regarding consumer protection in fintech, if there are indications of actions that violate the rules and cause losses, OJK will request the cessation of business activities by fintech operators. Another form of protection carried out by OJK is legal advocacy for the interests of consumers who feel disadvantaged by filing lawsuits in court against the parties involved and causing such losses (Pranita & Suardana, 2019).

The above description suggests that fintech has been officially acknowledged and defined within Indonesia's legal framework. This recognition is evident in the regulations Bank Indonesia and the Financial Services Authority set forth. Fintech aims to offer advantages to the general public by enabling electronic financial transactions, as outlined in Article 3 Item 2 of Bank Indonesia Regulation No. 19/12/PBI/2017⁴. Law No. 8 of 1999 "On Consumer Protection"⁵, OJK Regulation No. 77/POJK.01/2016⁶, and Circular

¹ Law of the Republic of Indonesia No. 8 "On Consumer Protection". (1999, April). Retrieved from <https://peraturan.bpk.go.id/Details/45288/uu-no-8-tahun-1999>.

² Circular Letter of the Financial Services Authority No. 2/SEOJK.07/2014 "On Service and Settlement of Consumer Complaints". (2014, February). Retrieved from <https://ojk.go.id/id/kanal/edukasi-dan-perindungan-konsumen/regulasi/surat-edaran-ojk/Pages/SEOJK-tentang-Pelayanan-dan-Penyelesaian-Pengaduan-Konsumen-pada-PUJK.aspx>.

³ Regulation of the Financial Services Authority No. 1/Pojk.07/2013 "On Consumer Protection in The Financial Services Sector". (2013, July). Retrieved from <https://www.ojk.go.id/id/regulasi/Documents/Pages/POJK-tentang-Perlindungan-Konsumen-Sektor-Jasa-Kuangan/POJK%201%20-%202013.pdf>.

⁴ Regulation of the Bank of Indonesia No. 19/12/PBI/2017 "On Implementation of Financial Technology". (2017, November). Retrieved from https://www.bi.go.id/id/publikasi/peraturan/Documents/PBI_191217.pdf.

⁵ Law of the Republic of Indonesia No. 8 "On Consumer Protection". (1999, April). Retrieved from <https://peraturan.bpk.go.id/Details/45288/uu-no-8-tahun-1999>.

⁶ Financial Services Authority Regulation No. 77/POJK.01/2016 "Information Technology-Based Money Lending and Borrowing Services". (2016, December). Retrieved from <https://www.ojk.go.id/id/regulasi/otoritas-jasa-keuangan/peraturan-ojk/Documents/Pages/POJK-Nomor-77-POJK.01-2016/SAL%20-%20POJK%20Fintech.pdf>.

Letter of the Financial Services Authority No. 2/SEOJK.07/2014¹ offer legal protection to consumers of fintech services in case of financial losses caused by fintech service providers. Fintech actors must not only be supervised but also follow rules and regulations of information technology, such as Law No. 19 of 2016, which amends Law No. 11 of 2008 “On Electronic Information and Transactions”².

The term “global” in this context refers to something that has spread worldwide, particularly the fintech industry, which is seeing rapid growth and expansion in various locations. Hence, this discourse pertains to Indonesia and other Global South nations like India and Thailand. One of the reasons for selecting India and Thailand for this study is the resemblance between Indonesia, India, and Thailand in terms of having a government predominantly influenced by significant religious-centric components. Furthermore, the robust presence of heterogeneity, characterised by a diverse range of cultures and religious views, in the countries above has led to the selection of Indonesia, India, and Thailand to examine fintech development in Global South nations. The topic of fintech rules in Indonesia has been addressed in the previous paragraph. This study will examine the progress and oversight of fintech in India and Thailand.

The fintech sector in India has had substantial advance during the digital revolution, leading to considerable developments in financial infrastructure and fostering entrepreneurship. Fintech advancements, including mobile payments, peer-to-peer lending, and digital banking services, have considerably contributed to improving financial inclusion and broadening the availability of financial services throughout the nation. The fintech sector in India has shown substantial expansion and acceptance, driven by the country’s digital transformation and growing availability of technology. The fintech industry in India is expected to have a valuation of \$150-160 bn by 2025, demonstrating its significant potential and influence on the financial sector (Aggarwal *et al.*, 2023). The regulation of fintech in India is a multifaceted and dynamic environment. The Reserve Bank of India (RBI) is the central bank and regulator, with the important responsibility of establishing norms and frameworks for fintech enterprises. RBI includes areas such as digital lending, prepaid payment instruments, and the issue of credit and debit cards. The Reserve Bank of India (RBI) serves as the

primary governing body for fintech in India, functioning as the central bank and regulator for banking and non-banking financial activity. The International Financial Services Centers Authority (IFSCA) is vital in overseeing fintech activity in the International Financial Services Centre (IFSC) situated in Gandhinagar, Gujarat.

India has become a leading global innovator in the FinTech industry thanks to its cutting-edge technology solutions and widely acclaimed digital payment systems. The expansion of the FinTech sector in India has revolutionised the country’s financial landscape, positioning cities such as Bangalore and New Delhi as prominent global FinTech centres (Migozzi *et al.*, 2023).

Thailand has experienced substantial growth in various forms of FinTech, including adopting digital wallet technology. The emergence of digital wallets, such as World coin, has played a major role in reshaping financial transactions and driving the country’s digital economy (Kraiwanit *et al.*, 2023). The Bank of Thailand has revoked prior legislative constraints on Thai financial institutions, granting them unrestricted permission to operate in the fintech sector, except for investments in digital assets. In Thailand, the regulatory strategy focuses on utilising technology, encouraging sustainability, and ensuring the capacity to address new hazards in the fintech industry.

On 6 October 2022, the Bank of Thailand (BOT) revoked prior regulatory constraints that restricted Thai financial institutions from investing in the fintech sector, per the regulations. The BOT acknowledges the potential of fintech to provide value and innovation to customers. It intends to utilise technology and open data, promote fair competition, and address national sustainability problems in the advancement of financial technology. ICT and mobile banking have played a crucial role in fostering financial inclusion in Thailand, especially among vulnerable groups like the elderly. Thailand has achieved notable advancements in financial inclusion, placing sixth in the highest 25% among nations in the Asia-Pacific region (Bui & Luong, 2023). Nevertheless, despite the prevalence of financial accessibility, certain individuals, particularly the elderly, continue to experience financial exclusion. Table 1 of laws and regulations pertaining to fintech regulation in Global South countries, specifically Indonesia, India, and Thailand, will encompass the necessary elements to streamline the legal aspects of fintech.

¹ Circular Letter of the Financial Services Authority No. 2/SEOJK.07/2014 “On Service and Settlement of Consumer Complaints”. (2014, February). Retrieved from <https://ojk.go.id/id/kanal/edukasi-dan-perlindungan-konsumen/regulasi/surat-edaran-ojk/Pages/SEOJK-tentang-Pelayanan-dan-Penyelesaian-Pengaduan-Konsumen-pada-PUJK.aspx>.

² Law of the Republic of Indonesia No. 19 “On Amendments to Law No. 11 of 2008 concerning Electronic Information and Transactions”. (2016, November). Retrieved from <https://peraturan.bpk.go.id/Details/37582/uu-no-19-tahun-2016>.

Table 1. Fintech tables in legal regulations in Indonesia, India, and Thailand

Country	Regulation	Description
Indonesia	<ul style="list-style-type: none"> ▪ Law of the Republic of Indonesia No. 8 of 1999; ▪ Law of the Republic of Indonesia No. 19 of 2016 concerning Amendments to Law No. 11 of 2008 concerning Electronic Information and Transactions; ▪ Bank Indonesia Regulation No. 19/12/PBI/2017 concerning implementing Financial Technology; ▪ Copy of Financial Services Authority Regulation No. 1/POJK.07/2013 concerning Consumer Protection in the Financial Services Sector; ▪ Financial Services Authority Regulation No. 77/POJK.01/2016 concerning Information Technology-Based Money Lending and Borrowing Services. 	The laws and regulations in Indonesia about fintech govern the roles of consumers and business actors in technology-driven financial transactions. The regulations also pertain to the protection of consumer data and the settlement of problems linked to fraud in the fintech industry.
India	<ul style="list-style-type: none"> ▪ Reserve Bank of India (RBI) Regulations¹; ▪ Payment and Settlement Systems Act, 2007²; ▪ Information Technology Act, 2000³; ▪ Securities and Exchange Board of India (SEBI) Regulations⁴; ▪ Insurance Regulatory and Development Authority of India (IRDAI) Regulations⁵; ▪ Consumer Protection Act, 2019⁶; ▪ Anti-Money Laundering (AML) and Know Your Customer (KYC) Regulations⁷. 	Fintech companies operating in India are obligated to comply with norms and regulations set forth by different governing bodies. The regulations encompass requirements for obtaining a license, standards for sufficient capital, measures to ensure data security, measures to protect clients, and the prohibition of money laundering and fraudulent actions.
Thailand	<ul style="list-style-type: none"> ▪ Fintech-related regulations issued by the Bank of Thailand (BOT)⁸; ▪ Electronic Transactions Act⁹; ▪ Personal Data Protection Act (PDPA)¹⁰; ▪ Anti-Money Laundering Act (AMLA)¹¹; ▪ Securities and Exchange Act¹². 	The Bank of Thailand (BOT) is the main regulatory body responsible for supervising financial services in Thailand. They have implemented legislation encompassing several areas of fintech, such as investment by financial institutions, virtual bank licensing, open banking, data interchange, and technology utilization. The Digital Asset Business Act (DABA) governs the operations of digital assets and enterprises in Thailand, establishing criteria such as licensing, anti-money laundering protocols, consumer safeguards, and reporting responsibilities.

Source: systematised by the authors of this study

Social changes in the maintenance of fintech.

Social change refers to the alterations that take place inside a society, which are inevitable and ongoing. Social changes can considerably influence society's fabric, moulding its customs, principles, and establishments. Currently, this is widely regarded as the

standard. The rapid dissemination of social change across many world regions is intricately linked to the pivotal role of technical advancements in modern communication. Technological discoveries have sparked a revolutionary movement, transforming several sectors, including education, culture, and

¹ Reserve Bank of India Act. (1934, March). Retrieved from <https://rbi.org.in/CommonPerson/upload/english/content/pdfs/70981.pdf>.
² The Payment and Settlement Systems Act. (2007, December). Retrieved from https://iddashboard.legislative.gov.in/sites/default/files/A2007-51_0.pdf.
³ The Information Technology Act. (2000, October). Retrieved from https://www.indiacode.nic.in/bitstream/123456789/13116/1/it_act_2000_updated.pdf.
⁴ Securities and Exchange Board of India (Index Providers) Regulations. (2024, March). Retrieved from <https://www.sebi.gov.in/sebiweb/home/HomeAction.do?doListing=yes&sid=1&ssid=3&smid=0>.
⁵ Insurance Regulatory and Development Authority of India (IRDAI) Regulations. (2020, June). Retrieved from <https://irdai.gov.in/documents/37343/602265/Insurance+Regulatory+and+Development+Authority+%28Registration+of+Indian+Insurance+Companies%29+Regulations%2C+2000+%28Updated+upto+8th+Amendment%29.pdf/783aeac9-ff12-2bae-fdc-74c83d31b7c0?version=1.4&t=1665253127440&download=true>.
⁶ Consumer Protection Act. (2019, September). Retrieved from <https://www.indiacode.nic.in/bitstream/123456789/15256/1/a2019-35.pdf>.
⁷ Anti-Money Laundering and Know Your Customer Regulations. (2021, June). Retrieved from https://www.cnhindustrialcapital.com/en_in/Documents/KYC-AML%20Policy_v.5.0.pdf.
⁸ Regulation of the Bank of Thailand No. B.E. 2544 "Electronic Financial Services". (2001, September). Retrieved from <https://www.bot.or.th/content/dam/bot/documents/en/our-roles/payment-systems/payment-systems-notification---circulars/%E0%B8%BABOT-EFS/regulation/EFs%20Regulations%20BE%202544%20-%20EN.pdf>.
⁹ Electronic Transactions Act. (2001, December). Retrieved from <https://www.etda.or.th/getattachment/8faa736b-3235-49c8-8b01-d37ff53a9a45/ENG-Version.aspx>.
¹⁰ Personal Data Protection Act. (2019, May). Retrieved from <https://thainetizen.org/wp-content/uploads/2019/11/thailand-personal-data-protection-act-2019-en.pdf>.
¹¹ Anti-Money Laundering Act. (2019, April) Retrieved from [https://www.amlo.go.th/amlo-intranet/en/files/AMLA%20No%201-4\(1\).pdf](https://www.amlo.go.th/amlo-intranet/en/files/AMLA%20No%201-4(1).pdf).
¹² Securities and Exchange Act. (2019, March). Retrieved from <https://www.sec.or.th/EN/Documents/ActandRoyalEnactment/Act/act-sea1992-amended.pdf>.

commerce. This phenomenon will persist in several locations and swiftly become widely known among individuals residing in different regions of the nation (Soekanto, 2016).

Arnold M. Rose proposed three overarching theories regarding social changes in his study. Arnold elucidated three factors contributing to social change: the gradual accumulation of technological advancements, interactions, or conflicts between different cultures, and the emergence of social movements (Soekanto, 2016). Connectivity has a crucial role in driving societal change by facilitating technical advance. Societal changes can exert beneficial and detrimental effects on communities, influencing several domains like politics, culture, and social conventions (Sternisko *et al.*, 2020). The COVID-19 pandemic has resulted in substantial global social changes, such as enforcing lockdown measures, introducing social distance rules, and heightened dependence on remote communication. Artificial intelligence (AI) can induce substantial social change by affecting everyday life, employment, and governance (Mas-Tur *et al.*, 2021).

The argument above shows that the technology sector plays a significant role in driving social development. Economic issues in social life can be considered of secondary importance. The community's incentive to create technological discoveries stems from its desire to gain an economic edge by producing new technology. C. Brand *et al.* (2020) investigate the shift to a low-carbon transportation system and the disruptive policies that come with it. They emphasise the significance of carefully considering social change and economic issues to ensure stakeholders' fair and sustainable transition.

Regarding those mentioned above, when considering the economic advantages of technical innovations, it is crucial to acknowledge the legal obligations individuals must adhere to in every action they take within their social context. Societal changes frequently result in economic benefits as societies adjust and develop, generating fresh prospects for expansion and affluence (Ball, 1971). Implementing sustainable practices in advancing renewable technologies like fintech can lead to societal transformations, such as enhanced environmental welfare, as well as economic benefits, such as employment opportunities and reduced expenses (Brashier & Schacter, 2020). Nevertheless, it is crucial to consider the human mentality's conduct when engaging in technological advancements, as it must adhere to the

relevant legal regulations. In the sociology of law, the "Holmesian dictum" or legal interpretation, refers to the significance of conduct as a component of legal standards (Dymond, 2024). The application of law is contingent upon its integration into the legal awareness of society rather than being perceived solely as a set of rules. Implementing legal principles guarantees the maintenance of societal structure, fairness, and the safeguarding of individual liberties within a certain community (Werner, 2024). The legal practice is evidenced by the community's adherence to the laws. According to the given description, it is crucial to focus on the legal conduct of the community when implementing this fintech (Trzaskowski, 2024). Legal practice applies to the organisers, the managers of fintech firms, and those taking part in fintech activities as consumers.

In terms of the impact of fintech on social development, fintech plays a major role in driving technological and economic transformations. Fintech deviates from conventional expectations by aiming to enhance the financial system in lending, payment processing, crowdsourcing, and more. The swift incorporation of fintech technologies into financial systems has accelerated social transformation by fostering financial inclusivity, empowering underrepresented people, and revolutionising conventional banking practices. Fintech is a component of societal transformations that have the potential to transform traditional payment systems into contemporary and futuristic forms of payment systems in the future. The emergence of fintech has resulted in beneficial societal transformations. However, it also presents some obstacles and factors that need to be considered, including data privacy, cybersecurity, and fair and equal technological access (Simandan, 2020). In the context of a technologically and economically evolving society, it is essential to establish rules that govern legal behaviour. These rules should be designed to assess their effectiveness in technological and economic domains. Consequently, legal behaviour plays a crucial role in maintaining social order and demonstrating the existence of a legal framework.

The legal framework for overseeing the implementation of fintech in Indonesia is based on various regulations, including Financial Services Authority Regulation No. 77/POJK.01/2016¹, Financial Services Authority Circular Letter No. 2/SEOJK.07/2014², and Law No. 19 of 2016 "On Amendments to Law No. 11 of 2008 concerning Electronic Information

¹ Financial Services Authority Regulation No. 77/POJK.01/2016 "Information Technology-Based Money Lending and Borrowing Services". (2016, December). Retrieved from <https://www.ojk.go.id/id/regulasi/otoritas-jasa-keuangan/peraturan-ojk/Documents/Pages/POJK-Nomor-77-POJK.01-2016/SAL%20-%20POJK%20Fintech.pdf>.

² Circular Letter of the Financial Services Authority No. 2/SEOJK.07/2014 "On Service and Settlement of Consumer Complaints". (2014, February). Retrieved from <https://ojk.go.id/id/kanal/edukasi-dan-perlindungan-konsumen/regulasi/surat-edaran-ojk/Pages/SEOJK-tentang-Pelayanan-dan-Penyelesaian-Pengaduan-Konsumen-pada-PUJK.aspx>.

and Transactions”¹. These regulations are the foundation for monitoring and regulating fintech activities, shaping public perception of legal conduct in the fintech sector. Furthermore, these legal provisions serve as the foundation for implementing fintech in Indonesia, ensuring that social changes in financial system technology are regulated and preventing any actions that may result in legal violations and hinder the achievement of legal objectives in the fintech implementation within the social community.

■ Conclusions

The legal aims of implementing fintech can be understood concerning the establishment of legal certainty in the fintech sector, which has been acknowledged and defined in the rules of Indonesia, including Bank Indonesia rules and regulations from the Financial Services Authority. Fintech aims to offer advantages to the general public by enabling electronic financial transactions, as specified in Article 3 Item 2 of Bank Indonesia Regulation No. 19/12/PBI/2017. Law No. 8 of 1999 on Consumer Protection, OJK Regulation No. 77/POJK.01/2016, and Circular Letter of the Financial Services Authority No. 2/SEO-JK.07/2014 ensure legal protection for consumers of fintech services in case of financial losses caused by fintech service providers.

The significance of fintech in social transformation lies in its ability to bring about transformative effects in people’s lives inside the realm of the financial system. The most prominent transformation resulting

from fintech is transitioning from conventional payment systems to non-cash payment systems. Consumers and management of fintech enterprises must clearly understand and adhere to the rule of law when implementing fintech. It is crucial as legal conduct plays a significant role as a law component. If the ethical conduct of fintech organisers is poor and indifferent, then adopting this fintech will have detrimental consequences. Furthermore, integrating fintech into the conventional societal framework necessitates the involvement of government authorities, who must ensure legal clarity and promote the advantages of employing fintech within the financial system.

The purpose of this study was to contribute to developing an optimised fintech implementation by advocating for fair legal policies based on principles of fairness. This study enables stakeholders to develop and implement precise and comprehensive regulations for adopting fintech. The findings of this study are expected to serve as a reference for the Indonesian government in its efforts to worldwide promote fintech and effectively address the digital divide between regions, hence yielding beneficial outcomes in the future.

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■ Conflict of Interest

The authors of this study declare no conflict of interest.

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¹ Law of the Republic of Indonesia No. 19 “On Amendments to Law No. 11 of 2008 Concerning Electronic Information and Transactions”. (2016, November). Retrieved from <https://peraturan.bpk.go.id/Details/37582/uu-no-19-tahun-2016>.

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Фінансові технології як загроза традиційній фінансовій системі

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■ **Анотація.** Це дослідження зосереджене на впливі технологій на традиційні способи оплати й наслідках його для суспільства. З огляду на поширення цифрових валют, також відомих як криптовалюти, які використовують у транзакціях за допомогою фінансових технологій (фінтех), це дослідження може слугувати основою для розроблення законів і нормативних актів, що регулюють фінтех. Мета цього дослідження – запропонувати чітке й конкретне розуміння легітимності й суспільних переваг фінтеху в Індонезії. У цій статті використано методологію регуляторних досліджень, що охоплює соціально-правові методи, аналіз законодавства та вивчення правових концепцій. Результати цього дослідження надали можливість визначити три фундаментальні критерії використання фінтеху: гарантії, вигоди та справедливості. Положення про фінтех викладено в Положенні банку Індонезії № 19/12/PBI/2017, Положенні Управління фінансових послуг № 77/POJK.01/2016 та Законі 1999 року, які також стосуються питань, пов'язаних із захистом прав споживачів. Із соціокультурної позиції фінтех уособлює технологічну революцію, яка сприяє суспільному розвитку. Фінтех має на меті запропонувати переваги для суспільства через спрощення електронних фінансових транзакцій. Аргументовано, що фінтех відіграє вирішальну роль у реформуванні суспільства, революціонізуючи взаємодію людей із фінансами. Ключовим аспектом цієї трансформації є перехід від традиційних методів оплати до цифрових альтернатив. Як для споживачів, так і для фінтех-компаній надзвичайно важливо дотримуватися законодавчих вимог під час упровадження фінтех-рішень, оскільки дотримання нормативно-правових актів має вирішальне значення. Недотримання етичних стандартів у фінтех-індустрії може стати на заваді її широкому впровадженню та призвести до негативних наслідків. Розуміння потенційних загроз, які фінтех становить для традиційної фінансової системи, дасть змогу фінансовим установам і регуляторам розробити ефективні стратегії управління ризиками

■ **Ключові слова:** фінансові технології; справедливість; захист прав споживачів; соціальні зміни; правова мета