

# ADVANCING FINANCIAL INCLUSION THROUGH FINTECH TO DRIVE THE DEVELOPMENT OF A DIGITAL SOCIETY

Yesi Hendriani Supartoyo<sup>1</sup>

<sup>1</sup> National Research and Innovation Agency (BRIN)

[yesi001@brin.go.id](mailto:yesi001@brin.go.id)

## Abstract

It is vital for Indonesia to accelerate the adoption of FinTech to democratize access to financial services. While Indonesia has huge market potential for FinTech, current and potential players have to be aware of the fundamental problems that have been hindering the growth of the sector. There are a number of roadblocks that FinTech players should take into consideration; they revolve around the lack of financial literacy and inclusion. FinTech innovations are enabling access to financial services through mobile devices for many unbanked in the world. Though FinTech innovations are touted as game changers in deepening financial inclusion, their wide acceptance and use still remain limited. Provided a strong financial literacy among the population, Indonesia will be able to achieve full financial inclusion, which can be accelerated with the adoption of FinTech. Financial inclusion is a key factor of social inclusion, particularly effective in combating poverty and income inequality by unlocking blocked advancement opportunities. FinTech is seen as a key enabler of financial inclusion; and mobile financial services, as the type of FinTech with the greatest potential to bring the unbanked into the formal financial system. The FinTech sector needs to prioritize financial literacy for all populations of Indonesia to encourage growth in numerous sectors. Supartoyo (2017) on her paper said the financial sector can affect regional economic growth and play an important role to the economic growth of a region. Further implementation of FinTech into society needs to be as accessible as possible.

**Keywords:** financial inclusion, financial technology, financial literacy, digital society.

---

## 1. Introduction

Indonesia's digital financial services scene has been experiencing a boom in recent years. COVID-19 has become the unexpected catalyst that accelerates digital transformation and technologies. From the EV-DCI 2022 findings, the growth is exemplified in the improvement in entrepreneurship and productivity pillar, which increased by 182%, from 8.4 to 23.5 in 2020-2022. World FinTech Report 2021 make a statement about exploring the next FinTech maturity milestone. FinTech's defied vulnerability, demonstrated resilience during COVID-19.

The digital revolution adds new layers to the material cultures of financial(used) inclusion, offering the state new ways of expanding the inclusion of the 'legible', and global finance new forms of 'profiling' poor households into generators of financial assets (Gabor, 2016). Meanwhile, FinTech is likely to decrease the costs of financial intermediation, but also to create new regulatory issues (Philippon, 2019)

In Indonesia, the tremendous development of the FinTech industries is driven by the exponential increase in internet adoption. Internet penetration increased from 56% to 74% to reach 202.6 million users, while mobile internet penetration increased from 53% to 71% to reach 195.3 million in 2019-2021.

According to FinTech in the ASEAN 2021 report by United Overseas Bank (UOB), PwC Singapore, and Singapore FinTech Association (SFA) (East Ventures, 2022), the total FinTech funding of the six largest

ASEAN economies grew by over three times to reach USD 3.5 billion in 2020-2021, after experiencing a decline of 31.3% in the previous year. Indonesia was ranked second as it received 26% of the total investment, behind only Singapore with 44%. Almost every FinTech category in Indonesia and Singapore received funding, an indicator of a dynamic and flourishing industry with a vibrant investment landscape.

Starting with e-money and P2P lending, the FinTech industry now serves broader segments to encompass the growing consumer needs from investments, insurance, and others. Payment firms make up 29% of all FinTech firms in Indonesia, making it the most common type of FinTech firm followed by lending at 25%.

FinTech innovations are enabling access to financial services through mobile devices for many unbanked in the world. Though FinTech innovations are touted as game changers in deepening financial inclusion, their wide acceptance and use still remain limited. In the extant literature, technological and behavioral antecedents that influence users' behavior toward financial technologies are not fully understood. This study argues that understanding antecedents to the actual use of FinTech innovations will lead to deepening financial inclusion (Senyo, 2020)

This answer for why financial inclusion matters for development? Kunt (2017) on The Global Findex 2017 through topic "Measuring Financial Inclusion and the FinTech Revolution" give result that a growing body of research reveals many potential development benefits from financial inclusion — especially from the use of digital financial services, including mobile money services, payment cards, and other financial technology (or FinTech) applications. While the evidence is somewhat mixed, even studies that do not find positive results often point to possibilities for achieving better outcomes through careful attention to local needs.

A country's economic growth achievement and financial inclusion are a solution to improving poverty by providing affordable financial services by all circles and providing good quality financial services, effective and efficient (Widarwati, 2022). The research results prove that digital finance positively impacts financial inclusion through digital financial services, facilitating access to financial services. The bank functions as an intermediary financial offer digital financial assistance for the public. Such as mobile banking, internet banking, and other products. The growth of digital banking transactions will trigger an increase in the financial inclusion index, which can boost banking financial stability. Supartoyo (2017) on her paper said the financial sector can affect regional economic growth and play an important role to the economic growth of a region.

## **2. Method**

Method of this paper is desk study and/or literature review, based on some report(s) and article(s).

## **3. Results and Discussion**

### **Payment**

Amid slowing economic activity, COVID-19 has led to a surge in e-commerce and expedited digital transformation. As social restriction became the new normal, businesses and consumers are progressively adopting digitalization, providing and purchasing more goods and services online and raising the size of the e-commerce market. A survey conducted by PwC Indonesia in 2021 indicated that the average e-wallet payment spending per month has increased by 9.5% to approximately IDR 810,000 due to the pandemic.

The prominence of digital payment can also be observed by the high appetite for using e-wallet as a payment method. According to a survey conducted by Kata data Insight Center (KIC) and Kredivo in 2021 (East Ventures, 2022), 65% of respondents chose to use digital wallet (e-wallet) to shop online, making it the go-to payment method in e-commerce. This has led to a growth in FinTech payment, including players such as OVO, which reported an increase of 276% in new users since the start of the pandemic. Moreover, OVO experienced an increase of over 70% in the number of merchants in 2020.

Consequently, the FinTech payment sector has grown tremendously and generated a massive transaction value in the past year. Data from BI shows that as of December 2021, the number of e-money transactions has reached IDR 35.1 trillion, an increase of 59% from IDR 22 trillion rupiah in December 2020 (East Ventures, 2022)

Indonesia's government has also been proactive and responsive in supporting the integration of the national digital economy and finance, reflected in the issuance of the 2025 Indonesia Payment System Blueprint. For instance, the government remains committed to improving the digital payment system, shown by launching the Quick Response Code Indonesian Standard (QRIS) in August 2019. QRIS facilitates payments across different payment methods/applications such as Go Pay, OVO, Dana, Link Aja and several mobile banking applications, by providing a single QR code basis for merchants. The implementation of QRIS has been a successful one. As of November 2021, the number of merchants integrated with the system has reached 12.11 million and the number of transactions has increased by 264% (YoY) to reach 40 million. Additionally, the accumulated transaction value has increased by 248% (YoY) to hit IDR 2.9 trillion.

### **Peer-to-peer (P2P) Lending**

People from all walks of life have been impacted by the COVID-19 crisis. In addition to the threat to public health and social disruption, the pandemic has also driven many into financial crisis due to job loss and salary cuts. According to BPS, the average annual income of the Indonesian population declined from IDR 59.1 million to IDR 56.9 in 2020. Additionally, BPS also indicated that there was an increase of 11.2% in the number of people in poverty in the same period (East Ventures, 2022).

Amid the financial turmoil, many resorted to P2P lending platforms to meet their financing needs. EV-DCI 2022 shows an increase of 0.5point to reach 1.9 in FinTech lending median score compared to last year. Furthermore, according to a survey conducted by PwC Indonesia in 2021, people borrow more often during the pandemic as the average frequency of lending increases from 3.3 to 4 times annually.

The growth in P2P lending is also captured by the data published by Indonesia Financial Services Authority (OJK). The number of borrower accounts increased by 287% to reach 71.8 million accounts in 2019-2021. Similar trends can also be observed in the accumulated loan disbursement to borrowers, which grew by 248% in the same period. Moreover, the proportion of productive loan to total loan disbursement grew from 42.5% to 63.2% in January-November 2021. The increase in the proportion of productive loans can be associated with the growing need for financing to develop people's business activities in the current conditions (East Ventures, 2022).

The growth in P2P lending has also accelerated the growth of FinTech players. Take KoinWorks, a leading P2P lending startup in Indonesia, as an example. KoinWorks recorded an increase of over 50% (YoY) in the number of users reaching 1.2 million individuals as of November 2021, and is targeting to reach 5 million users by the end of 2022. Additionally, the startup has successfully secured USD 108 million in its series C round in January 2022 (East Ventures, 2022). The capital injection will further accelerate the growth of the company and is a sign of confidence from investors that signals the promising future of the industry.

Apart from contributing to the economy, digital economy activities should also result in an output in the form of using the Internet for productive and entrepreneurial activities. There are eight indicators used to calculate productivity, which are the ratio of people who use the internet for work, both in their main jobs and in communicating for work. Meanwhile, to calculate entrepreneurship, the ratio of the population using the internet for promotion and trade or transactions is used. In addition, need to calculated the amount of money loaned through financial technology (FinTech) as part of Pillar entrepreneurship and productivity. Supartoyo (2015) has a result that financial inclusion and development of SMEs is a central point for the economic empowerment and SMEs.

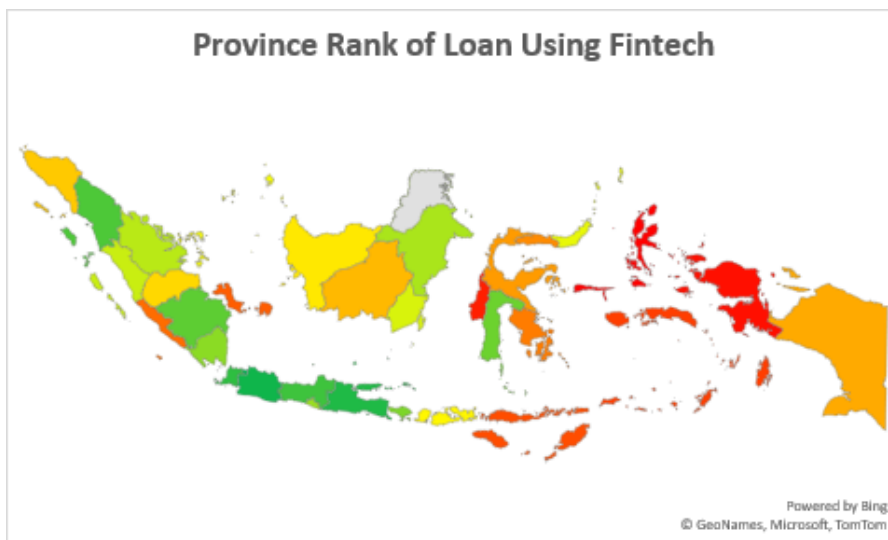


Figure 1. Province Rank of Loan Using FinTech

Source: East Ventures, 2022 (self-processed)

### **Financial Technology to Drive the Development of a Digital Society**

It is vital for Indonesia to accelerate the adoption of FinTech to democratize access to financial services. While Indonesia has huge market potential for FinTech, current and potential players have to be aware of the fundamental problems that have been hindering the growth of the sector. There are a number of roadblocks that FinTech players should take into consideration; they revolve around the lack of financial literacy and inclusion.

Digital Financial Awareness is strongly connected with income level, profession, religion, age, number of family member, property ownership, marriage status, gender, ration card, and educational attainment. Putri (2022) provides case studies on determining Digital Financial Literacy in Samarinda, Indonesia. Her research reveals that when the Digital Financial Literacy Index rises, so does FinTech's purchasing power. Digital financial literacy has a big impact on how interested people are in buying FinTech products and services. Transaction payments, wealth and asset management, crowdfunding, peer to peer lending, capital markets, and insurance services are all part of the FinTech model. Their findings reveal a link between Digital Financial Literacy and Digital Financial Inclusion, as higher levels of Digital Financial Literacy have an impact on Digital Financial Inclusion. Digital financial literacy, demand for financial goods, and impact on financial stability are three characteristics of digital financial inclusion.

### **Improving Financial Literacy to Accelerate the Growth of FinTech**

Financial literacy, particularly the clarity and relevance of financial education regarding financial products, services, and activities, is one of the main drivers of FinTech adoption. This is supported by a report published by Asian Development Bank in 2020, which indicates that higher financial literacy is positively associated with a higher likelihood of using FinTech service (East Ventures, 2022). However, in Indonesia, the key hindrance to drive more growth in the FinTech adoption process is financial literacy, especially for the underbanked population.

Indonesia's low financial literacy, especially among vulnerable populations, has been a major roadblock in accelerating the growth of the FinTech industry. According to a survey conducted by OJK in 2019, Indonesia

financial literacy was 38.03%, which is much lower than countries like Singapore, which has approximately 80% (East Ventures, 2022).

A lack of financial literacy is responsible for poor money management skills, which lead to consequences such as bankruptcies, higher debt, and lower savings. In Indonesia, poor financial literacy has also been affecting the credibility and growth of FinTech, especially regarding P2P lending with the emergence of illegal online loans. Illegal operators often promise easy borrowing schemes to customers, who often lack financial literacy. When customers are unable to pay and become trapped in the over-indebtedness, the illegal lenders often use violent and abusive tactics to demand payments.

The Asosiasi FinTech Pendanaan Bersama Indonesia (AFPI) explained that illegal lending platforms are those not registered with OJK (East Ventures, 2022). Illegal online lending operations have grown exponentially amid the growing popularity of FinTech during the pandemic. According to the Investment Alert Task Force (SWI), the number of illegal online lending companies that had been shut down reached 3,631 companies and over 8,000 complaints were recorded as of November 2021.

There is an urgent need to increase financial literacy in Indonesia to help educate and empower people to evaluate various financial products and services available before making decisions that might impact their welfare. Here are a few key approaches to introduce effective and innovative provision of financial education. Firstly, the stakeholders need to facilitate access to information and advice through multi-channel delivery. For instance, the government should continue optimizing the utilization of websites or social media that seek to become the reference at the national level through interactive web-based tools, and awareness and communication campaigns. The OJK has been utilizing digital media by creating and posting informative videos and infographics on platforms such as YouTube and Instagram. Moreover, The OJK has published the 'Finance Literacy Book Series', which provides financial education at different life stages.

Secondly, the government should harness existing learning environments and networks. One way is to introduce financial education in schools as an elective or mandatory cross-curricular subject. For example, financial education has been a compulsory part of the Danish national curriculum for students in 7<sup>th</sup>-9<sup>th</sup> grade (aged 13-15) since 2015. The program has been successful as Denmark has one of the highest financial literacy rates in the world. Indonesia has actually introduced financial literacy education as part of the curriculum starting in high school in 2016 and all levels of education in 2021. However, since the introduction is still new, the government needs to ensure that the curriculum remains relevant to cope with the rapid changes in the financial sector.

Lastly, stakeholders should provide financial education to the public, which can come in the form of handbooks and programs to further accelerate the development of financial literacy. For instance, Dana has a Report Card feature to learn about finance that includes materials such as budget management, savings, and investments. Moreover, GoPay, Tokopedia, Gojek and PT Bursa Efek Indonesia (BEI) collaborated to create 'Finansiap Program', which aims to increase financial literacy through platforms such as webinars, podcasts, articles and websites.

### **Integration of Digital ID into FinTech to Facilitate Financial Inclusion**

Provided a strong financial literacy among the population, Indonesia will be able to achieve full financial inclusion, which can be accelerated with the adoption of FinTech. Financial inclusion is a key factor of social inclusion, particularly effective in combating poverty and income inequality by unlocking blocked advancement opportunities. It involves providing access to an adequate range of safe, convenient, and affordable financial services to disadvantaged and other vulnerable groups.

Cheumar (2022) on his paper give a conclusion that various obstacles to digital financial inclusion can be overcome by integrating digital financial inclusion with the FinTech industry. This is explained by the long-term relationship between FinTech and digital financial inclusion in the 34 provinces studied. This analysis proves an opportunity for the FinTech industry to build a digital financial inclusion ecosystem through collaboration between FinTech and Digital Financial Services in all provinces in Indonesia. Financial Technology is the most effective solution to accelerate digital financial inclusion. The FinTech industry helps innovate more competitive banking products. There is a need for an Islamic financial technology company to take part and play in payment services.

The requisites for financial inclusivity are easy and quick access, affordability, and simplification. A digitalized approach can meet all these requirements. Further implementation of FinTech into society needs to be as accessible as possible. Indonesia is now at a point where using FinTech for financial services is easier and more accessible than the brick-and-mortar conventional financial services. Moreover, nearly 80% of participants of the survey agreed to the motion suggested in this research which was the hypothesis that the utilization of FinTech does increase financial inclusion (Venessa, 2022)

The FinTech sector is not only able to streamline the provision of financial products and services, but also to generate new players that are swiftly connecting with more unbanked and underbanked customers. If it is done properly, FinTech has the potential to eliminate the existing financial inclusion gap more rapidly than conventional finance. FinTech improves financial inclusion by providing individuals, especially those who are underserved, with greater access to financial products and services such as payment, savings, credit, and investment.

While Indonesia's priority remains to provide traditional identification documents, the effort should be accompanied by a shift towards creating a universal ID system. The implementation of digital IDs will become a key driver of growth for the FinTech sector. FinTech will benefit from the huge convenience that digital IDs present by being an instant 'know-your-customer' (KYC) verification tool, accelerating financial inclusion. Moreover, this will also assist in creating the digital economy as it increases transparency, reduces fraud, and protects individual's rights, among other things. According to Reuters, developing countries could see an economic growth of up to 13% by 2030 with the implementation of digital IDs.

Successful utilization of a digital ID system to spur FinTech growth will lead to the acceleration of digital adoption in the financial sector. One of the most prominent results will be the creation of a cashless society through the development of digital payment. Take China as an example. China is well on its way to become the world's first cashless society with the prevalence of mobile payment. The payment system has come to dominate person-to-person, retail and many other business transactions with two big tech firms, AliPay and WeChat Pay, as the most used digital wallets. Essentially, Indonesia is moving towards China's cashless payment system, and the introduction of digital IDs will bring Indonesia a step closer to a fully cashless society.

Damayanty (2022) analyzes the influence of regulation, IT governance and partnerships on the financial inclusion, i.e. First, regulation Effect on Financial Inclusion Based on the data processing results, regulation has influenced financial inclusion positively. This result illustrates that effective regulation, which is able to regulate operational activities, can support financial inclusion, especially regulations that provide protection to consumers. That is, regulations that are able to provide a sense of security and consumer confidence in the FinTech industry that can provide services to the unbanked community thereby increasing the financial inclusion. Second, IT Governance Effect on Financial Inclusion It has been empirically proven that information technology governance does not have a positive effect on financial inclusion that supports business activities carried out by FinTech. The result is the same with the phenomena that occur, but are not in line with the hypotheses put forward, as well as theories and previous studies as supporters and references. This indicates that information technology governance that is implemented properly able to increase the financial inclusion of FinTech companies. Third, The Effect of Partnerships on Financial Inclusion it has been empirically proven that partnerships have an effect on financial inclusion, which supports business activities carried out by FinTech. The

result is in line with the phenomenon that a well-established partnership will increase the financial inclusion of FinTech companies.

Theory suggests that financial market imperfections, such as information asymmetries and transaction costs, prevent poor people from escaping poverty, by limiting their access to formal financial services. But, with recent developments, FinTech is seen as a key enabler of financial inclusion; and mobile financial services, as the type of FinTech with the greatest potential to bring the unbanked into the formal financial system (Demir, 2022)

#### 4. Conclusion

The FinTech sector needs to prioritize financial literacy for all populations of Indonesia to encourage growth in numerous sectors. Digital ID implementation can also encourage financial inclusion for society and allow e-KYC (electronic-Know Your Customer) to be performed instantly. Focusing on enhancing the adoption of digital technology across sectors, the effects of digital transformation in businesses across sectors in Indonesia have been significant. The six digital economy sectors namely e-commerce, logistics, healthiest, EdTech, tourism, and FinTech have successfully leveraged digital technology to improve the performance of businesses by improving efficiency and agility. The digital economy has also enabled the growth of the creative economy, making it more resilient during the pandemic. The creative economy serves digital consumers who are rapidly shifting towards products and services such as subscription-based entertainment, gaming, and digital media. Salampasis (2018) said the landscape of financial inclusion has for long been considered as the soft side of financial services, having received scarce attention from a financial, regulatory, and policy point of view, despite its central role within the global economic empowerment. The emergence of FinTech, the new breed between financial innovation and financial technology, which has been challenging the prevailing position of incumbent financial institutions, is providing a promising vehicle of tackling this phenomenon by closing the gap between unbanked, under-banked and developed societies, opening the door to the global digital economy, bringing a long-term societal transformational change for the financially excluded/underserved, while leading to inclusive economic growth helping move towards a more just and equitable society.

#### 5. References

- Cheumar, M & Yunita, P. 2022. FinTech Industry and Digital Financial Inclusion for Economic Development of an Inclusive Society in Indonesia. *International Economic and Finance Review (IEFR)*. Vol. 1, No. 1
- Damayanty, P., Murwaningsari, E. & Mayangsari, S. 2022. Analysis of Financial Technology Regulation, Information Technology Governance and Partnerships in Influencing Financial Inclusion. *Budapest International Research and Critics Institute-Journal*. Vol. 5, No 2
- Demir, A., Cela, VP., Altunbas, Y & Murinde, V. 2022. FinTech, Financial Inclusion and Income Inequality: A Quantile Regression Approach. *The European Journal of Finance*. 28: 1
- East Ventures. 2022. *Digital Competitiveness Index 2022: Towards Indonesia's Digital Golden Era*.
- Gabor, D., & Brooks, S. (2016). *The digital revolution in financial inclusion: international development in the FinTech era*. *New Political Economy*, 22(4), 423–436. doi:10.1080/13563467.2017.125929
- Kunt, AD., Klapper, L., Singer, D., Ansar, S & Hess, J. 2017. *The Global Findex Database 2017: Measuring Financial Inclusion and the FinTech Revolution*. Washington DC: World Bank Group
- Philippon, T. 2019. On FinTech and Financial Inclusion. *NBER Working Paper Series*. Cambridge: National Bureau of Economics Research
- Putri, AM. Damayanti, SM. & Rahadi, RA. 2022. Digital Financial Literacy in Indonesia: A Literature Review. *Central Asia and The Caucasus*. Vol. 23 Issue 1
- Salampasis, D., Mention, AL. 2018. FinTech: Harnessing Innovation for Financial Inclusion. *Handbook of Blockchain, Digital Finance, and Inclusion*. Vol 2
- Senyo, PK., Osabutey, ELC. 2020. Unearthing Antecedents to Financial Inclusion through FinTech Innovations. *Elsevier*. Vol 98

- Supartoyo, YH., Juanda, B. Firdaus, M & Effendi, J. 2015. Study of Regional Development Based Micro, Small and Medium Enterprises. *Scientific Journal of PPI-UKM*. Malaysia. 2017. Financial Sector and Financial Inclusion of Regional Development. *Conference Proceeding 11<sup>TH</sup> International Conference and Call for Paper Bulletin of Monetary Economics and Banking*. Bank Indonesia
- Venessa, C., Zakhariah, C. & Vincent. 2022. The Utilization of FinTech to Increase Financial Inclusion in Indonesia: A Conceptual Paper. *SEIKO: Journal of Management & Business*.
- Widarwati, E., Solihin, A & Nurmalasari, N. 2022. Digital Finance for Improving Financial Inclusion Indonesians' Banking. *Signifikan: Jurnal Ilmu Ekonomi*. Vol. 11 (1)
- World FinTech Report 2021. Capgemini Research Institute