

Annual Members Survey 2021

ANNUAL MEMBERS SURVEY 2021

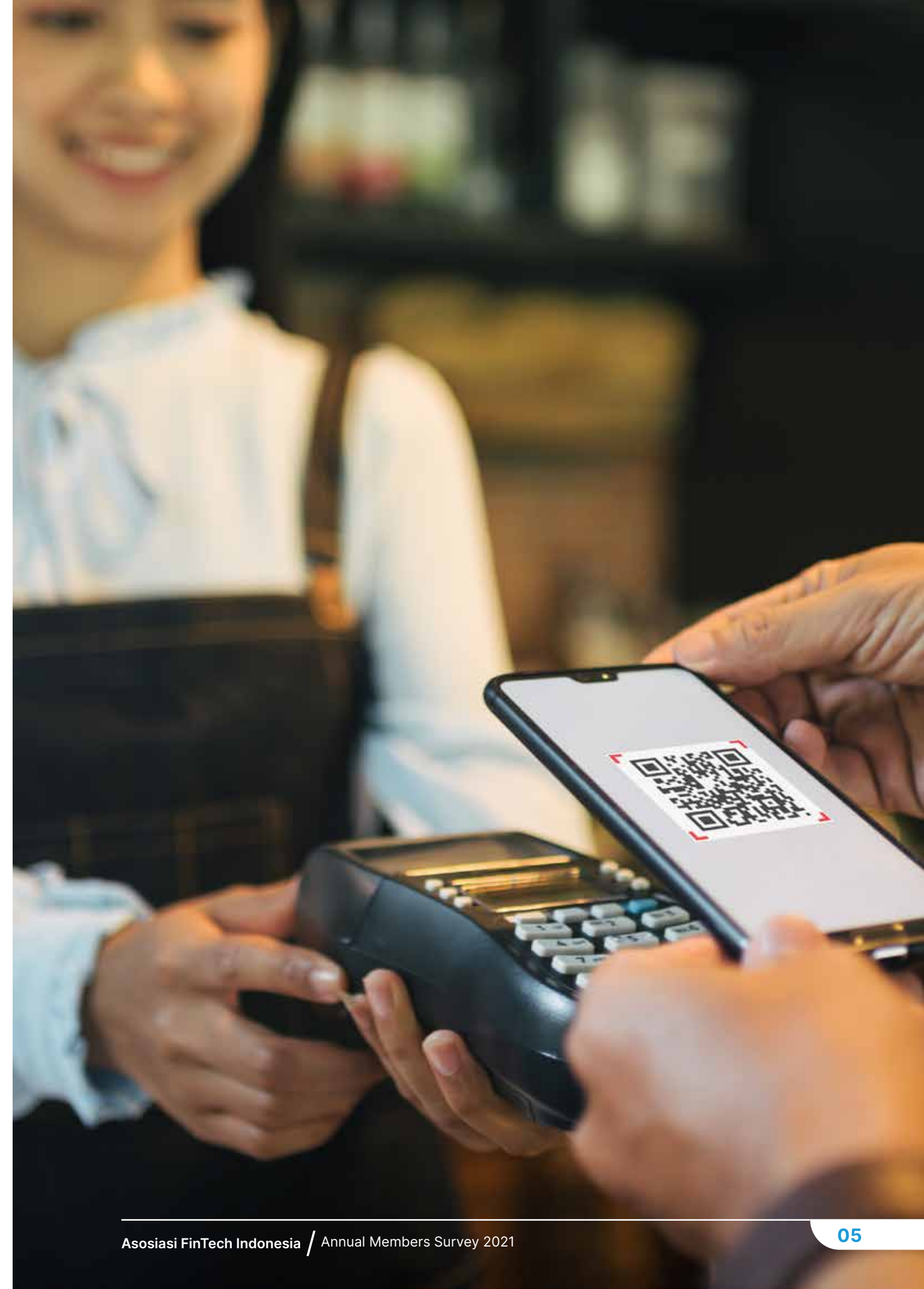


Table of Contents

1. AFTECH'S CHAIRMAN NOTE	06
2. EXECUTIVE SUMMARY	09
3. METHODOLOGY	12
A. The Definition of Fintech	12
B. Survey design	15
• Primary Data Collection	15
• Research Analysis	15
• Data Sanitization and Verification	17
4. FINTECH INDUSTRY OVERVIEW	19
A. Business Overview	21
• Growth in Number of AFTECH Members	21
• AFTECH Members by Business Model	21
B. Growth Drivers	22
• Fintech Investment	22
• Working Age Population	22
• Internet Economy Growth	24
• Financial Literacy and Inclusion	25
• Opportunity from Large Number of Unbanked and Underbanked	26
• Rapid Adoption of Fintech	26
C. Maturity Level	29
5. INDONESIA FINTECH LANDSCAPE	32
A. Years of Operations	32

B. Primary Fintech Users	33
C. MSME as Fintech Users	34
D. Market Penetration Fintech	36
E. Expansion of Business Model	38
F. Number of Employees	39
G. Fintech Transaction	41
H. Partnership with Fintech Players or other Fintech Ecosystem Players	42
I. Overview of Challenges Faced in Indonesia Fintech Industry	43
6. INVESTMENT IN FINTECH	46
A. Total Investment	46
B. Deal Stage	47
C. Source of Fund	49
D. Financing Cases by Fintech Verticals	51
E. Impact of Investment in Fintech on Indonesia's Economy	54
7. REGULATORY OUTLOOK	58
A. Perception of Current Regulatory Framework	58
B. Challenges in Regulatory Compliance	59
8. GOOD CORPORATE GOVERNANCE	66
A. Data Management	67
B. Disaster Recovery Plan	67
C. Cybersecurity	68
• System Failures	69
• Cyberattacks	70
D. Customer Complaint Handling	71
E. Consumer Protection	73
F. Implementation of International Standards and Regulations	74
G. Implementation of Code-of-Conduct or Industry Standard	75

9. INFRASTRUCTURE AND TECHNOLOGY	78
A. Current Technology and Its Procurement in Indonesia	79
B. The Gap Between Rural Areas and Urban Areas	81
10. SKILLS GAP AND GENDER EQUALITY	84
A. Skills Gap	84
B. Gender Equality	88
C. Diversity	90
11. IMPLEMENTATION OF FINANCIAL INCLUSION STRATEGY	94
A. Targeting Unbanked and Underbanked Segment	94
• Corporate Initiatives Towards Financial Inclusion	94
• Government Support on Financial Inclusion with Fintech	96
B. Action Needed to Address Challenges in Financial Inclusion	96
12. FINTECH DURING THE COVID-19 PANDEMIC	100
A. COVID-19 Pandemic Effect on Fintech Industry	100
B. Customer Behavior Changes	102
C. Potential Changes Post-Pandemic	103
GLOSSARY	106



1. AFTECH'S CHAIRMAN NOTE



Pandu Sjahrir

Indonesian Fintech Association
(AFTECH) Chairman

The Indonesia Fintech Association (AFTECH) is launching another Annual Member Survey for the 2021 period. This survey is deemed necessary, especially during the COVID-19 pandemic, when Fintech development appears as one of the solutions to improve financial services access for all people and ultimately support national economic activities. Since 2017, AFTECH has been regularly issuing its Annual Member Survey ("AMS") Report to exhibit Indonesia's Fintech industry development and its potential as a source of economic growth, identify the priority topics, as well as discuss various challenges faced when trying to optimize Fintech for financial inclusion and welfare for all layers of the population. This report is developed based on an annual survey towards AFTECH members and becomes the reference for Fintech players, regulators, investors and academicians.

AFTECH, in collaboration with Ernst & Young Indonesia and with support from *Lembaga Penyelidikan Ekonomi Masyarakat ("LPEM") Universitas Indonesia*, have developed its Annual Member Survey Report 2021 with the theme "Building Indonesia's Future Economy: Strengthening Fintech Industry Competitiveness as Source of National Economic Growth". AFTECH 2021 Member Survey among others showcases Indonesia's Fintech industry development during the pandemic and its contributions to accelerate national economic recovery and discuss priority topics, including:

- (a) Improvement of national Fintech industry's competitiveness by strengthening good governance;
- (b) Access to equal distribution of infrastructures;
- (c) Efforts to create a conducive regulation climate;
- (d) Trends of human resources development in Fintech industry;
- (e) Women participation and gender equality in Fintech industry; and
- (f) Fintech and financial inclusion.

In 2021, more than 25% of new Fintech start-ups in South East Asia originated from Indonesia¹. This development, combined with the Indonesia's Fintech potentials, has been attracting interest from investors. Accumulatively as of 2021, the number of investments in the Indonesian Fintech industry has reached USD 904 Million or 23% of total investment accumulation from Southeast Asia's Fintech industry². Besides showing the significance of the Fintech in attracting investment, this statistic also demonstrates Fintech's potential as a significant source of growth for the Indonesia's future economy³.

Fintech adoption within society in 2021 continues to exhibit progress. It has been shown among others by: (a) transaction value of e-money which has increased 58.5% (y-o-y) to more than IDR 35 Trillion by end of 2021; (b) adoption of Quick Response Code Indonesia Standard (QRIS) which has reached beyond the target of 12 million merchants before the end of 2021 deadline; (c) Loan distribution through Fintech crowdfunding to reach more than 13.47 million borrowing accounts with an approximate value of IDR 13.6 Trillion as of December 2021; and (d) Increments of Fintech usage for investment in the capital market and digital asset trading. Fintech business models such as innovative credit scoring, aggregator, financial planner, insurtech and securities crowdfunding are also starting to show increments in adoption.

Potential benefits that have been offered by Fintech are not free from the risks that followed. Various risks, including those related to personal data protection and cyber security, have become regulators and Fintech players' attention while in their efforts to enhance customers protection and improve trust from society towards the industry.

AMS indicates that good governance implementation by all Fintech players is one of the key variables in mitigating risk and improving

security in using Fintech services apart from improving financial education and literacy in the society. Good governance implementation includes implementation of international standards, as well as code-of-conduct and industry standards for Fintech players in Indonesia.

Industry good governance Implementation and digital financial literacy improvement is essential in driving Indonesia's Fintech industry competitiveness, increasing the society's trust and customer protection, as well as driving Fintech optimization for financial inclusion. AMS indicates that 55% of its respondents have been implementing international standards and 77% have been implementing code-of-conduct in their operations. Furthermore, almost all respondents (96%) stated that they have registered their own data centers to the Ministry of Communication and Information Technology (KOMINFO) and also stated that they have Disaster Recovery Plans (98%). We hope that good governance commitment from the Fintech industry will keep improving in the future. AFTECH is committed to consistently creating safe and convenient Fintech for all Indonesian society.

In conclusion, we would like to send our highest appreciation for the support and cooperation from all parties in developing this report. We hope this report can become the reference for regulation development and activities to support the development of Fintech in the future. We hope our commitment, collaborations and hard work will bring stronger growth and build a more competitive Fintech industry in the future.

Warm Regards,

Pandu Sjahrir
Indonesian Fintech Association (AFTECH)
Chairman

¹ Singapore Fintech Association. 2021. Fintech in ASEAN 2021: Digital Takes Flight. <https://www.uobgroup.com/techecosystem/pdf/Fintech-in-asean-2021.pdf>

² Badan Koordinasi Penanaman Modal. 2021. Investasi Langsung Luar Negeri. Web. <https://www.bkpm.go.id/statistik/investasi-langsung-luar-negeri-fdiinvesting.com>. 2021. USD/IDR Historical Data. Web. <https://www.investing.com/currencies/usd-idr-historical-data> (average IDR/ USD from Q1-Q3 2021 = 14,301)

³ CB Insights. 2021. The Complete List of Unicorn Companies. <https://www.cbinsights.com/research-unicorn-companies>



2. EXECUTIVE SUMMARY

The Indonesia Fintech Association (AFTECH) has since 2017 regularly issued its Annual Member Survey (“AMS”) Report to exhibit the recent development, opportunities, and challenges of Indonesia’s Fintech industry. For this year’s edition, the AFTECH AMS Report 2020/2021 has been developed collaboratively by AFTECH and EY Indonesia with the support of research from a leading academic institute, *Lembaga Penyelidikan Ekonomi Masyarakat Fakultas Ekonomi dan Bisnis Universitas Indonesia* (“LPEM FEB UI”).

In light of this year’s theme “**Fintech for Faster Economic Recovery: Collaboration in Balancing Governance and Innovation**”, this report has highlighted Fintech’s contributions to the economy, industry efforts to build good governance, infrastructure, and regulatory landscape, as well as talent gap, implementation of financial inclusion strategy, and the Fintech industry during the COVID-19 pandemic.

Indonesia is a highly promising market for the Fintech industry and is poised to be one of the world’s largest Fintech ecosystems. This is due to the fact that Indonesia is the fourth most populous country and the sixteenth largest economy in the world; in addition to its rising proportion of the working-age population, internet penetration, as well as government support to expand inclusive growth of financial inclusion and literacy. Fintech adoption in Indonesia has also transformed the country’s financial services industry, fostering innovation and collaboration accelerated by the COVID-19 pandemic. As part of the digital financial services ecosystem, Fintech continues to provide access to the unbanked and underbanked population, as well as support to the country’s economic recovery efforts during the on-going COVID-19 pandemic, particularly by facilitating the low-touch economy concept.

With an increasing trend in terms of the number of Fintech players and Fintech business models, Indonesia in 2021 has generated 23% of all Fintech companies in Southeast Asia⁴. This trend, combined with Indonesia’s Fintech industry potentials, has also attracted massive investment into the sector. Specifically, investment in Indonesia’s Fintech sector has garnered 58% and 157% more accumulative investment compared to the total of foreign and domestic investment in Indonesia’s machinery and electronics sector; and textile sector respectively⁵. As of now, three out of eight unicorns in Indonesia are contributed by the Fintech industry⁶.

The report indicates that 59% of Fintech users are individuals from the low to middle-income segment (<IDR 5 mn – IDR 15 mn) who are domiciled in Java island, specifically

⁴ Singapore Fintech Association. 2021. Fintech in ASEAN 2021: Digital Takes Flight. <https://www.uobgroup.com/techecosystem/pdf/Fintech-in-asean-2021.pdf>

⁵ Badan Koordinasi Penanaman Modal. 2021. Investasi Langsung Luar Negeri. Web. <https://www.bkpm.go.id/statistik/investasi-langsung-luar-negeri-fdi>
Investing.com. 2021. USD/IDR Historical Data. Web. <https://www.investing.com/currencies/usd-idr-historical-data> (average IDR/ USD from Q1-Q3 2021 = 14,301)

⁶ CB Insights. 2021. The Complete List of Unicorn Companies. <https://www.cbinsights.com/research-unicorn-companies>

Jabodetabek area. In order to improve access to financial services throughout Indonesia, Fintech companies also continue to improve services to rural areas. A total of 69% of Fintech stated that they have served rural areas. The majority of Fintech companies (45%) are also optimistic that they can expand to areas outside DKI Jakarta and Jabodetabek in the future. This becomes important in order to achieve the target of national financial inclusion. The survey results also noted some of the main obstacles in expansion into rural areas: financial literacy (55%), infrastructure (44%), and cultural constraints (20%).

Until Q3 2021, USD 904⁷ million investments were recorded into the Fintech sector in Indonesia. This number is twice and even three times higher than some neighboring countries. The trend of investment in the Fintech industry in Indonesia is in line with global trends⁸.

The growth of Indonesia's Fintech industry cannot be separated from the role of the Government. The majority of survey respondents agreed that the Indonesian Government has supported the industry to grow in terms of innovation (53%) and investment (48%), although there are still some regulations that are challenging for Fintech companies. However, the existence of such regulatory challenges did not dampen respondents' views on the future of the Fintech industry in Indonesia. A total of 52% of survey respondents expressed a positive response regarding the future potential of the Fintech industry.

The development and potential of the Fintech industry are also inseparable from risks. Various risks have come to the attention of regulators as well as Fintech players in their efforts to create consumer protection and increase public confidence in the industry. The risks of

personal data protection and cybersecurity risks are some of them. The report indicated that good governance implementation by all Fintech players is essential in mitigating risks and improving security in using Fintech services. The survey shows that judging from government regulation, most respondents already have adequate internal minimal capacity to support data management needs. Regarding the implementation of industry standards, the majority of respondents stated that they had implemented international standards (61%) and codes of conduct (77%).

In addition to good governance, technology infrastructure is another important key factor for the Fintech industry. Regarding technology infrastructure, the survey results showed that although noting the challenges of technology infrastructure in the region that also affected the expansion of Fintech services to the region, 53% of respondents had a positive perception of the growth and improvement of even infrastructure and technology in the future.

AFTECH Annual Member Survey Report also addresses the skills gap and gender equality. Related to expertise and talent in the Fintech sector, the survey results indicates that talent scarcity remains one of the industry's challenges and to overcome it, respondents have conducted in-house training (65%), recruiting from several options such as financial institutions (46%), similar companies (45%), or leading universities (26%). While related to gender equality in the Fintech industry, the survey results showed an increase in the participation of Indonesian women in Fintech companies as well as in using Fintech (or as consumers).

Fintech has the main spirit to increase access to financial services for all Indonesians, thereby targeting unbanked and underbanked. In this

regard, Fintech companies have implemented corporate initiatives to help customers and communities with financial inclusion (89%), carry out activities to improve financial literacy (85%) and digital literacy (79%). Furthermore, to answer the challenges of financial inclusion, the survey results also showed that some respondents had established cooperation with financial institutions as well as strategic partnerships with the government.

The prolonged COVID-19 pandemic has brought challenges and opportunities for the Fintech industry in Indonesia. Fintech companies have adjusted their business strategies during the pandemic. In line with the general findings in the market, the survey results showed that Fintech companies became more aggressive in 2021 compared to the previous year. The survey also noted improvements in perception from respondents related to the recovery of business activities.



⁷ Singapore Fintech Association. 2021. Fintech in ASEAN 2021: Digital Takes Flight. <https://www.uobgroup.com/techecosystem/pdf/Fintech-in-asean-2021.pdf>

⁸ Menurut UBS pendapatan perusahaan Tekfin akan tumbuh dari USD 150 Miliar pada 2018 menjadi USD 500 Miliar pada 2030, dipimpin oleh perusahaan Tekfin di kawasan Asia Pasifik

3. METHODOLOGY

A. The Definition of Fintech

The Indonesia Fintech Association (“AFTECH”) adopts the World Bank’s definition of financial technology (Fintech), which is an industry comprised of companies that utilize technology to enable financial systems and the delivery of financial services more efficient. Meanwhile, Bank Indonesia Regulation (“PBI”) No. 19/12/PBI/2017 concerning Provision of Financial Technology, defines Fintech as the use of technology in a financial system that generates products, services, technology and/or new business models which potentially might have an impact on monetary stability, financial system stability and/or efficiency, fluency, security, and reliability of payment systems. In context, the Financial Services Authority Regulation (“POJK”) No. 13/POJK.02/2018 classified Fintech under the category of “Digital Financial Innovation/DFI” (Inovasi Keuangan Digital/“IKD”) to define Fintech. These two regulations (POJK) have adopted the same points and described Fintech to be all kinds of innovative instruments that have value-added in financial services.

AFTECH was established in 2016 as the facade for Fintech players to advocate and collaborate with other stakeholders in order to push technology innovation and strengthen Indonesia’s Fintech industry competitiveness. AFTECH has been formally appointed by Indonesia Financial Services Authority (“OJK”) as a Self-Regulatory Organization of Digital Financial Innovation (DFI) on 9th August 2019, based on (“POJK”) No. 13/POJK.02/2018 about Digital Financial Innovation in Financial Services Sector. DFI currently has 16 different sub-clusters, which are:



1. **Agregator**
Website or application which helps customers to obtain information related to financial products and services by using digital features such as information gathering, filtering, and comparing products and services between Financial Services Institutions.
2. **Financial Planner**
Platform which assists individuals in forming financial plans based on each individual risk profile and goals by providing advice related to the choice of investment products that are offered by registered and/or licensed Financial Services Institutions overseen by the Financial Services Authority.
3. **Innovative Credit Scoring**
Institution or agency that processes data other than credit data or its derivatives using certain algorithms through information technology to generate scores or letters, which indicates an assessment of a person's eligibility to receive services in the Financial Services Sectors.
4. **Online Distress Solution**
A platform that provides negotiation services for debtors who have difficulty in paying off their debts with creditors.
5. **RegTech**
A platform that provides services with the ability to detect high-risk customers (from Anti Money Laundering perspective) to background checking (Politically Exposed Persons) of each customer.
6. **Insurance Broker Marketplace**
A closed shared platform intended for the community of Insurance licensed business, including insurance brokers, insurance companies, re-insurance brokers and re-insurance companies.
7. **Financing Agent**
Web or application-based services that assist Financial Services Institution to channel financing funds to potential and existing debtors of the Institution.
8. **Insurance Hub**
Infrastructure organizer within the insurance industry, which assisted the distribution and submission of insurance claim.
9. **Funding Agent**
Web or application-based services that assist Financial Service Institutions as a marketing platform to acquire potential funding customers.
10. **Transaction Authentication**
A platform that provides customer identification and verification services using data which were not originated from the Directorate General of Population and Civil Registration.
11. **Tax and Accounting**
A platform that helps individual customers or companies in providing online appropriate financial statement preparation services in accordance with accounting or tax reporting standards.
12. **InsurTech**
Platforms that collaborate together with brokers and/or insurance companies to provide information services, insurance product purchases and expedited insurance claims submission services for customers/communities.
13. **Property Investment Management**
Online community fundraising platform in the form of property right management scheme without creating derivatives to be traded on the secondary market.

14.E-KYC

A platform that provides customer identification and verification services using data originated from the Directorate General of Population and Civil Registration.

15. WealthTech

Platforms that integrate various financial and supporting product services, provided by a conglomeration group and its business partner in the mobile application to facilitate and assist users in accessing and managing their finances, including banking, financing, insurance, investment, and funding.

16. Project Financing

Online fundraising platform from investors to fund a particular project as an investment in return of profit generated from the project and/or yields at the specified period.

Besides business model based on POJK No.13/2018, there are other Fintech business model, such as:

1. Online Lending

Online lending refers to POJK No.77/2016 on Lending and Borrowing Money Services with Information Based Technology, which defines it as financial services activities to gather creditors and debtors for purpose of the lending-borrowing agreement in Rupiah currency directly through an electronic system that uses internet network.

2. Payment System

According to PBI No.19/12/PBI No.2017, Fintech Payment System is defined as the usage of technology in the financial system which produces products, services, technologies, and/or new business model and additionally impacts toward monetary stability, financial system stability, and/or efficiency, smoothness, security and reliability of the payment system.

3. Neobank

In general, Neobank operates online and uses applications, software and other technologies through mobile and provides



online banking services. Referring to POJK No. 12/POJK.03/2021, there is a definition of the digital bank as follows "Bank with Indonesian regulation body which provides and runs business activities mainly through the electronic network without physical office besides headquarter office or with limited physical office usage.

4. Securities Crowdfunding

According to POJK No 57/POJK.04/2020, Fintech which provides Securities Crowdfunding services is an Indonesian regulatory body that provides, manages and operates crowdfunding services in which implementation of securities offering services conducted by the issuer to sell securities directly to an investor is completed through the open electronic network.

5. Wealth Management

Wealth Management is an investment advisory service that combines other financial services.

Regulations related to various Fintech business models above are currently issued by the Financial Services Authority, Central Bank of Indonesia and Ministry of Communication and Information Technology.

B. Survey Design

AFTECH conducted its Annual Member Survey ("AMS") in Q4 2021 to understand the landscape of the industry and the opinion of its members regarding the current development of the Fintech ecosystem, the progress of the policy and regulatory framework, as well as driving factors of the industry.

The AMS 2021 are categorized into nine (9) main sections, and are developed from the previous questionnaire in AMS 2019/2020:

1. Fintech Industry Overview
2. Indonesia Fintech Landscape
3. Investment in Fintech
4. Regulatory Outlook
5. Implementation of Good Governance
6. Infrastructure and Technology
7. Skills Gap and Gender Equality
8. Implementation of Financial Inclusion Strategy
9. Fintech During the COVID-19 Pandemic

The COVID-19 pandemic has significantly affected the lifestyle of Indonesian including acceleration on digital finance adoption and Fintech's growth in Indonesia; questions on how companies have responded to the pandemic are included in the survey to provide updated views of the industry.

• Primary Data Collection

The AMS 2021 questionnaire was circulated online to all AFTECH members in October 2021. AMS questionnaire 2021 did not exclude the COVID-19 survey. Therefore, all respondents are required to participate in answering COVID-19 related questions.

In contrast to last year, the AMS 2021 questionnaire includes chapters themes related to investment and diversity. The comprehensive reviews were conducted to give both aggregate and detailed views on Fintech investment. Unlike investment, diversity is the new theme that would be raised in this report. In this case, diversity is not limited to gender, but also the educational background of Fintech players' talent.

An important reminder that several questions across the survey distributed contained multiple options where a respondent could select more than one option for certain questions. Hence, there might be some questions in which percentages could exceed 100% upon recalculation. In addition, several members decided to opt out from answering some questions, therefore the report would include an analysis of the respondents that answered.

• Research Analysis

AFTECH Annual Member Survey Report AFTECH Annual Member Survey 2021 Report combined the usage of primary and secondary research in developing the survey's analysis. The first section on Fintech Industry Overview is compiled mostly using secondary research. However, other sections of the report are developed by using a balanced combination of data collected from the survey (primary research). Analysis of the survey also highlights insight and extensive experience that AFTECH has gained over the years in representing Indonesia's Fintech industry.



Overall insight in this report is classified into nine (9) major categories:

1. Fintech Industry Overview, covering the business overview of AFTECH members by cluster, the growth drivers of Indonesia's Fintech ecosystem and the current maturity level of each business vertical in Fintech sub-clusters.
2. Indonesia Fintech Landscape, characteristics and business development of Fintech company respondents from several lenses i.e. business plan, users, customer segments, team structure and partnerships.
3. Fintech Investment Trend focuses on the latest development in successful funding raised by Indonesian Fintech companies.
4. Implementation of Good Governance, highlighting the latest relevant topics in the Fintech ecosystem such as data

management, disaster recovery plan, cybersecurity, customer complaints, data protection, and industrial standards.

5. Regulatory Outlook, which captured the perception of the current regulatory framework that shelters Fintech industries and challenges in fulfilling the regulatory compliance.
6. Infrastructure and Technology, capturing the current technology landscape development in Indonesia and the existing gap in serving a rural and urban area.
7. Skills Gap and Gender Equality, encompassing the existing skills gap in the Fintech industries and the current dynamic of gender distribution and equality in the Fintech companies.

8. Implementation of Financial Inclusion Strategy, including corporate initiatives and government support that are done to increase the financial inclusion level and existing challenges in tackling unbanked and underbanked segment.

9. Fintech during the COVID-19 Pandemic, consisting of several subtopics of the pandemic impacts on the Fintech industry, changes in customer behavior and the potential change post-pandemic period.

EY has supported both primary and secondary data gathering and analysis for the development of the report. From the analysis of primary data, insights into the Fintech sector in the four (4) major categories are generated through data verification, sanitization, and tabulation. Additional secondary research and the expert experiences will be added from *Lembaga Penyelidikan Ekonomi Masyarakat Fakultas Ekonomi dan Bisnis Universitas*

Indonesia ("LPEM FEB UI"). Moreover, important information to complement the quality of this report was also gathered from EY's research and professional network in other countries. As a reminder, the aggregate data in this report is shown whenever there is a trend consistency in the industry which are being observed.

• Data Sanitization and Verification

Verification of raw data was conducted collaboratively by AFTECH and EY in compliance with the respective internal data protection policy of each contributor. The process includes filtering the uncomplete answers from the respondents to mitigate the imbalance result due to blank responses recorded, as well as verification to relevant stakeholders to clarify the data which is to be included in the report. The results from this report only represent respondents who answer specific questions in each section.



4. FINTECH INDUSTRY OVERVIEW

According to EY Fintech Adoption Index 2021, ASEAN offers promising growth for the Fintech sector; ASEAN's internet economy is projected to grow at a CAGR of 20% between 2019 and 2025, expanding from ~USD 100 Bn to approximately ~USD 300 Bn, mostly driven by further adoption of digital services and growth in disposable income as the impact of the increase in middle-class demographic segment. The Fintech Adoption Index shows that in recent years, the surge in consumer's demand for financial service-related offerings and payment solutions has corresponded to the growth of the financial service industry, including Fintech.

The Fintech industry in Indonesia is deemed as one of the most competitive and dynamic industries, where the country is home to 23%⁹ of all Fintech companies in Southeast Asia as of Q3 2021. The Fintech industry in Indonesia continues to grow and evolve as shown by the increasing number of licensed players, variety of financial services solutions offered, as well as adoption in the market. As an association that shelters Fintech companies in Indonesia, AFTECH has recorded a constant increase in terms of total members, from 256 by the end of 2019, to 302 by the end of 2020 and 352 by Q4 2021.

The presence of Fintech has significantly transformed the previous proposition that has been offered by traditional financial services, accelerated by the COVID-19 pandemic. Fintech underpins many of consumers'

daily transactions, from payment apps for smartphones to financial systems that support businesses. The technology features of Fintech have also been able to improve the efficiency of interaction with customers, mostly driven by rapid transaction processes and customer eligibility aspects, which in turn has significantly impacted financial inclusion.

In line with the trend of developing a range of Fintech solutions in the market, Fintech adoption in the market has continued to increase simultaneously- making room for further growth in the Fintech sector. Central Bank of Indonesia ("BI") recorded that in December 2021 total number of Digital Payment transactions in Indonesia has reached IDR 35.1 Tn, up almost 60% from the same period last year. Whilst the online lending transaction has been growing and recorded transactions amounting to IDR 3.6 Tn in December 2021.

In the capital market, growth is reflected by Securities crowdfunding that offers alternatives for MSMEs to obtain funds. While aligning with global development, wealth management and Neobank has been offering technological transformation for customers.

In Q3 2021, Indonesia's Fintech sector has attracted USD 904 Mn¹⁰ from investors, which amount is two times higher than Thailand and three times higher than Malaysia- reflecting that Indonesia's Fintech sector has significant growth potential to contribute to the country's economy.

⁹ Singapore Fintech Association. 2021. Fintech in ASEAN 2021: Digital Takes Flight. <https://www.uobgroup.com/techecosystem/pdf/Fintech-in-asean-2021.pdf>

¹⁰ Singapore Fintech Association. 2021. Fintech in ASEAN 2021: Digital Takes Flight. <https://www.uobgroup.com/techecosystem/pdf/Fintech-in-asean-2021.pdf>

The immense growth of Fintech industry in Indonesia is driven by:

- (i) Growing investment in Fintech;
- (ii) Large number of working-age population;
- (iii) Rising financial literacy and inclusion;
- (iv) Rapid growth of internet penetration, as well as mobile phone and social media users;
- (v) Large number of unbanked and underbanked; and
- (vi) Conducive regulatory environment.

The development of the Indonesian financial service is currently followed by numerous homework to serve 51% of Indonesia's population that is still unbanked¹¹. Affordability issues, access to services, and more lengthy procedures have been a challenge for Indonesian consumers to become financially inclusive. Fintech companies, on the other hand, have been swift to take advantage of this opportunity, with many having created enhanced value offerings to overcome the pain points through more affordable products/ services, faster procedures, simplified solutions and innovative offerings to meet customer needs.

In addition to that, the Fintech sector could provide the benefit by increasing the efficiency of capital and labor through digitalization- not only limited to the Fintech industry but also for other industries through increased collaboration with other players such as banks, non-bank financial institutions, technology companies (e-commerce, ride-hailing) and other corporations.

Diverse types of business models across Fintech verticals increased the ease of obtaining goods and services through transaction convenience. Compared to last year, the type of Fintech solutions available in the market have increased. In Annual Members Survey, AFTECH recorded the growth of cluster categories from four (consisted of Digital Payment, Peer-to-Peer ("P2P") Lending, Securities crowdfunding

("SCF"), digital financial innovation ("DFI")) into six (6) clusters with the addition of Neobank and Wealth Management clusters by the time of AMS 2021 completion.

In response to the vast development of Indonesia's Fintech sector, the Indonesian authorities have cooperated with Fintech players to achieve financial inclusion targets through the usage of technology. Compared to the previous year, the Fintech service offering has increased. In Annual Member Survey 2021, AFTECH recorded an expansion in clustering from 4 (Digital Lending, Peer-to-Peer Lending (P2P), Securities Crowdfunding (SCF), Digital Financial Innovation (DFI) to 6 clusters with the addition of Neobank and Wealth Management in AMS 2021.

In responding to the rapid development of the Fintech Industry, regulators in Indonesia have collaborated with Fintech players to achieve financial inclusion targets by leveraging technological solutions. This collaborative effort is also supported by initiatives issued by regulators and government, including Indonesia Payment System Blueprint 2025 by Central Bank of Indonesia, Development of Indonesia Capital Market 2025, Master Plan Indonesian Financial Service Sector 2021-2025, Digital Finance Innovation Roadmap 2020-2024, Indonesia Digital Roadmap, Draft Regulation on Personal Data Protection, Draft Regulation on Cyber Security, and other regulations to support the development of the conducive ecosystem.

Since 2020, Indonesian authorities have involved Fintech players as a component of the National Economic Recovery Program (Program Pemulihan Ekonomi Nasional ("PEN")). Through the program, Fintech companies have supported the disbursement of government funds to MSMEs, distribute the government's financial assistance through the pre-employment card (Kartu Prakerja) program and support other national economic recovery programs. This development highlights the increasing role of Fintech in the Indonesian economy.

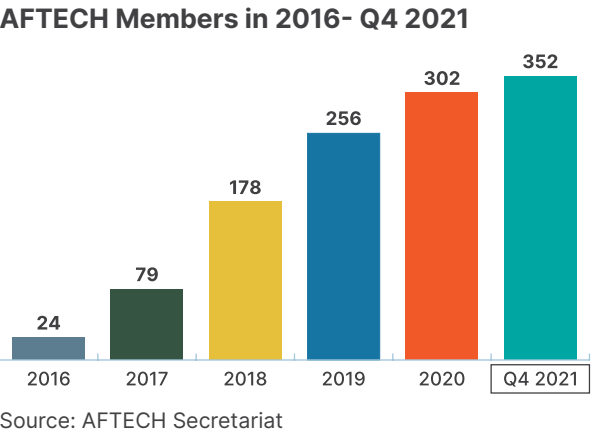
AFTECH as the umbrella organization for all Fintech verticals has supported the growth of the Fintech industry through a partnership with regulators and the entire Fintech industry ecosystem, strengthening the capacity and competitiveness of national Fintech players, as well as real work in supporting digital financial literacy and education. In addition, AFTECH plays an active role in creating the Fintech ecosystem that is responsible and carries principles of customer protection through the implementation of good governance.

A. Business Overview

Growth in Number of AFTECH Members

The fintech landscape in Indonesia is represented in line with the number of AFTECH members. Indonesia is currently the 2nd country in ASEAN in terms of the number of Fintech players, with Singapore as the country with the most Fintech companies in ASEAN. By 2020, AFTECH has recorded 302 members which represented 18% growth compared to 2019. By the end of Q4 2021, the total members of AFTECH have reached 352 members, which constitutes 56 Digital Payment, 104 Digital Lending, 8 Securities Crowdfunding, 77 DFI, 14 Wealth management, 6 Neobank, 7 technology partners, 11 Financial Institutions, and 69 in 'Others' category.

Figure 4.1: AFTECH members in 2016- Q4 2021



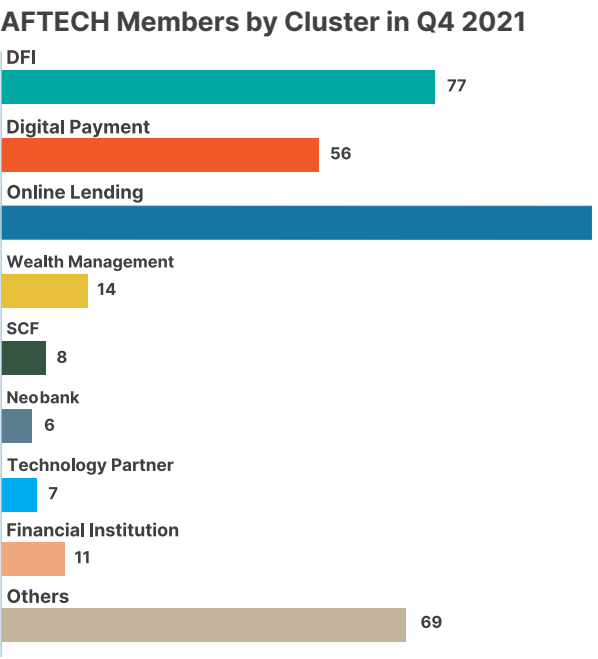
The growth in the number of Fintech players is aligned with the increase in the Fintech industry's contribution to the economy of Indonesia. In terms of investment, Indonesia's Fintech sector received USD 904 Mn in 2021 among the ASEAN's Fintech sectors. The large investment by foreign and local investors in this sector has resulted in three out of eight unicorns that Indonesia has contributed to the Fintech sector currently.

Overall, the Fintech industry has supported economic development significantly through investment, transactions, and employment to or from the Fintech industry, which will be discussed later in this part of the report in detail. Moreover, growth in some Fintech companies has not only been the catalyst of transactions and employment but also of financial and digital inclusivity in Indonesia as Fintech companies provide community development and literacy to their consumers.

AFTECH Members by Business Model

Below is the breakdown of AFTECH members based on their vertical/business model:

Figure 4.2: AFTECH Members by Vertical/ Business Model in 2021¹²



¹¹ S&P Global. 2021. Indonesia eyes greater financial inclusion with gold-based blockchain system. <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/indonesia-eyes-greater-financial-inclusion-with-gold-based-blockchain-system-64423086>

¹² 'Other' category includes enabler (i.e technology companies), E-commerce, and 48 fintech companies in DFI clusters that are in the process of completing AFTECH membership qualifications.

Below is the composition of Fintech company under AFTECH membership based on their vertical/business model:

- Online Lending (29%)
- DFI (21%)
- Others (19%)
- Digital Payment (16%)
- Wealth Management (4%)

B. Growth Drivers

• Fintech Investment

Historically being an underbanked region, the ASEAN countries have witnessed strong Fintech growth in recent years, fueled by their young, digital-savvy population, high mobile penetration and growing middle class in ASEAN. This trend is further accelerated by the COVID-19 pandemic.

This development has attracted investment in the Fintech sector in ASEAN, including Indonesia. The value of the investment in the Indonesian Fintech industry has been growing by 13 times from USD 64 Mn in 2017 to USD 904 Mn in Q3 2021¹³.

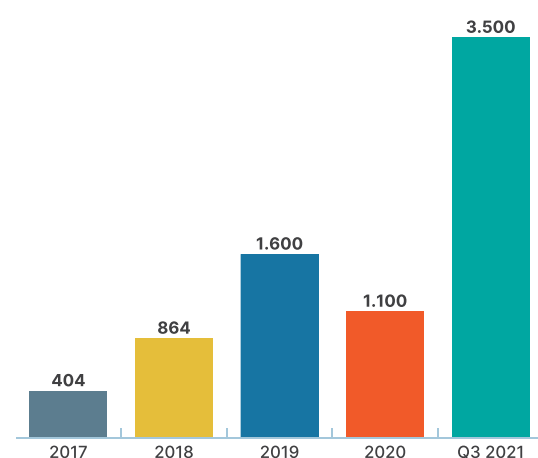
• Working Age Population

Indonesia has the fourth-largest number of populations in the world behind China, India, and the United States respectively, with more than 68% of Indonesia's population being in working-age demography. With most of the population falling under working-age demography, this is considered bonus demography, meaning that a lesser proportion of the non-productive population exists. The rise in the working-age population acts as a positive catalyst for the Fintech industry as it is expected to increase the country's Gross Domestic Product and expand the market size for the Fintech industry.

Historically, Indonesia's working-age population proportion to the total population has constantly increased from 2016 to 2020. According to the Indonesia Central Bureau of Statistics, Indonesia's population is projected to increase steadily at a 1% rate, expected to reach 294 Mn population by 2030¹⁴.

Figure 4.3: Investment in ASEAN Fintech Sector, 2017-Q3 2021(in USD Mn)

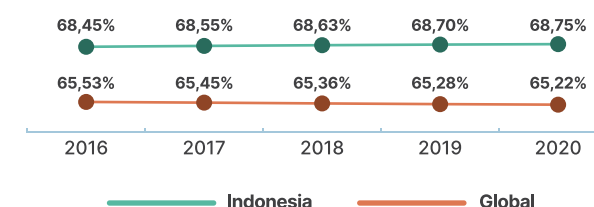
Investment Value in ASEAN Fintech Sector in 2017-Q3 2021 (in USD Mn)



Source: Singapore Fintech Association, United Overseas Bank (2021)

26% of total investment in the ASEAN Fintech sector is in Indonesia¹³. This number is nearly 2 and 3 times higher compared to investment allocated to Fintech in the Philippines and Malaysia, respectively in Q3 2021, with several mega-rounds (above USD 100 Mn funding¹³) raised in 2021.

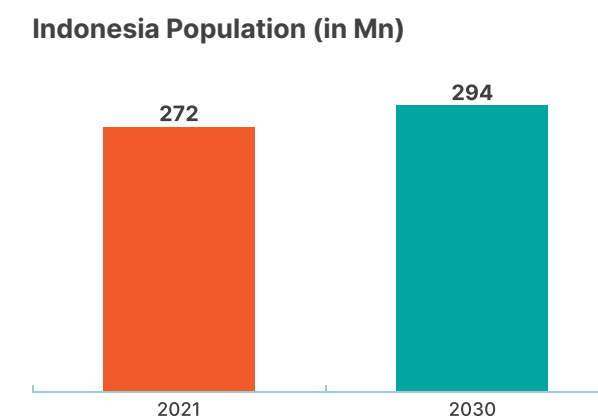
Figure 4.4: Percentage of working age population to total population in Indonesia vs Global in 2016- 2020



Source: OECD¹⁵

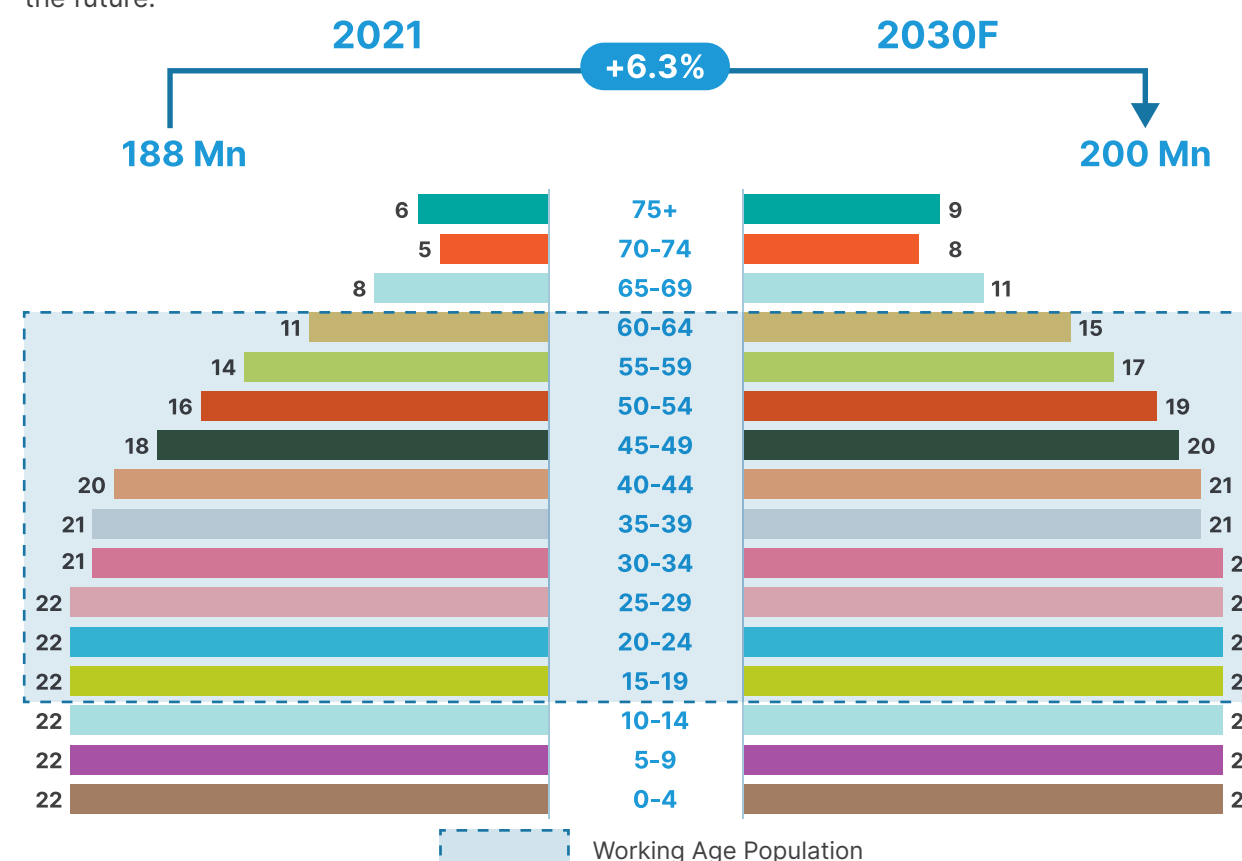
In addition to that, the percentage of the working-age population to total population is expected to reach remain stable in proportion to population, or approximately 200 Mn of the total estimated 294 Mn population in 2030¹⁶. The rising income level, combined with Indonesia's large proportion of the working-age population who are generally more tech-savvy compared to other population ages, is estimated to keep the strong momentum of the Fintech industry in the future.

Figure 4.5: Indonesia population (in Mn) in 2021 vs. 2030



Source: Indonesia Central Bureau of Statistics

Figure 4.6: Overall and working age population by age group (in Mn), in 2021 vs. 2030F



Source: Indonesia Central Bureau of Statistics

¹⁵ OECD. 2021. Working Age Population by Demography. <https://data.oecd.org/pop/working-age-population.htm?context=OECD>

¹⁶ Minister of National Development Planning Agency. 2015. Indonesian Population Projection 2015 - 2045. <https://www.bps.go.id/publication/download.html?nrbvfeve=NzhkMjRkOTAyMDAyNmFkOTVjNm1OTY1L3Byb3Ila3NpLXBldmR1ZHVrLWluZG9uZXRnYS0yMDE1LTlwdUtaGFZaWw3VwYXNpMjAxNS0dG1s&twoadfnarfeauf=MjAyMS0xMjAwNiAxMzoyMjoyOQ%3D%3D>

¹³ Singapore Fintech Association. 2021. Fintech in ASEAN 2021: Digital Takes Flight. <https://www.uobgroup.com/techecosystem/pdf/Fintech-in-asean-2021.pdf>

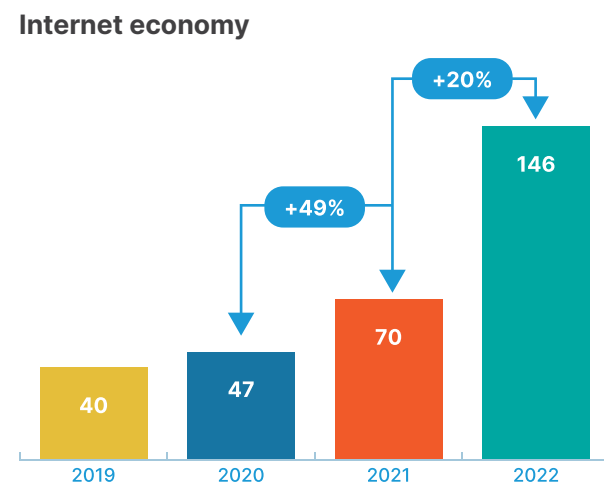
¹⁴ Kementerian Perencanaan Pembangunan Nasional Republik Indonesia. 2015. Proyeksi Penduduk Indonesia 2015 - 2045. <https://www.bps.go.id/publication/download.html?nrbvfeve=NzhkMjRkOTAyMDAyNmFkOTVjNm1OTY1L3Byb3Ila3NpLXBldmR1ZHVrLWluZG9uZXRnYS0yMDE1LTlwdUtaGFZaWw3VwYXNpMjAxNS0dG1s&twoadfnarfeauf=MjAyMS0xMjAwNiAxMzoyMjoyOQ%3D%3D>

In addition to that, Indonesia's middle-income population has been major driver of economic growth, growing to 85 Mn in 2020 (31% of population) and estimated to grow in proportion of the population in the future¹⁷, which support the economic growth, especially through consumption and investment.

With the fact that the majority of the Indonesian population is in the productive group, supported by the increasing middle-income group, it is estimated that there will be potential massive growth for the Fintech industry in the nation.

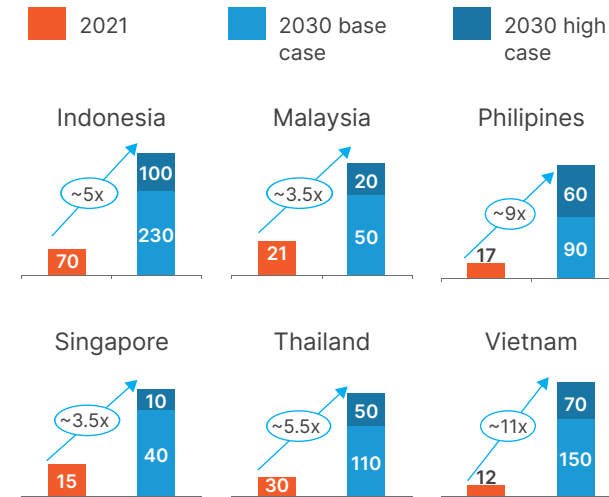
• Internet Economy Growth

Figure 4.7: Indonesia Internet Economy by Gross Merchandise Value (in USD Bn)



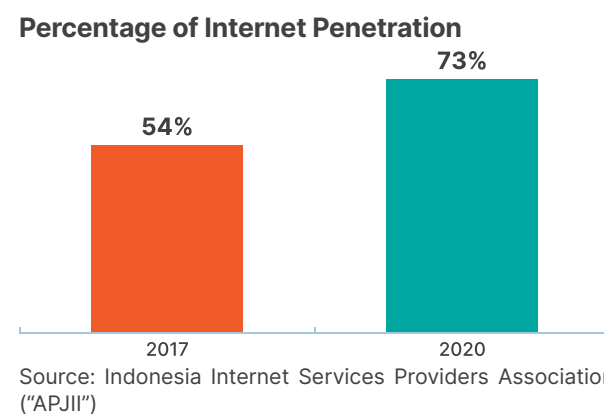
Indonesia has the largest and fastest-growing internet economy compared to neighboring countries in Southeast Asia, with internet gross merchandise value estimated at USD 70 Bn in 2021, growing at a 49% growth rate since 2020 and is estimated to grow to USD 146 Bn in 2025. Hence, the internet-related economy, including Fintech, still has ample opportunity to grow.

Figure 4.8: Southeast Asia's 2030 internet economy Gross Merchandise Value (in USD Bn)



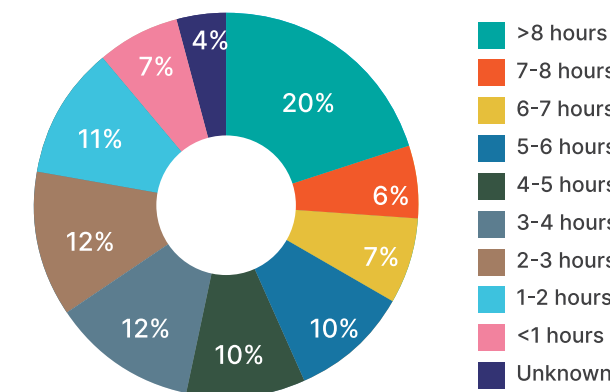
Furthermore, in 2030, Indonesia's internet economy GMV is expected to be USD 330 Bn. Compared to its neighbor countries in Southeast Asia, Indonesia has the highest GMV and the second-highest projected growth of GMV from 2021 to 2030. Not only that the GMV will be the highest, but the GMV that Indonesia is estimated to have in 2030 is also 6.6 times more than Singapore and 4.7 times more than Malaysia.

Figure 4.9: Percentage of Internet Penetration to Total Indonesia Population



In addition to the high internet economy, the number of mobile phone and internet users in Indonesia continues to grow. 73%²⁰ of Indonesia's population can access the internet by 2020, which is equivalent to 196.7 million internet users. The Government of Indonesia also continually improves the development of infrastructure. Statistic from the Indonesian Internet Service Providers Association ("APJII") shows 58% of users spend 2-8 hours and nearly 20% spend 8 hours or more on the internet daily²¹.

Figure 4.10: Daily usage of internet in Indonesia, 2020

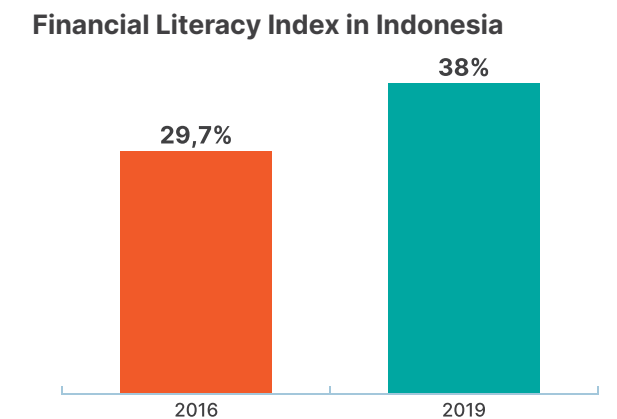


Profile statistics of internet users in Indonesia also reflects the huge market potential and growth opportunities for the Fintech industry.

• Financial Literacy and Inclusion

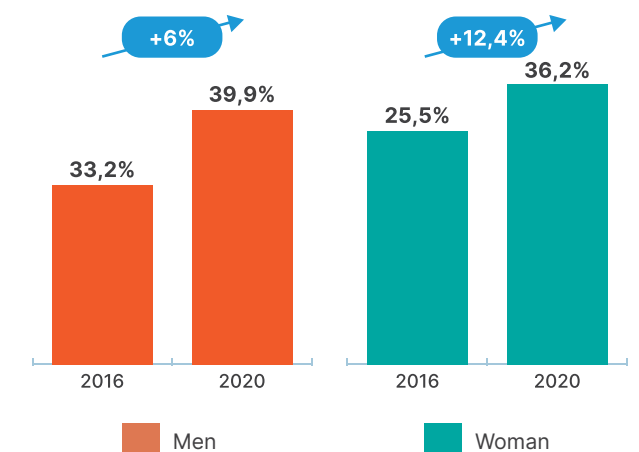
The growing digitalization through digital services during the pandemic has increased many risks, including various scams²². With the limited knowledge of financial and digital aspects, most people are prone to be victims of these types of crimes. Therefore, financial and digital literacy is highly needed. The OJK survey shows that Indonesia's financial literacy index has improved by 8.3% from 2016 to 2019²³.

Figure 4.11: Financial Literacy Index in Indonesia in 2016 vs 2019



The financial literacy index has improved for both men and women, with growth of financial literacy for women doubled than men in 2016 to 2019 at a CAGR 12.4%.

Figure 4.12: Level of Financial Literacy by Gender in 2016 vs 2019



¹⁷ World Bank. 2020. Expanding Middle Class Key for Indonesia's Future. <https://www.worldbank.org/en/news/press-release/2020/01/30/expanding-middle-class-key-for-indonesia-future>

¹⁸ Google. 2019. Google E-Conomy Report. https://www.thinkwithgoogle.com/intl/en-apac/consumer-insights/consumer-trends/e-conomy-sea-2021/?utm_source=twg_paid_gsn&utm_medium=paidsearch&utm_campaign=twg_paid_gsn&utm_medium=cpc&utm_source=Google&utm_team=twg-apac&utm_campaign=202011-seaeconomygenericbmm-id-en&gclid=Cj0KCQiA-qGNBhD3ARIsAO_o7ynlpM-6fKt-3fWXTTv1wcywwU-0aSV8T8F-OiGbgfcm5PnJR8-jWizQaAIC-EALw_wcB&gclid=aw.ds

¹⁹ Google. 2019. Google E-Conomy Report. https://www.thinkwithgoogle.com/intl/en-apac/consumer-insights/consumer-trends/e-conomy-sea-2021/?utm_source=twg_paid_gsn&utm_medium=paidsearch&utm_campaign=twg_paid_gsn&utm_medium=cpc&utm_source=Google&utm_team=twg-apac&utm_campaign=202011-seaeconomygenericbmm-id-en&gclid=Cj0KCQiA-qGNBhD3ARIsAO_o7ynlpM-6fKt-3fWXTTv1wcywwU-0aSV8T8F-OiGbgfcm5PnJR8-jWizQaAIC-EALw_wcB&gclid=aw.ds

²⁰ Indonesian Internet Service Providers Association. 2020. Laporan Survei Internet APJII 2019-2020-Q2. <https://www.apjii.or.id/content/read/39/521/Laporan-Survei-Internet-APJII-2019-2020-Q2>

Indonesian Internet Service Providers Association. 2020. Hasil Survei Penetrasi dan Perilaku Pengguna Internet Indonesia 2017. <https://www.apjii.or.id/content/read/39/342/Hasil-Survei-Penetrasi-dan-Perilaku-Pengguna-Internet-Indonesia-2017>

²¹ Indonesian Internet Service Providers Association. 2020. Laporan Survei Internet APJII 2019-2020-Q2. <https://www.apjii.or.id/content/read/39/521/Laporan-Survei-Internet-APJII-2019-2020-Q2>

²² OECD. 2021. Financial consumer protection and financial literacy in Asia in response to COVID-19. <https://www.oecd.org/daf/fin/financial-education/Financial-consumer-protection-and-financial-literacy-in-asia-in-response-to-COVID-19.pdf>

²³ Indonesia Financial Services Authority. 2019. Survei Nasional Literasi dan Inklusi Keuangan 2019. <https://www.ojk.go.id/id/berita-dan-kegiatan/publikasi/Pages/Survei-Nasional-Literasi-dan-Inklusi-Keluangan-2019.aspx>

• Opportunity from Large Number of Unbanked and Underbanked

Despite Indonesia's high working-age population, only 49% of Indonesian adults have access to a bank account, which means 51% are unbanked. Although being unbanked, more than 90% of the population own mobile phones, which represents an untapped opportunity for digital financial service²⁴. Furthermore, most Indonesian adults that have a bank account are underbanked. Hence, the unbanked and underbanked population could be the firm target market for Fintech players.

Another finding indicates that the utilization of financial products is considerably low in Indonesia. For instance, credit card per capita in Indonesia is 0.07 compared to 1.62 in Singapore²⁵. This figure is also illustrated in the previous section expressing how the Government still has continuous effort to improve financial literacy and financial inclusion.

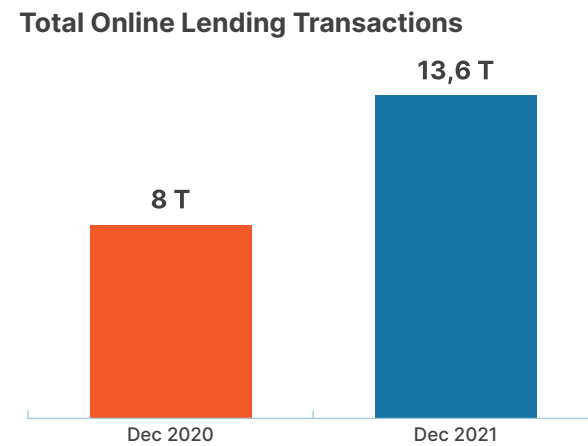
This profile brings prospects for Fintech players. The utilization of technology innovation through Fintech has the opportunity to accelerate financial inclusion because it can provide greater access to financial services.

• Rapid Adoption of Fintech

Transaction value each Fintech clusters

Online Lending

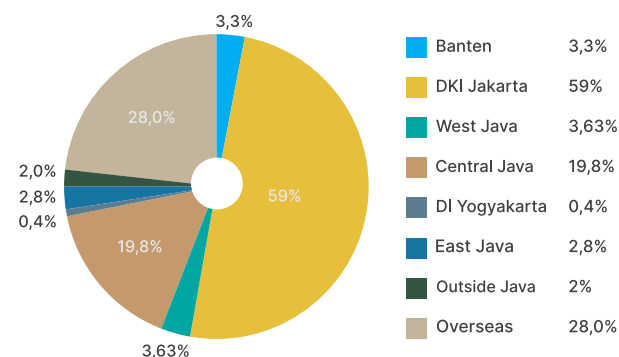
Figure 4.13: Total Online Lending Transactions in December 2020 and December 2021



Source: OJK

According to OJK²⁶, online lending has grown 70% YoY to IDR 13.6 Tn in December 2021. The loan disbursement is still focused on Java island, where 70% of total online lending transactions are still derived from Java, followed by 28% from overseas transactions, and 1.9% from outside Java transactions. Each city outside Java island generally contributes less than 1% of total transactions, except Sumatera Utara (1.8%) and Bengkulu (1%).

Figure 4.14: Percentage of Accumulative Lending Given by Creditors by Location (in Q4 2021)



Source: OJK

Lenders for online lending are from Indonesia and overseas, which are then further categorized into individuals, financial institutions ("FI") such as banks, and non-bank financial institutions ("NBFI") such as pawnshops, cooperatives, and other corporations.

²⁴ S&P Global. 2021. Indonesia eyes greater financial inclusion with gold-based blockchain system. <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/indonesia-eyes-greater-financial-inclusion-with-gold-based-blockchain-system-64423086>

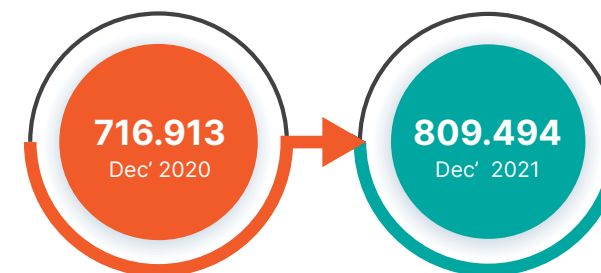
²⁵ J.P. Morgan. 2020. 2019 Global Payments Trends Report - Singapore Country Insights. <https://www.jpmorgan.com/merchant-services/insights/reports/singapore>

²⁶ Indonesia Financial Services Authority. 2021. Statistik Fintech. <https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/Fintech/default.aspx>

From January to December 2021, 75% of the outstanding loan for online lending is from Indonesia, in which other corporations (non FI and non-NBFI) and individuals are still dominating the transactions.

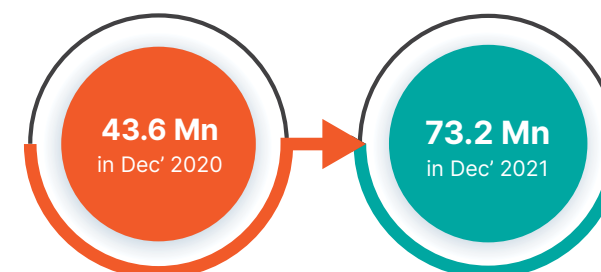
The overseas market contributes the rest of the outstanding loan a total of 24%, which is contributed the most by other corporations (non FI and non NBFI).

Figure 4.15: Number of Lenders in December 2020 vs December 2021



Source: OJK

Figure 4.16: Number of Borrowers in December 2020 vs December 2021



Source: OJK

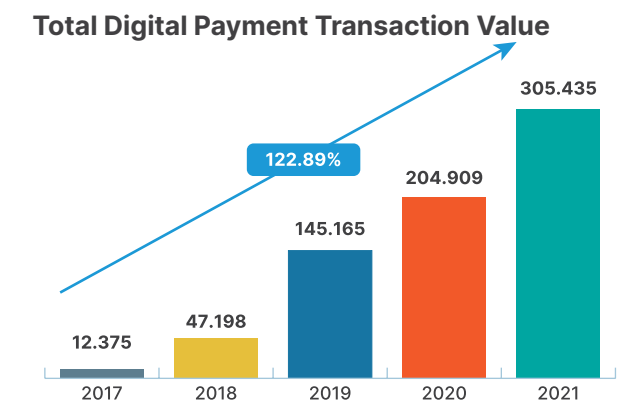
Digital Payment

According to Central Bank of Indonesia²⁷, digital payment transactions skyrocketed in Indonesia with YoY growth of 59% from December 2020 to December 2021.

The transaction value of electronic money has gone up from IDR 22.1 Tn in December 2020 to IDR 35.1 Tn in December 2021. According to the Central Bank of Indonesia, digital payment transactions growth in Indonesia is dominated by non-bank Fintech players as the country works its way toward a cashless society.

According to Central Bank of Indonesia, the largest driver of digital payment as of January 2020, prior to COVID-19 pandemic, is retail at (28%), followed by transportation (27%), food order (20%), e-commerce (15%), and bill payments (7%).

Figure 4.17: Total Digital Payment Transaction Value in 2017-2021



Source: Central Bank of Indonesia

Central Bank of Indonesia since 2019 has been initiating digital transformation through the launching of Indonesia Payment System Blueprint 2025 which initiatives such as: 1) Quick Response Code Indonesian Standard ("QRIS"), with 12 Mn merchants that have use QRIS across the nation end of 2021, 2) Support digitalization in banking industry and interlink banks with Fintech through API standardization, 3) BI-FAST to support real-time infrastructure, 4) Regulation reformation of digital payment.

In 2020 to 2021, Central Bank of Indonesia has issued payment system regulations through PBI No. 22/23/PBI/2020 and PBI No. 23/6/PBI/2021 as well as PBI No. 23/11/PBI/2021. The regulation streamlines different payment licenses and regulate front-end and back-end digital payment business separately, which increase the conduciveness of the digital payment ecosystem in Indonesia.

²⁷ Central Bank of Indonesia. 2021. E-Money Statistics. <https://www.bi.go.id/en/statistik/ekonomi-keuangan/ssp/uang-elektronik-jumlah.aspx>

In addition to that, COVID-19 pandemic has pushed individuals and businesses to reorient their payment operations- MSMEs are becoming more aware of payment solutions available, while payment providers are continually evolving to meet customer needs through solutions such as QR code, link-based payments.

Cross border payments have been showing significant growth globally. In 2020, global cross border e-commerce transactions grew by 17% despite trade volumes decline. In Indonesia, out of 88 respondents that have completed the survey, 17% have been offering their service in the overseas market, while 21% of total digital payment Fintech players have plans to expand their reach to the overseas market in the next 1-2 year(s).

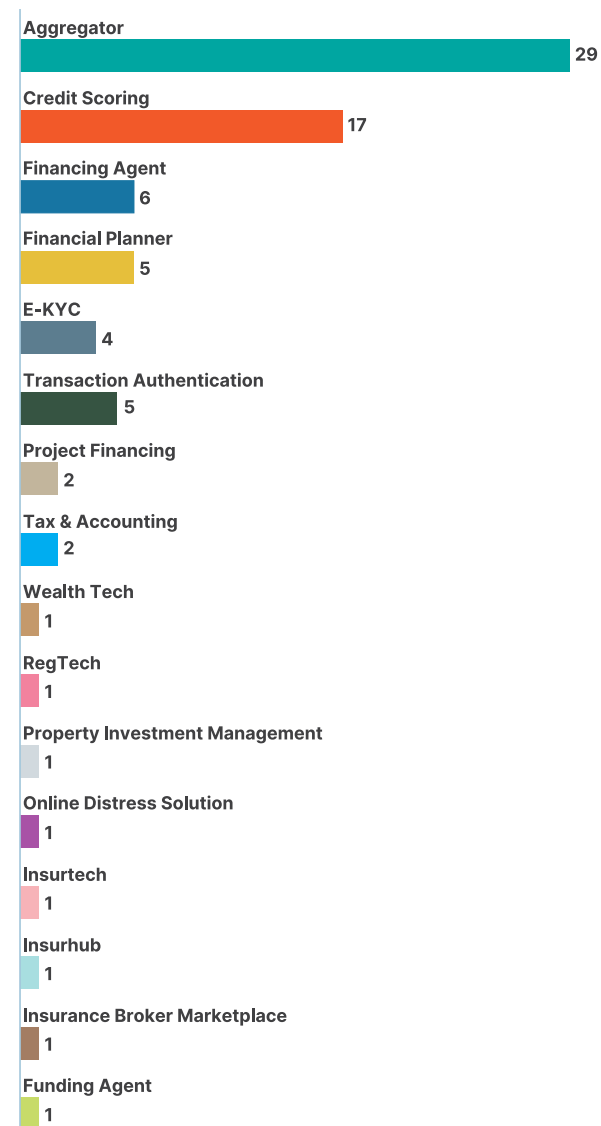
Digital Financial Innovation ("DFI")

As of Q4 2021, the total number of Fintech companies registered under DFI cluster is 80. Aggregators, Credit Scoring, and Financing Agents are the most popular business models in the DFI cluster, constituting 68% of total DFI companies in Q4 2021.



Figure 4.18: Number of Fintech companies under DFI by sub-segment in Q4 2021

Fintech in DFI based on Business Models



Source: AFTECH Secretariat

In 2019, the Indonesia Financial Services Authority (OJK) issued The Digital Finance Innovation Action Plan, 2020–2024, which focuses on developing a supportive and comprehensive digital financial ecosystem to create a financial services industry that is competitive, resilient to change, and fit for the future. The regulatory framework at the heart of the action plan aims to keep pace with technological change, mitigate technology-associated risks, protect consumers' interests, and promote competition.

C. Maturity Level

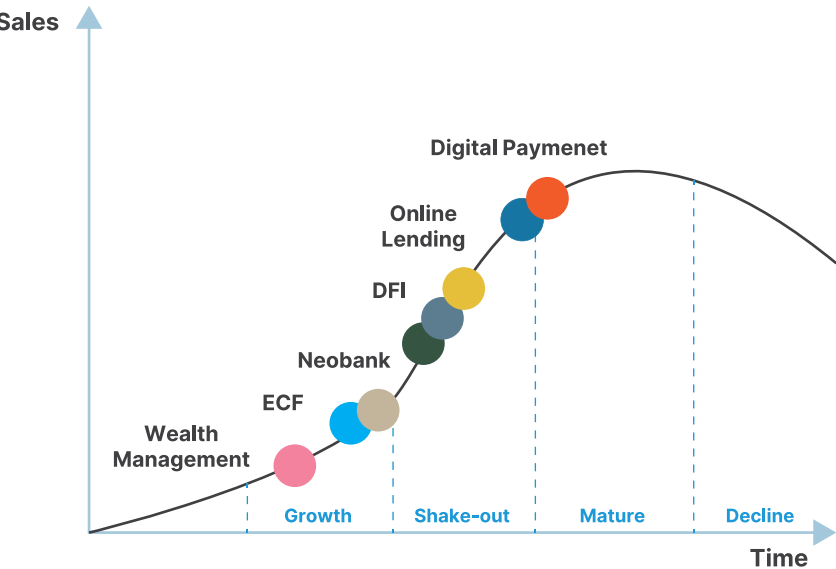
Fintech startups across categories experience different dynamics in the market. The following framework is used to determine the maturity level of each Fintech cluster. In addition, in this report, EY reassessed the actualization of the framework by compiling relevant indicators, including growth, value (volume or transaction value, consumer acquisition), number of players operating within the sub-sector, and the regulatory environment of the sector.

Table 4.19: Fintech Maturity for Each Business Verticals in Q2 2021

Fintech Cluster	Maturity	Notes
Digital Payment	Mature	<p>Digital Payment has achieved the most maturity compared to other Fintech clusters. The usage of digital payment apps is surging and this trend to a cashless economy is expected to continue even further. Indonesia Digital Payment has developed a major partnership with e-commerce, ride-hailing, banks, and other relevant key stakeholders in Indonesia, as well as developed a solid customer base with high customer acquisition.</p> <p>Regulation for the cluster including processing a payment transaction, the payment system has been defined, and continually developed through Indonesia Payment System Blueprint 2025.</p> <p>Growing reliance on Digital Payment has attracted consistent significant investment to the cluster, in Indonesia and ASEAN.</p> <p>Fintech players in the Digital Payment landscape have consolidated through partnership, merger and acquisition into a few big names.</p>
Online Lending	Mature	<p>Online Lending has a rapid increase in the number of transactions, players, as well as the established regulatory environment of the sector. The internet economy offers the potential for digital lending services, especially for MSMEs and underserved people.</p> <p>As Online Lending is one of the longest established clusters amongst others, most regulations covering Online Lending have been formed, with continuous monitoring from OJK for illegal Online Lending.</p> <p>Despite the COVID-19 pandemic, Online Lending continues to be attractive to investors as well in Q2 2021, an ongoing trend since 2017.</p>
Neobank	Growth	<p>Business model Neobank has just been developed, with the specific regulation for the cluster, especially POJK which regulates the activity of digital banks, is still developing.</p> <p>The cluster considerably has huge room to grow in the future for the unbanked population. Furthermore, currently, Neobank competes with the conventional banks in the retail market, which still has a long way to go to reach the corporation market in the future.</p>
Securities Crowdfunding ("SCF")	Growth	<p>Regulations for the SCF sector have been shaped, including the requirements for Fintech players, restrictions, as well as reporting.</p>

Fintech Cluster	Maturity	Notes
Wealth Management	Growth	Fintech operators in this cluster must have permission from OJK. More opportunities are captured for foreign wealth management as the local providers are still lagging in terms of product or service offerings. However, the overall growth is driven by the rising HNWI population, internet penetration, and a large proportion of the unbanked population.
Digital Financial Innovation ("DFI")	Growth to Mature	DFI has been growing significantly since the implementation of the first regulatory sandbox in 2019. Among DFI clusters are several sub-clusters that are already in the mature stage compared to others, including aggregators, credit scoring, and other 14-sub clusters that are currently in the growth stage and starting to garner market attention.

Figure 4.20: Fintech Maturity Phase



Source: AFTECH Secretariat Analysis

Growth
In this phase, various Fintech categories/business models are slowly starting to garner market attraction. Overall, depending on the extent of the growth phase, start-up experiences range from increase/rising revenue to even an increase in profitability.

Shake-out
The shake-out phase is both characterized by high fragmentation of players at its early stage and subsequent consolidation of players during its later stage. As the sector moves forward

to reach maturity, smaller and less developed players naturally lose out to bigger and more developed players through numerous exit strategies.

Maturity
Market consolidation to a few big players and declining growth rate are a few features of the sub-sector within the maturity phase. At this stage, the sector has reached considerable saturation and new entrants to the market often face a significant challenge in acquiring market share.



5. INDONESIA FINTECH LANDSCAPE

Continuing from the high-level Fintech industry overview and its growth drivers, this section will examine the characteristics of the Indonesia Fintech landscape. To assess Indonesia's Fintech landscape, nine (9) key factors are considered, namely years of operations; primary users; Micro, Small, and Medium Enterprises ("MSMEs") as Fintech users, market penetration, expansion of business model, number of employees, Fintech transactions, partnerships, and an overview of challenges in Indonesia's Fintech industry.

The Fintech industry in Indonesia shows promising growth in supply and demand, the number of Fintech players and users, as well as transaction value. Supported by the tremendous growth of Indonesia's middle class, Indonesia's Fintech companies mostly cater to the low to middle-income segment. While in terms of age range, 73% of Fintech users are aged 25–35 years and domiciled on Java Island in Jabodetabek, followed by Bandung and Surabaya. On the other hand, 76% of Fintech players in Indonesia were established in less than 5 years, and 16% of Fintech players are aged 6–10 years old. Hence, it can be concluded that the Fintech industry in Indonesia is still in the early development stage.

The Fintech industry also contributed to the labor market in the financial services sector. Most respondents employ 30–300 people, and this number is believed to increase in the next 1 to 2 years.

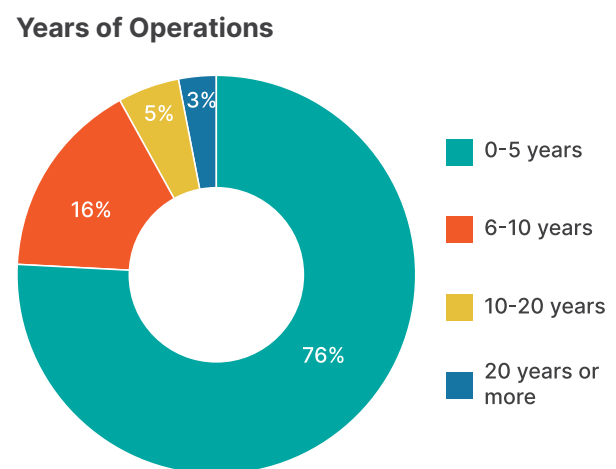
Fintech transactions continued to grow throughout 2021, Digital Payments recorded the largest transactions. The other 28% of the total respondents said they had accumulated

an annual transaction value of between IDR 5 - 500 Billion, while the other 28% of the total respondents submitted total annual transactions of between IDR 500 Billion - 5 Trillion.

The Government of Indonesia makes important contributions in terms of significant transaction value growth. Several supports include education and digital literacy initiatives, as well as financial management in collaboration with the Fintech industry ecosystem to increase community adoption of digital financial services. Government support can also be seen in infrastructure improvements, talent, and efforts to create a favorable regulatory environment for the industry.

A. Years of Operations

Figure 5.1: Years of operations by Fintech cluster in Q2 2021

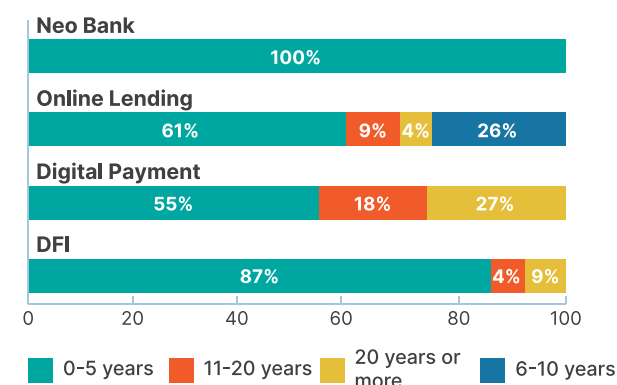


Source : AFTECH members

76% of Fintech players in Indonesia were established less than 5 years ago, while 16% of all Fintech players were established in the past 6-10 years ago.

Figure 5.2: Years of operations by Fintech cluster in Q2 2021 by Business Model

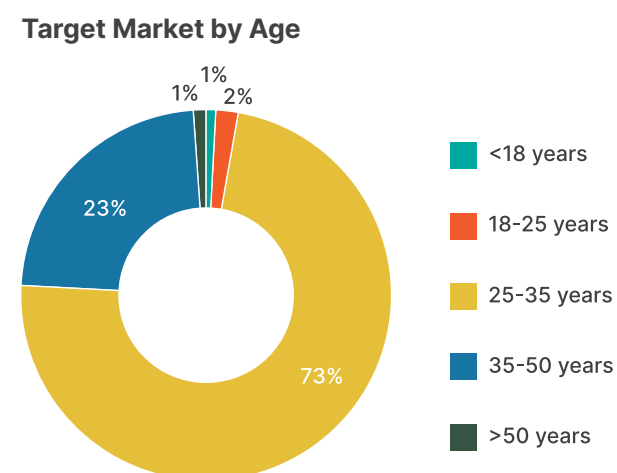
Years of Establishment (by clusters)



Source : AFTECH members

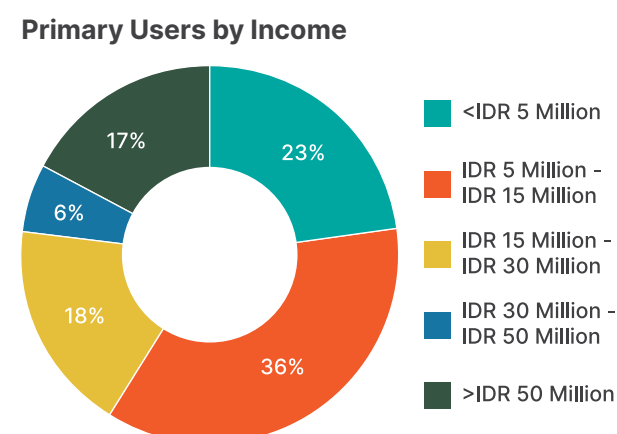
B. Primary Fintech Users

Figure 5.3: Target Market by Age



Source : AFTECH members

Figure 5.4: Primary Users by Income in Q2 2021



Source : AFTECH members

Online Lending and Digital Payment are the oldest Fintech clusters in Indonesia. Meanwhile, DFI saw a major increase in the past 5 years. The new cluster, Neobank, operated less than 5 years ago.

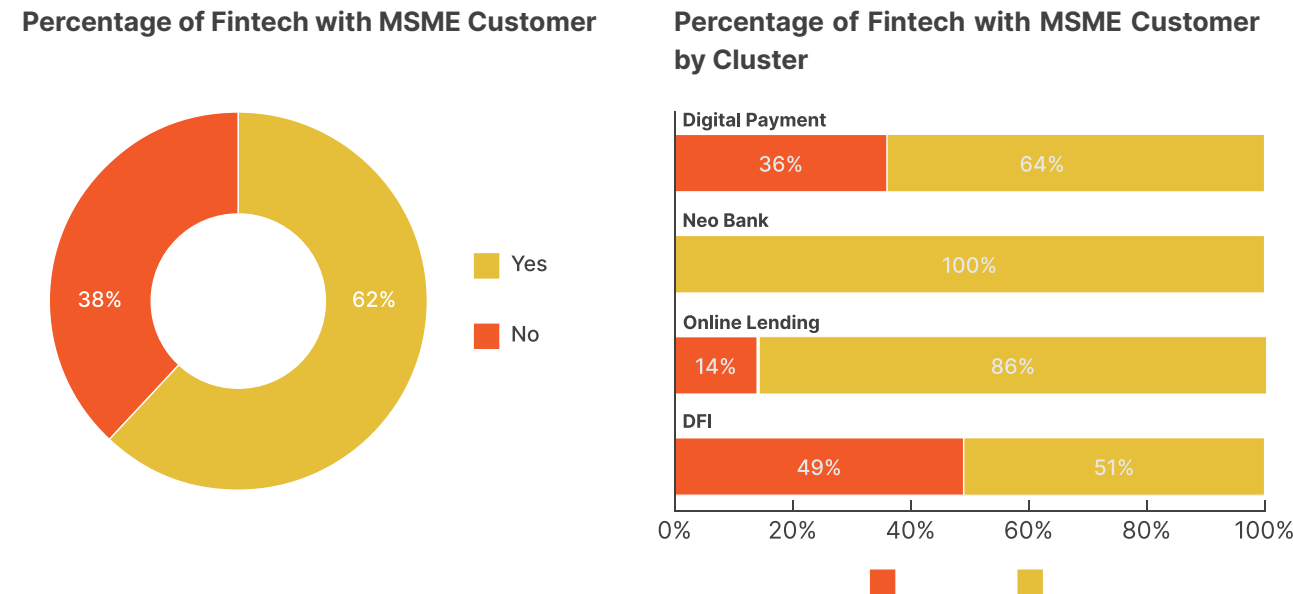
73% of respondents claimed that Fintech users are individuals in the age range of 25–35. Several Fintech companies also target the 35–50 years age group, where 23% of Fintech users are contributed from the age range.

36% of Fintech users are individuals with an income range of IDR 5 Mn to IDR 15 Mn. The second-largest proportion (23%) fell on the users with an income less than IDR 5 Mn. This indicates that a large proportion of the Fintech players targeted low to middle-income people.

C. MSME as Fintech Users

MSME is significant to economic growth in Indonesia as it contributes 61% to the country's Gross Domestic Product ("GDP") and 97% to employment²⁸.

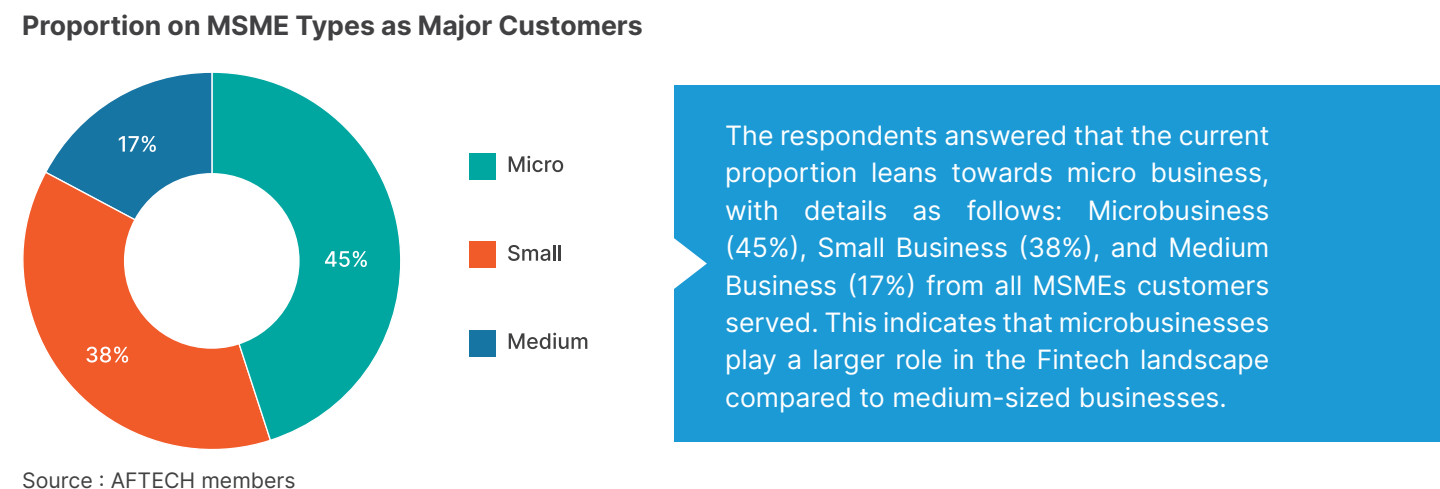
Figure 5.5: Percentage of Fintech with MSME Customer in Q2 2021



Source : AFTECH members

Based on the survey, 62% of all respondents in Indonesia claimed to have already served MSME as their target market.

Figure 5.6: Proportion of MSME Types as Major Customers

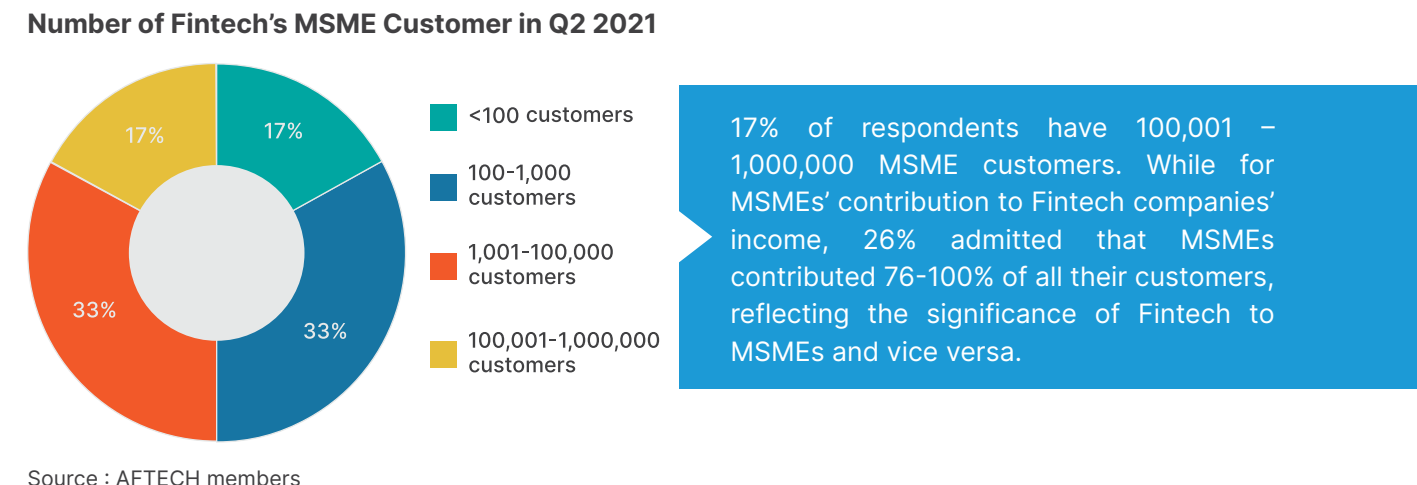


Source : AFTECH members

²⁸ UNDP. 2020. Report: Impact of COVID-19 Pandemic on MSMEs in Indonesia. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjFq-Cr1cT0AhXsSGwGHAR5DFMQFnoECDUQAQ&url=https%3A%2F%2Fwww.id.undp.org%2Fcontent%2Fdam%2Finonesia%2F2021%2Fdocs%2FINS-Report%2520Impact%2520of%2520COVID-19%2520Pandemic%2520on%2520MSMEs%2520in%2520Indonesia.pdf&usg=AOvVaw1h_cjfWqnOaF_pzzPqxJub

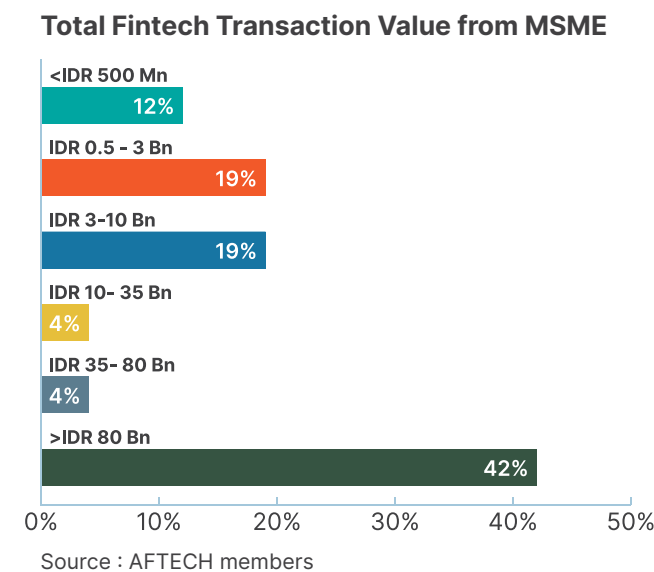
MSME is generally segmented into three (3) segments: 1.) Microbusiness, which is a business with revenue less than IDR 300 Mn; 2.) Small-sized business, which is a business with revenue from IDR 300 Mn to IDR 2.5 Bn; and 3.) Medium-sized business, which is a business with revenue from IDR 2.5 Bn to IDR 50 Bn²⁹.

Figure 5.7: Total MSME Customers in Q2 2021



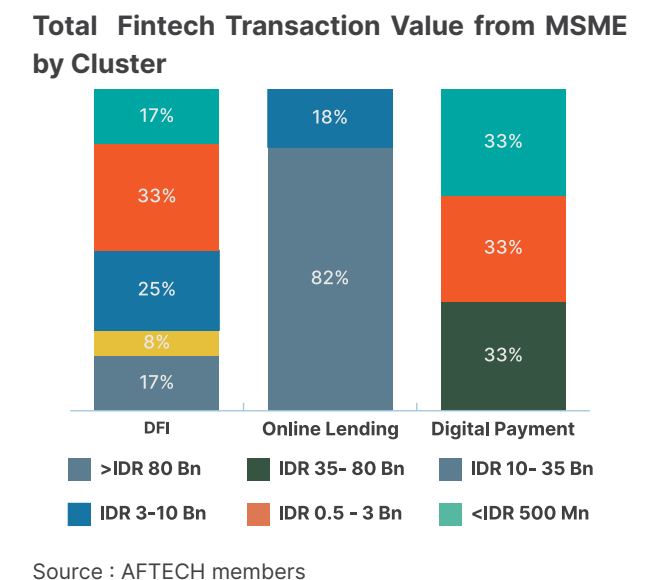
Source : AFTECH members

Figure 5.8: Transaction Value from MSME in Q2 2021



42% of the respondents claimed that their MSME consumer's transaction value amounted to more than IDR 80 Bn. While 12% of the respondents claimed that their MSME customers' transaction value amounted to less than IDR 500 Mn.

Figure 5.9: Transaction Value from MSME by Cluster in Q2 2021



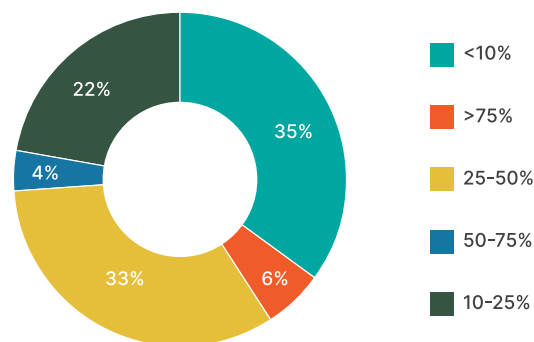
Continuing from the transaction value of MSME, the survey provides details on the cluster. The online lending cluster captures a bigger proportion of transaction value, with 82% of all online lending players obtaining more than

²⁹ Asian Development Bank. 2020. 2020 ADB SME Monitor. <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwiPjJn6I8L0AhXCSWwGHZjwD1oQFnoECAMQAQ&url=https%3A%2F%2Fdata.adb.org%2Fmedia%2F7256%2Fdownload&usg=AOvVaw39NvVU7VaKujKIs0JKxw7r>

IDR 80 Bn from MSMEs, while the transaction amount is more diverse in the digital payment and DFI clusters. The considerable amount of transaction value contributed by each Fintech indicated that Fintech companies hold a significant role for MSME, with their role continuing to grow to be even more prominent for financial services adoption and contribution to Indonesia.

Figure 5.10: Percentage of MSMEs owned by Women

% Fintech's MSMEs customer owned by Women



Source : AFTECH members

The gender equality topic in this year's AMS shows that 33% of respondents and 50% of leading players stated that 25–50% of their MSME consumers are owned by women. This suggests that women's contributions to MSME and Fintech cannot be overlooked. Financial and digital literacy for women is becoming increasingly important for MSMEs players as they seek to maximize the available products and services in the financial industry in order to grow their businesses.

MSMEs have become significant users of Fintech in Indonesia and globally. In an EY Global Survey across five (5) markets, including China, the United States, the United Kingdom, South Africa, and Mexico, China displays the highest Fintech adoption rate at 61%, followed by the US at 23%. The adoption rate globally is 25%. That means that within the past six months, one in four MSMEs globally has used services provided by Fintech in all four categories³⁰.

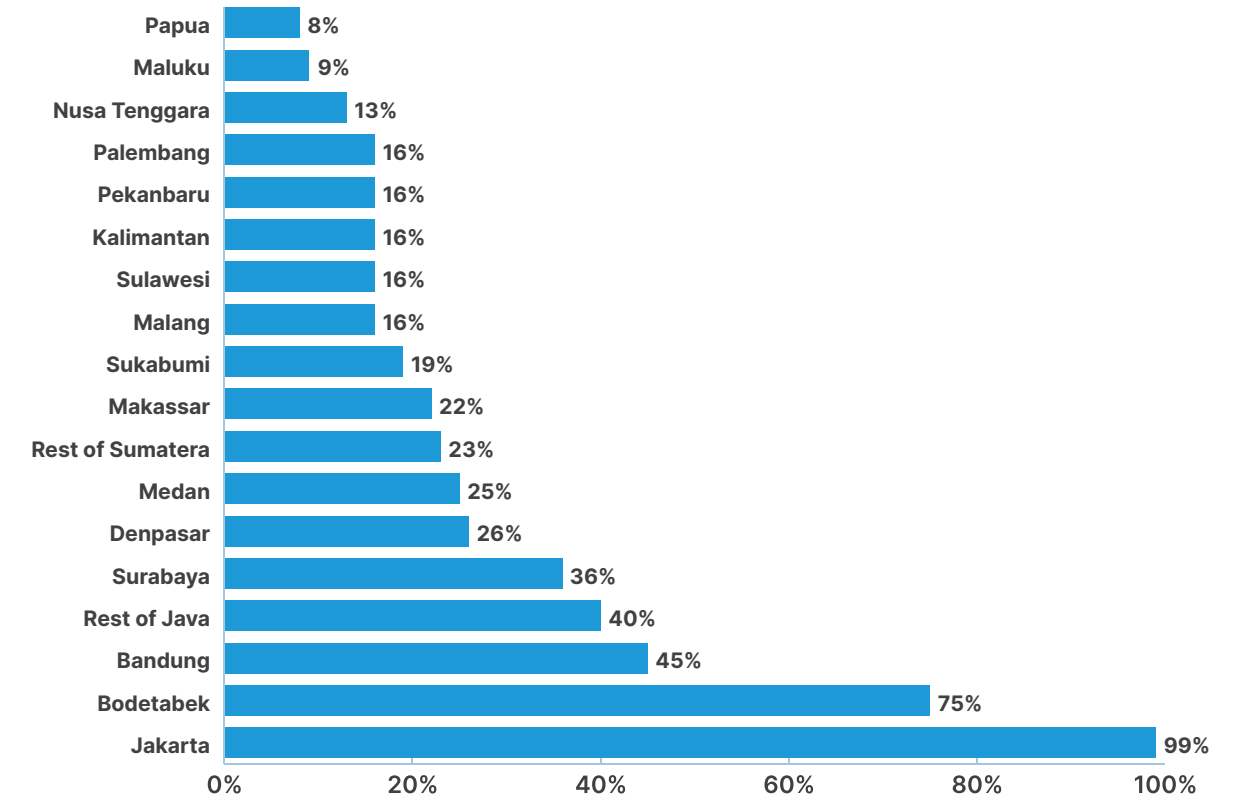
D. Market Penetration Fintech

Being an archipelago country with more than 17,000 islands, Fintech has the opportunity to solve the financial inclusion challenges in Indonesia. Currently, the Jabodetabek area remains the main market for Fintech. 99% and 75% of all Fintechs indicated Jakarta and Bodetabek as their main markets, respectively, followed by Bandung (45%) and Surabaya (36%).



Figure 5.11: Fintech Companies' Main market in Q2 2021

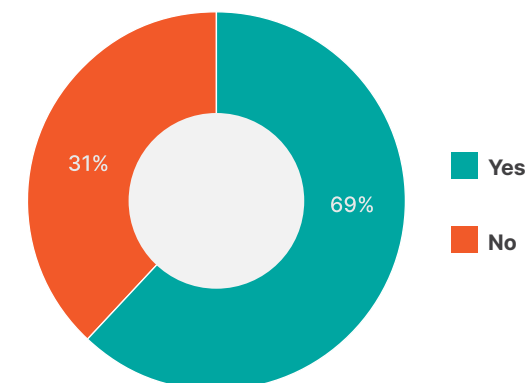
Fintech Main Market as of Q2 2021



Source : AFTECH members

Figure 5.12: The Proportion of Fintech Players that Serve Rural Areas

Fintech Players that Serve Rural Areas

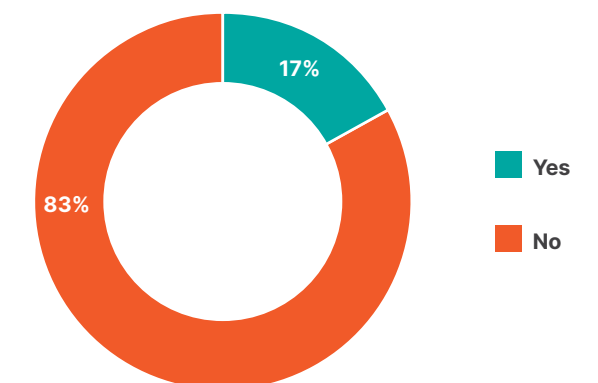


Source : AFTECH members

69% responded that they have already served rural areas in Indonesia. This shows that the majority of the Fintech players have not focused on only urban areas.

Figure 5.13: The Proportion of Fintech Players that Serve Overseas Market

Fintech Players that Serve Overseas Market



Source : AFTECH members

In addition to expanding services to rural areas, 17% of all Fintech companies in Indonesia have already penetrated foreign markets such as Singapore, Thailand, and India. Specifically, the

³⁰ Ernst & Young. 2019. Global Fintech Adoption Index. https://www.ey.com/en_gl/ey-global-fintech-adoption-index

DFI cluster is the cluster that has expanded the most to foreign markets, followed by Online Lending and Digital Payment. The respondents on overseas market presence amounted to 88 respondents.

E. Expansion of Business Model

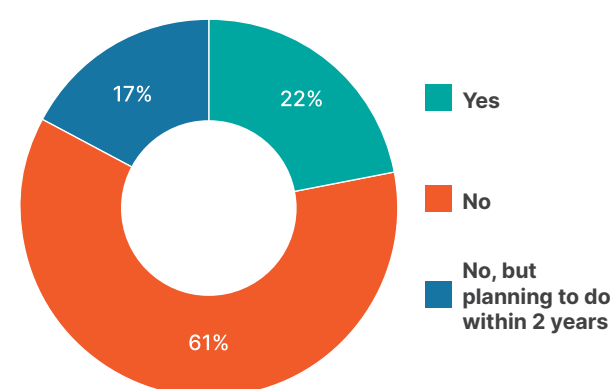
The survey also looked at how Fintech players strategize their operations. The following are the plans presented by Fintech players going forward to increase their revenue:

- Focusing on high revenue products (59%)
- Entering new markets including overseas and rural areas (34%)
- Exploring new line of business (52%)
- No plans to expand or focus on a specific product (7%)

The Fintech players claimed that focusing on high-revenue products seems to be the priority (59%). This is followed by exploring a new line of Fintech business (52%), which is the second most rated option that is believed could help the company grow in terms of revenue, as well as enter a new market in overseas or rural areas.

Figure 5.14: The Fintech Players' Plan to Expand into Overseas Market

Plan to Expand into Overseas Market



Source : AFTECH members

In regards to expansion overseas by Fintech players, 39% of Fintech companies are keen to expand into the overseas market; with 22%

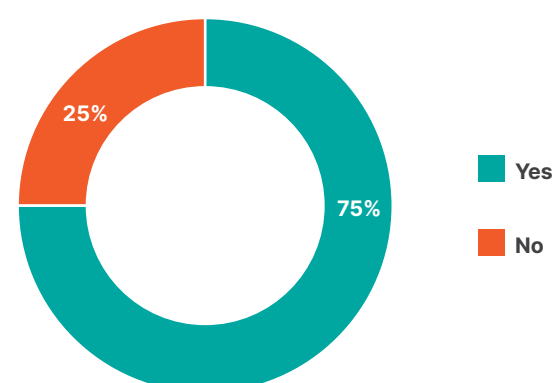
stating that they already have a plan to expand into the overseas market and another 17% planning to do so within the next 2 years.

Of Fintech companies that have expressed their plan to expand to overseas markets, 68% are DFI, 15% from Online Lending, and 15% from Digital Payment.

Government facilitation can be one of the deciding factors that support domestic Fintech to expand into overseas markets. There is a reference that can be used from the Australian Government which has implemented incentives for Insurtech that will export and expand to overseas markets by granting Australia Trade Export Market Development Grants and Global Connections Fund.

Figure 5.15: The Fintech Players' Plan to Expand into Rural Market

Plan to Expand into Rural Market



Source : AFTECH members

75% of Fintech companies stated to expand their market to rural areas, indicating a positive signal from the Fintech industry in supporting financial inclusion in Indonesia.

The findings above show that plans for expansion to overseas and rural areas also show a significant role in the ease of cross-border transactions in the Fintech industry. Associating with these, the Central Bank of Indonesia and the Bank of Thailand have also launched QR payment linkage between Indonesia and Thailand for both countries' customers to make

and accept instant cross-border QR payments for services and goods, which also marks a key milestone in the ASEAN Payment Connectivity initiative to promote financial integration in the region³¹.

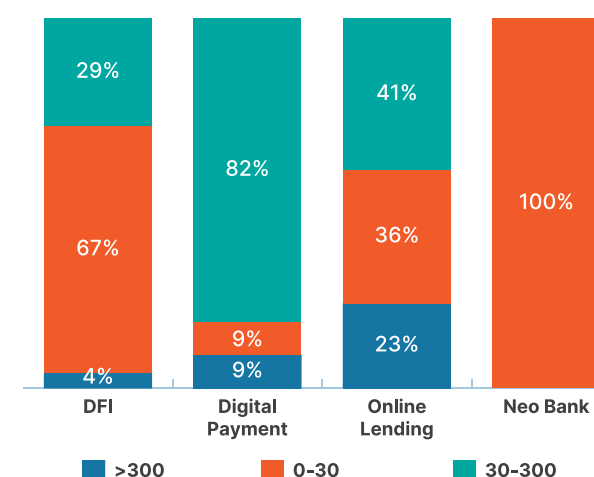
F. Number of Employees

According to a report from Michael Page³², the number of jobs rose in Q3 2021 compared to Q2 2021 in financial services (45%), digital (14%), and technology (13%) driven by Fintech.

The rise in employment in financial services is due to the investment in the financial sector, including the Fintech sector, as well as competition, which is inducing healthy hiring activities. Digital and technology are driven by employment by Fintech companies, as well as venture capital and private equity firms (especially their portfolio businesses, which are often in digital and technology).

Figure 5.16: Workforce Employed by Clusters in Q2 2021

Workforce Employed by Cluster



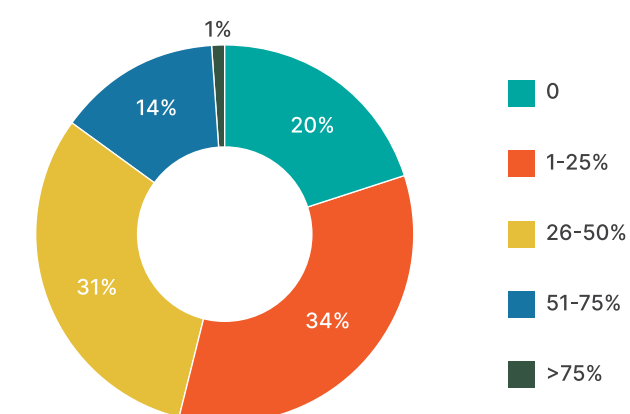
Source : AFTECH members

The rise in the number of employees is reflected in Online Lending and DFI.

The majority of respondents employed 30 to 300 people. Referring to the complexity of business models, the majority of Digital Payment (82%) and Online Lending (41%) employed more employees, having 30-300 employees, while Neobank and DFI generally employed 30 people.

Figure 5.17: The Proportion of Outsourced or Non-Permanent Employee

The Proportion of Outsourced or Non-Permanent Employee



Source : AFTECH members

Survey results show that most employees that work in the Fintech sector are mostly a combination of permanent and outsourced employees. 34% of respondents responded that they have 26-50% outsourced employees, while the other 20% of all Fintech players claimed that they have 1-25% of their employees outsourced. This combination of permanent and outsourced employees is expected to keep going in the future.

Although combination of permanent and outsourced employees is preferred, 100% of respondents answered that the outsourced talent and temporary employee are not likely to work on core functions (functions that require specialized competencies such as business

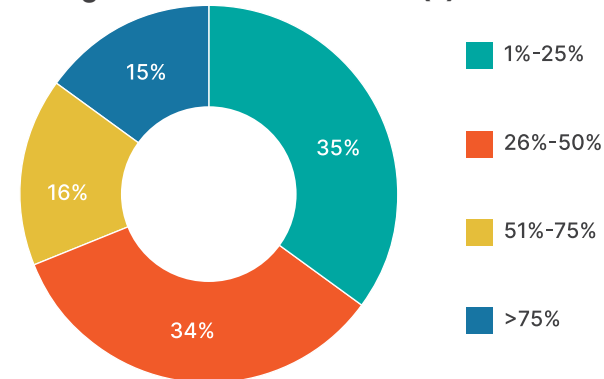
³¹ Central Bank of Indonesia. 2021. INDONESIA AND THAILAND LAUNCH CROSS-BORDER QR PAYMENT LINKAGE. https://www.bi.go.id/en/publikasi/ruang-media/news-release/Pages/sp_170821.aspx

³² The Edge Market. 2021. Job opportunities in financial services, Fintech, healthcare rose in 2Q, says recruitment specialist Michael Page. <https://www.theedgemarkets.com/article/job-opportunities-financial-services-fintech-healthcare-rose-2q-says-recruitment-specialis>

development and product management), compared to permanent employee, which suggests that Fintech companies are still keen on developing their talent internally for core functions to meet industry's demand.

Figure 5.18: Workforce Increase in the Next 1-2 year(s)

Hiring Plan in the Next 1-2 Year(s)



Source : AFTECH members

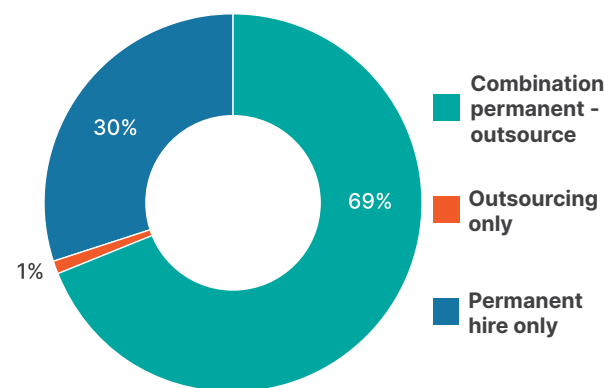
In terms of Fintech's contribution to employment, 72% of respondents also indicate their plan to hire more workforce in the next 1-2 year(s) for both core and non-core functions. Based on AFTECH members' onboarding, approximately 70% of all Fintech companies have put manpower cost as one of the major cost components for the next 3-5 years.

The majority of respondents (35%) claimed they will hire 1-25% more from the current state. In contrast, 15% of the respondents would like to increase more than 75% of the current

workforce. This number indicates significant progress in the potential growth for the Fintech players in the future, as well as the Fintech industry's contribution to employment in the country.

Figure 5.19: Workforce Structure Plan

Workforce Structure Plan

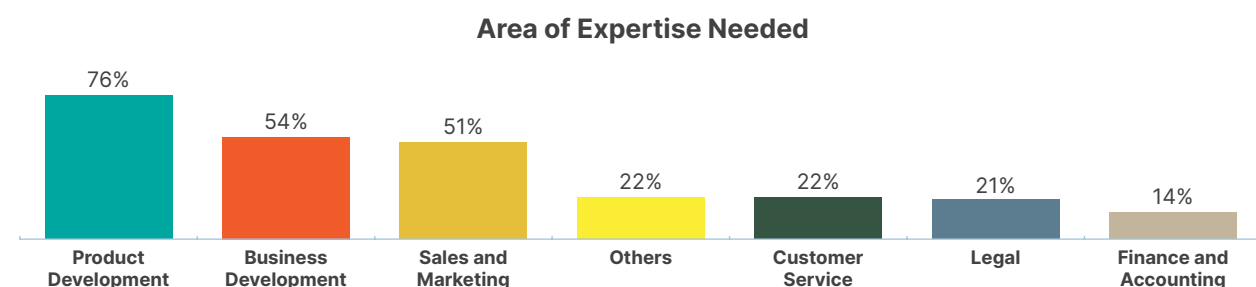


Source : AFTECH members

The survey also asked about the Fintech players' preferences in case they do want to hire employees in the future. For the workforce increase in the next 1-2 years (s), 69% of the respondents plan to hire both permanent and non-permanent employees, while 30% will only hire permanent employees.

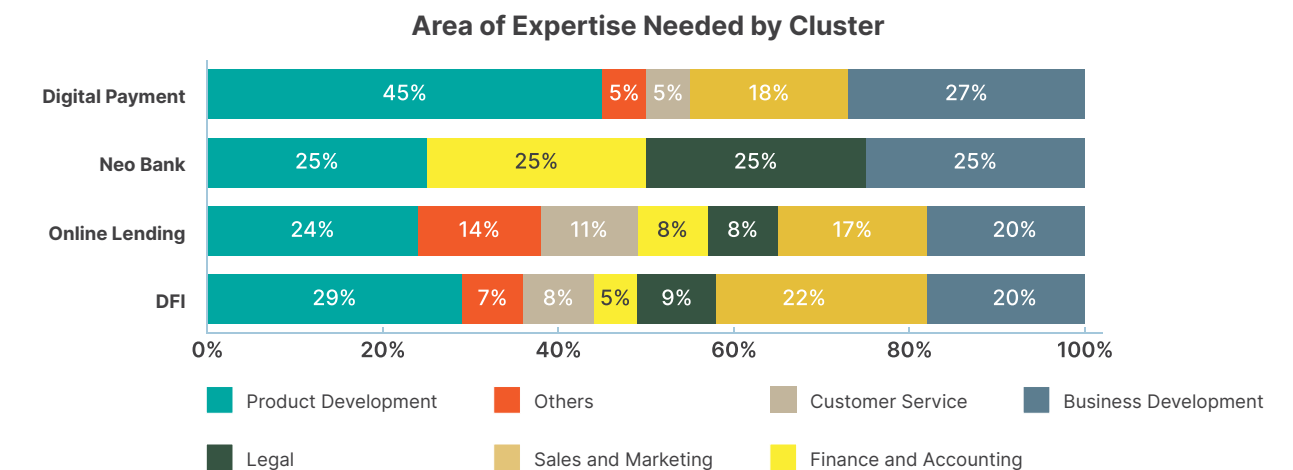
Based on the survey, there are considerably many areas of expertise that are needed by Fintech as follows. Product development (74%), sales and marketing (52%), and business development (49%). According to the respondents, product development is especially needed in the Digital Payment sector.

Figure 5.20: Area of Expertise Needed in the Next 1-2 year(s)



Source : AFTECH members

Figure 5.21: Area of Expertise Needed in the Next 1-2 year(s) by Cluster

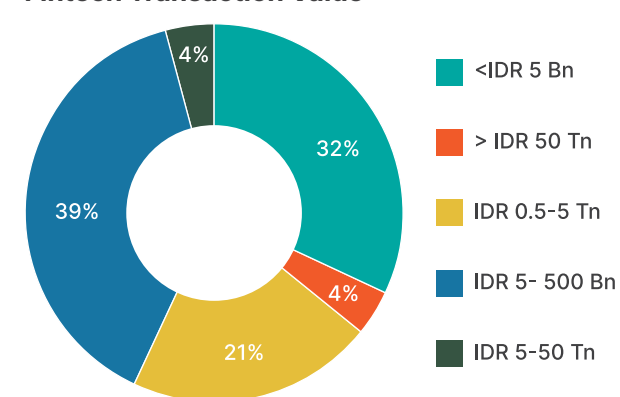


Source : AFTECH members

G. Fintech Transaction

Figure 5.22: Fintech Transaction Value in July 2020-June 2021

Fintech Transaction Value



Source : AFTECH members

The majority (39%) of respondents have a transaction value of IDR 5-500 Bn, while 32% of respondents for Fintech companies have a smaller transaction value of less than IDR 5 Bn per year.

Next, 21% of total respondents have IDR 0.5-5 Tn transactions per year, and 4% of total respondents have a large transaction value of above IDR 5 Tn per year. For leading players, 45% claimed to have IDR 0.5-5 Tn and 11% with IDR >50 Tn transaction value.

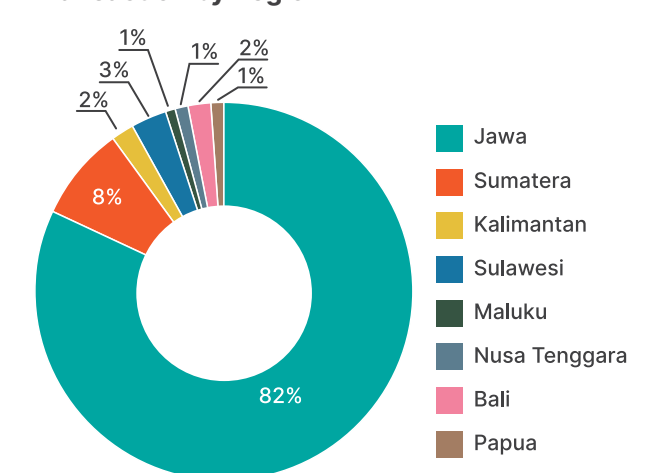
Compared to AFTECH AMS 2019/2020, whereas 69% of the respondents experienced slower business, the Fintech transaction value

from this year's survey indicates that Fintech companies have slowly rebounded in 2021. This also aligns with the investment in the Fintech sector, which increased significantly in 2021 and is experiencing increased demand from users.

58% of total respondents also believe that due to COVID-19, there is increasing demand for Fintech services. This reflects that Fintech companies have maintained operational resilience during the pandemic, in addition to current market conditions and social distancing practices that have also increased the adoption of some Fintech business models.

Figure 5.23: Fintech transaction by region in Q2 2021

Transaction by Region



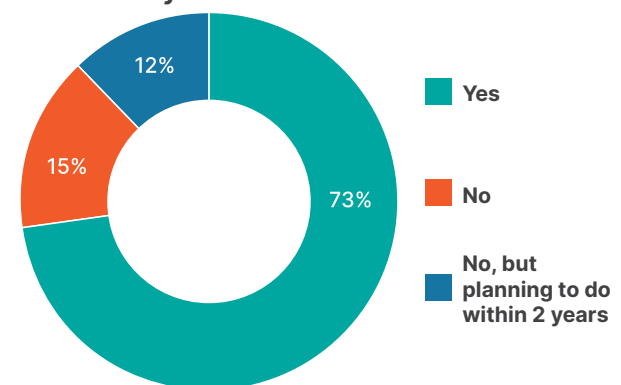
Source : AFTECH members

The transaction value by region shows Java (82%) is the main market in the Fintech industry, with the main customers in age 25- 35 years old and income IDR 5-15 Mn. As Fintech heavily relies on internet penetration; infrastructure, financial and digital literacy has become important for the sector to expand their services to a wider market.

H. Partnership with Fintech Players or other Fintech Ecosystem Players

Figure 5.24: Fintech companies on Partnership with other Fintech players

Fintech Companies on Partnership with other Fintech Players

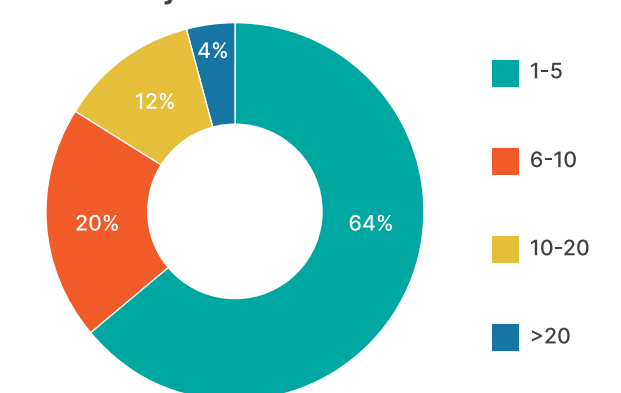


Source: AFTECH members

With the partnership between Fintech players, 73% of respondents stated that they have partnered with other Fintech. Whilst the rest are planning to have a partnership with other Fintech players in the next 24 months.

Figure 5.25: Current Fintech companies' number of partnerships in Q2 2021

Current Number of Partnerships with other Fintech Players



Source: AFTECH members

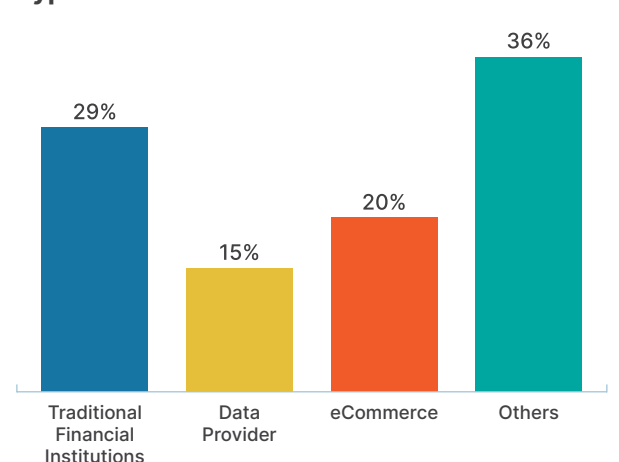
Most respondents (64%) conveyed to have 1-5 partnerships with other Fintech players, while 20% of respondents have 6-10 partnerships with other Fintech players.

Profile of partners that have been developed by the respondents are as follow:

1. Online Lending (50%)
2. Digital Payment (31%)
3. E-KYC (25%)

Figure 5.26: Types of Partnership developed/ will be developed by Fintech Ecosystem Player

Type of Partners



Source: AFTECH members

Furthermore, the respondents also stated that they have partnered or would like to have a partnership with other stakeholders such as traditional financial institutions, including banks, non-bank institutions, data providers, and e-commerce are the types of desired partners. The primary reasons for respondents to establish partnerships with different stakeholders are as follow:

1. To access broader customers (51%)
2. To provide alternative data sources (22%)
3. To develop new products (21%)

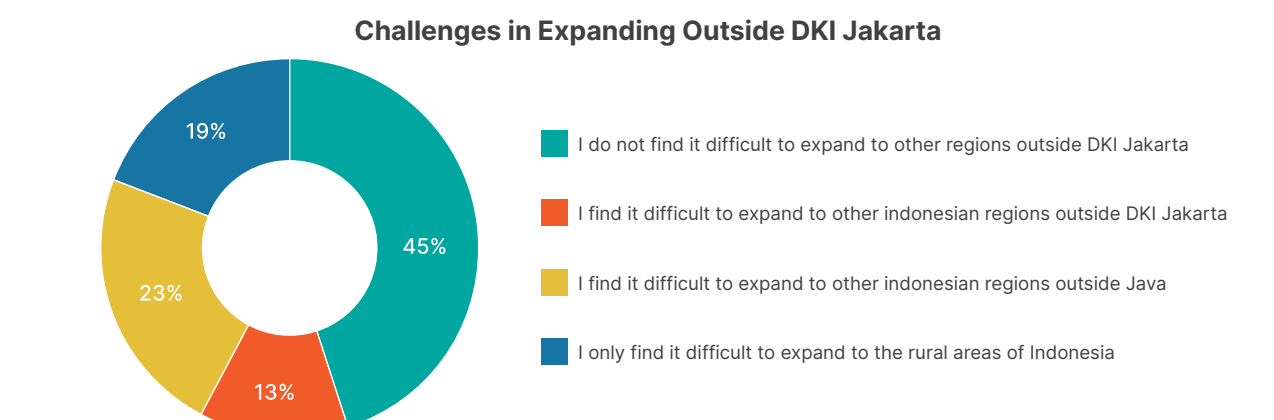


A collaboration with financial services such as banks provides Fintech companies with a stable client base, access to capital, know-how, and a stamp of trust. Financial services such as banks, on the other hand, profit by ensuring a seamless digital customer experience and the integration of new technology.

The high willingness of Fintech players to collaborate across relevant stakeholders within the industry, including players in the Fintech industry and other industries such as e-commerce, banking, data providers, and regulators, indicates the importance of collaboration to support future growth for the industry.

I. Overview of Challenges Faced in Indonesia Fintech Industry

Figure 5.27: Key Challenges Outside DKI Jakarta

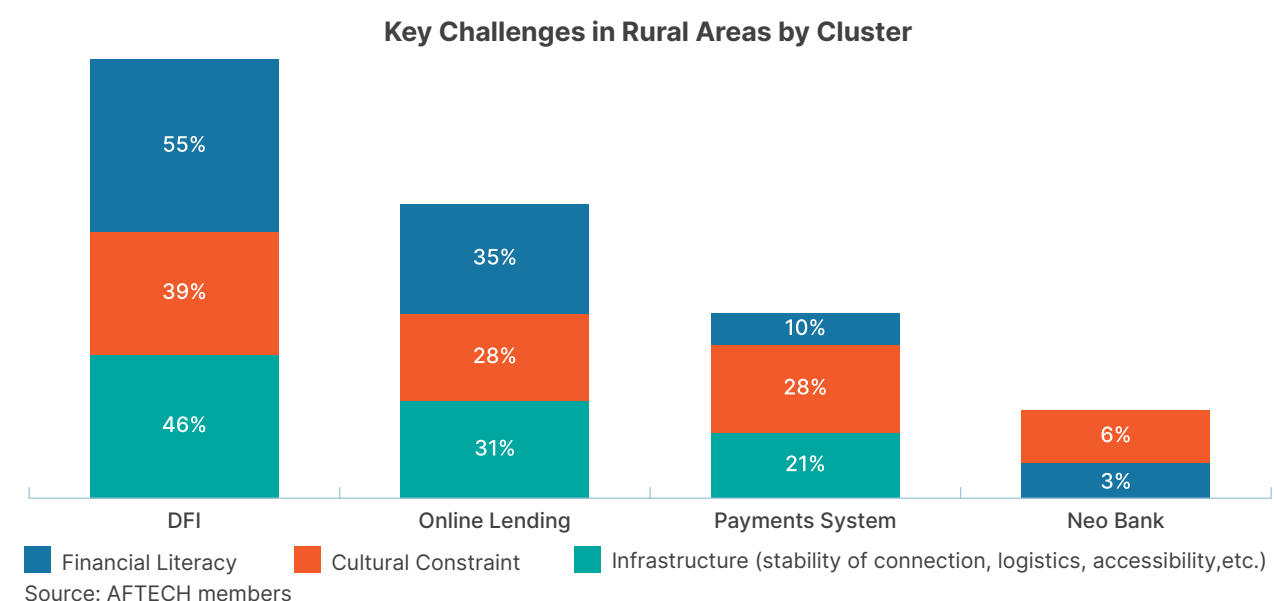


Source: AFTECH members

When asked about difficulties in expanding to other markets, 55% of respondents expressed that there are challenges to expand to outside the Capital; of which, 23% and 19% find it difficult to expand outside Java and to rural areas respectively. There are three (3) major concerns on the challenges:

1. Financial Literacy (55%)
2. Infrastructure (44%)
3. Cultural Constraints (20%)

Figure 5.28: Key Challenges in Rural Areas



Source: AFTECH members



6. INVESTMENT IN FINTECH

Increased adoption and proliferation of fintech have been well-documented to be associated with positive impacts on different aspects of the economy. In Q2 2021, Fintech companies in the Asia Pacific have attracted USD 7.5 Bn in funding across 467 deals, which reflects a 35% YoY increase. The increase in funding is mostly captured by Southeast Asia, which has been granted 44% of the funding amount.

Indonesia's Fintech sector is poised for growth, capturing USD 904 Mn from the first to the third quarter of 2021. When compared with the total foreign and domestic investment amount of other industries in Indonesia, the investment in Indonesia's Fintech sector during the first to the third quarter of 2021 is already higher by 58% compared machinery and electronics sector, and 157% higher if compared to textile sector investment in Indonesia³³.

The investment in the Indonesia Fintech industry shows an increasing trend, with the amount of investment pre-covid increased by 28%, from USD 250 Mn in 2018 to IDR 291 Mn in 2019. Very strong rebound also happened in Q3 2021 with USD 904 Mn amount of investment, surpassing total funding in 2020 by 220% and making up almost 26% of total funding in ASEAN-6's Fintech sector (the rest being Singapore, Malaysia, Thailand, Philippines, Vietnam) with early-stage startups (Series A and B) raised the largest rounds in Q2 2021³⁴.

The majority of Fintech companies in Indonesia require funding to expand their business. As for the source of funds, both foreign and local investor contributes significantly to the

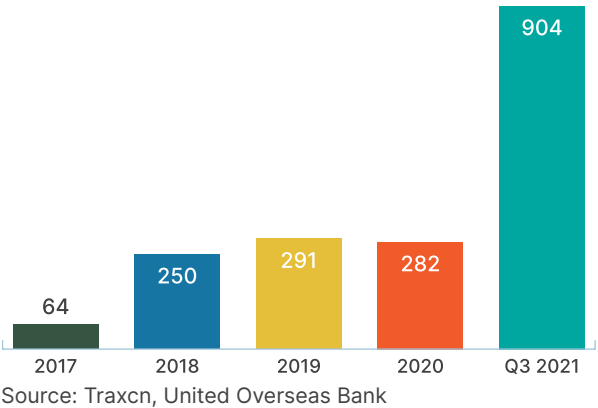
investment in the Fintech sector with foreign investors leading in terms of funding. Venture capital investment is the preferred source of funds in Indonesia. Despite COVID-19, Indonesia Fintech companies have demonstrated high resilience and continued to attract significant funding. Several mega-rounds of over USD 100 Mn are obtained since late 2019, with some Fintech companies evolving as Unicorns, accumulating three (3) Indonesia unicorns under the Fintech sector in Q4 2021.

A major portion of Fintech players expressed a positive outlook regarding the regulation improvement for ease of obtaining investment in the last 1-2 year(s). However, strong support from Indonesia Government is still needed particularly in regulation relaxation and incentives.

A. Total investment

Figure 6.1: Investment in Indonesian Fintech in 2017 – Q3 2021

Total funding for Indonesia Fintech in 2017 - Q3 2021 (in USD Mn)



³³ Indonesia Investment Coordinating Board. 2021. Investasi Langsung Luar Negeri. Web. <https://www.bkpm.go.id/statistik/investasi-langsung-luar-negeri-fdi>
Investing.com. 2021. USD/IDR Historical Data. Web. <https://www.investing.com/currencies/usd-idr-historical-data> (average IDR/ USD from Q1-Q3 2021 = 14,301)
³⁴ Singapore Fintech Association. 2021. Fintech in ASEAN 2021: Digital Takes Flight. <https://www.uobgroup.com/techecosystem/pdf/Fintech-in-asean-2021.pdf>

This investment trend aligns with overall ASEAN countries, in which total funding increased in 2021. According to United Overseas Bank ("UOB") and Singapore Fintech Association ("SFA") in Fintech in ASEAN 2021 Report, investment in the ASEAN Fintech sector has tripled in Q3 2021 to USD 3.5 Bn compared to USD 1.1 Bn in 2020.

Compared to the ASEAN where Digital Payments remained the most funded Fintech category, investment tech in Indonesia has also been gaining traction in terms of investment. According to Traxcn, in Q2 2021, investment tech in Indonesia has gained USD 213 Mn of funding, or 43% of total funding in Q2 2021³⁵.

In 2021, there are two (2) Fintech companies that rise as unicorns and have become part of 8 unicorns that are present in Indonesia.

In general, the transactions contributed by the Fintech sector, continue to grow at a moderate pace in Indonesia. 52% of 83 respondents within the Fintech industry are having a positive outlook that growth in demand due to the COVID-19 pandemic will be sustained over a longer period.

B. Deal Stage

In SFA Fintech in ASEAN 2021 Report, two markets in ASEAN are consistently referenced as the growth drivers of Fintech across ASEAN. Singapore for its developed and mature financial system and Fintech scene and Indonesia for the massive market size and huge unbanked/ underbanked population³⁶.

Figure 6.2: Top funded Fintech firms in 2021

Country	Company	Round Name	Primary Category	Funding Amount (USD Mn)
Singapore	Grab Financial Group	Series A	Payments	300
Vietnam	VNPAY	Series B	Payments	250
Singapore	NIUM	Series D	Payments	200
Philippines	GCash	Series D	Payments	175
Philippines	Voyager Innovations	Series E	Payments	167
Indonesia	Ajaib	Series B	Mutual Fund Agent	153
Indonesia	Xendit	Series C	Payments	150
Thailand	Ascend Money	Series C	Payments	150
Singapore	M-DAQ	Series D	Wealth Tech	147
Singapore	FinAccel	Series C	Online Lending	125

Source: Traxcn³⁷

³⁵ Traxcn. 2021. Fintech Market Report. <https://tracxn.com/d/reports-bm/Fintech-market-report>
³⁶ Singapore Fintech Association. 2021. Fintech in ASEAN 2021: Digital Takes Flight. <https://www.uobgroup.com/techecosystem/pdf/Fintech-in-asean-2021.pdf>
³⁷ Traxcn. 2021. Fintech Growing Fast in SEA. <https://fintechnews.sg/4370/studies/tracxn-report-fintech-growing-fast-sea-payments-investment-tech-top-two-funded-segments/>

Figure 6.3: Top funded Fintech firms in 2020

Country	Company	Round Name	Primary Category	Funding Amount (USD Mn)
Singapore	Voyager Innovations	Series D	Payments	120
Vietnam	LinkAja	Series B	Payments	100
Singapore	SYNQA	Series C	Payments	80
Philippines	Boost	Series C	Payments	70
Philippines	Thunes	Series B	Payments	60
Indonesia	PasarPolis	Series B	InsurTech	54
Indonesia	Payfazz	Series B	Payments	53
Thailand	Funding Societies	Series C	Payments	40
Singapore	Lightnet	Series A	Online Lending	31
Singapore	Bitwell	Series B	Cryptocurrency	30

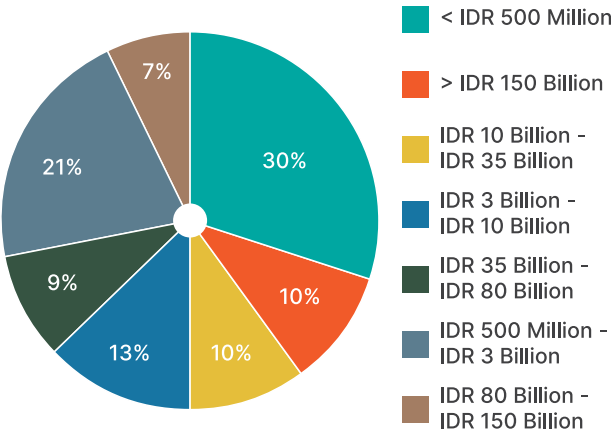
Source: Traxcn³⁸

Indonesia continues to attract big investment to the country, reflecting the positive outlook of investors. In 2021, there is higher investor interest in late-stage funding compared to the previous year. This may suggest that investors are investing in Fintech companies that are considered more ‘mature’, following economic concerns from the COVID-19 pandemic, although the economy is slowly recovering.

Of the top 10 funded companies in 2021, eight (8) firms are unicorns with two (2) startups contributed from Indonesia.

Figure 6.4: Deal share for Indonesian Fintech sector in July 2020 - June 2021

Deal Share for ID Fintech in July 2020 - June 2021



Source : AFTECH members

As the big theme of this year's survey is regarding the investment landscape, a large percentage of Fintech companies (30%) obtained <IDR 500 Mn financing from July 2020 until June 2021, followed by 21% of Fintech companies that received IDR 500 Mn – 3 Bn funding in the same timeline. For leading players, 45% have received financing of IDR 500 Mn- 3 Bn, while 33% have obtained >IDR 150 Bn funding, which is aligned as their presence is considerably higher.

³⁸ Traxcn. 2021. Fintech Growing Fast in SEA. <https://fintechnews.sg/4370/studies/traxcn-report-fintech-growing-fast-sea-payments-investment-tech-top-two-funded-segments/>

Historically, the Indonesia Fintech industry has grown tremendously from only 7 seed deals totaling USD 3.29 Mn and 5 early-stage deals (series A-B) amounting to USD 5 Mn in 2016 to 282 Mn total funding in 2020 with series A and B being the dominant deal stages³⁹.

By the number of deals, the most active investors in the Fintech sector in ASEAN are as follow:

C. Source of Fund

By the number of deals, the most active investors in the Fintech sector in ASEAN are as follow:

Figure 6.5: Active investors for Fintech sector in ASEAN

Active Fintech Investors (Including VC, PE, and Institutions)			
Investor	HQ Location	Number of Deals	Selected Portfolio Companies
Y Combinator	United States	14	Ajaib, Gotrade, NextPay, Vui app, Xendit
1982 Ventures	Singapore	9	Hugo, NextPay, Wagely
East Ventures	Japan	9	Bibit, Fuse, Qapita
AC Ventures	Indonesia	8	Alami Sharia, Bibit, Durianpay, OY!
AU21 Capital	United States	7	Coin98, Lever Network, Pandora
Insignia Ventures Partners	Singapore	7	Ajaib, CrediBook, Honest Bank, Lifepal, Tonik
Saison Capital	Singapore	6	BukuKas, NextPay, OY!, TazaPay
Golden Gate Ventures	Singapore	6	Alami Sharia, Fuse, NextPay, Vui app
SoftBank Ventures Asia	South Korea	6	Ajaib, Endowus, OY!
500 Global	United States	5	Bibit, CYBAVO
MDI Ventures	Indonesia	5	Amartha, Cermati, FinAccel, OY!

Source: Singapore Fintech Association, United Overseas Bank⁴⁰

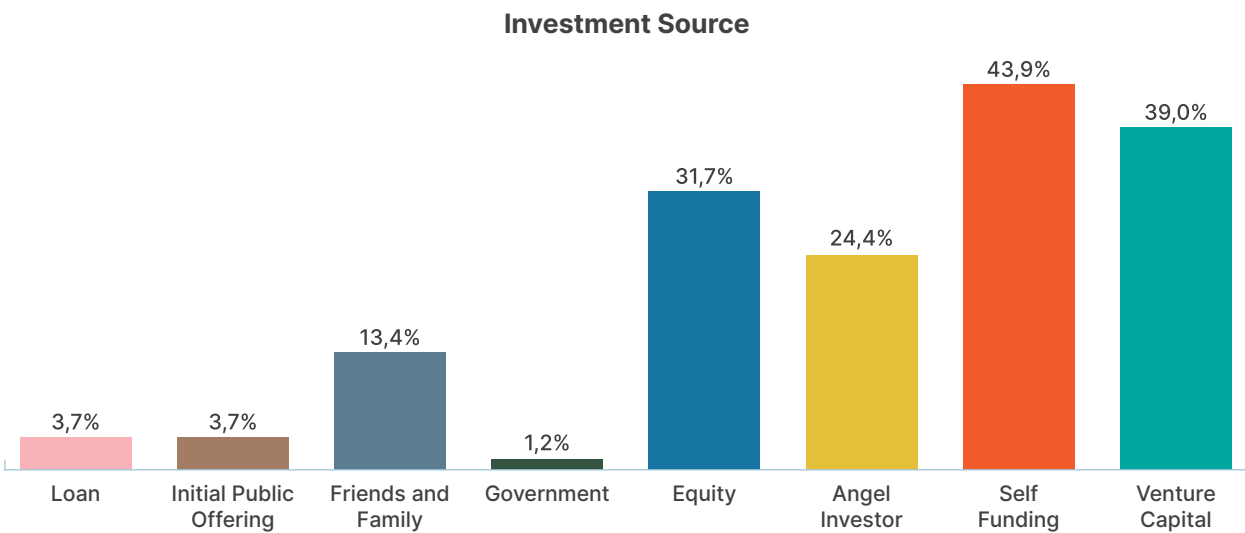
Singapore and United States remained the most active investors for Fintech in ASEAN, with venture capital as the dominant source of funding. In addition to that, two (2) venture capitals from Indonesia also contributed as the most active investors out of the top 10 most active investors in ASEAN.

Looking specifically to Indonesia, 49% of 84 respondents have expressed their plan to increase funding in the next 1 year. Related to the investment provider, 44% of the 82 respondents that answered claimed to have self-funding their capital needs. The second-largest proportion of the investment sources comes from venture capital being 39% of the total 82 respondents.

³⁹ Singapore Fintech Association. 2021. Fintech in ASEAN 2021: Digital Takes Flight. <https://www.uobgroup.com/techecosystem/pdf/Fintech-in-asean-2021.pdf>

⁴⁰ Singapore Fintech Association. 2021. Fintech in ASEAN 2021: Digital Takes Flight. <https://www.uobgroup.com/techecosystem/pdf/Fintech-in-asean-2021.pdf>

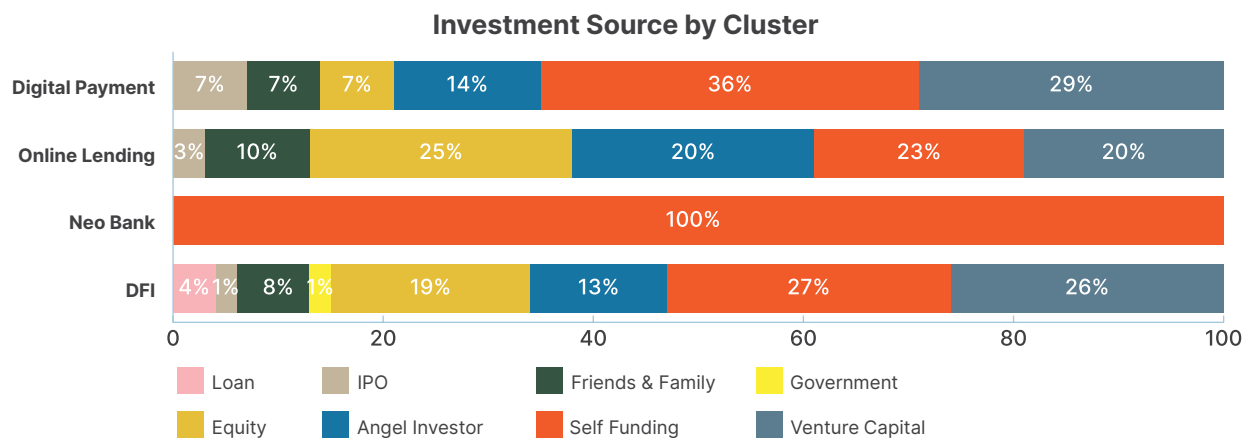
Figure 6.6: Source of Fund by type of fund provider for Indonesia Fintech, 2020



Source: AFTECH members

After segregating based on Fintech clusters, the survey proves that the self-funding type is still the highlight amongst clusters and sub-clusters, where 36% for Digital Payment, 23% for Online Lending, 100% for Neobank, and 27% for DFI clusters are self-funded.

Figure 6.7: Investment Source by Cluster in Q2 2021



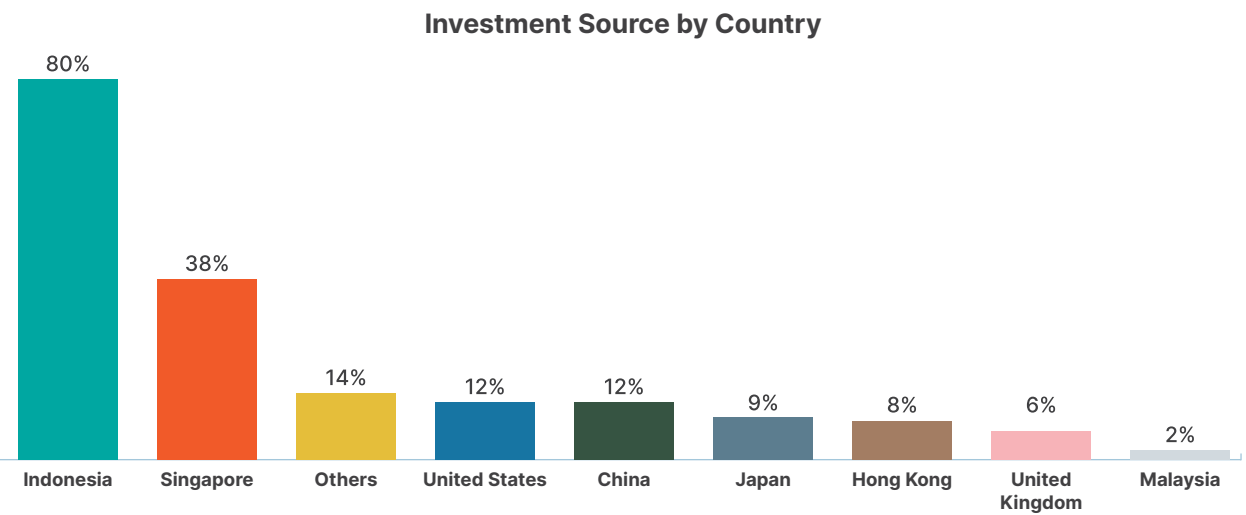
Sumber: anggota AFTECH

The survey also asked where the investment come from in terms of countries for Indonesia's Fintech sector, where 85 of the respondents answer this question.

Currently, the survey has identified that source of funds is from both local and foreign investors, with domestic as the major source of investors (80%). For foreign sources of funds, the source

of investment by country is aligned with the general trend in ASEAN. Singapore (38%) contributes the most to Indonesia Fintech companies' funding, followed by the United States (12%), China (12%), and Japan (9%). The "other" option indicated several countries across Asia and Europe, such as India, Korea, Italy, and Germany.

Figure 6.8: Investment by Country in Q2 2021



Source: AFTECH members

Globally, venture capital investment in Fintech reached USD 52.3 Bn in Q2 2021, more than two times the investment in Q2 2020 which is USD 22.5 Bn⁴¹. This trend aligns with Indonesia, in which investment companies (e.g., Venture Capital and Private Equity) dominate the funding landscape for the Fintech sector, funding 23% of total investment.

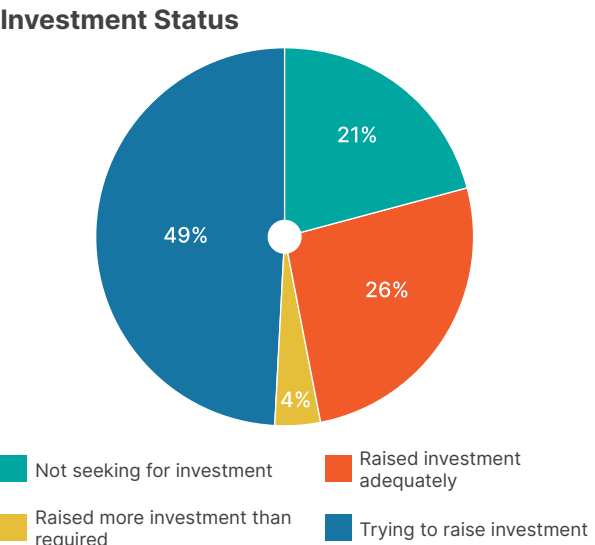
With the source of funds still dominated by self-funding and venture capital, the future of investment might have similar trends in the Fintech industry. Venture capital funding will be a popular type of funding not only in Indonesia but also globally as the number of investments increases significantly.

D. Financing Cases by Fintech Verticals

The AMS 2021 report identifies the current state of the Fintech players in terms of the needs for capital or investment in the companies. Generally, 49% of Fintech companies plan to raise funding in the next 1-2 year(s), while 26% of the respondents claimed to have raised enough investment.



Figure 6.9: Percentage of Fintech companies that plan to raise funding in the next 1-2 year (s)

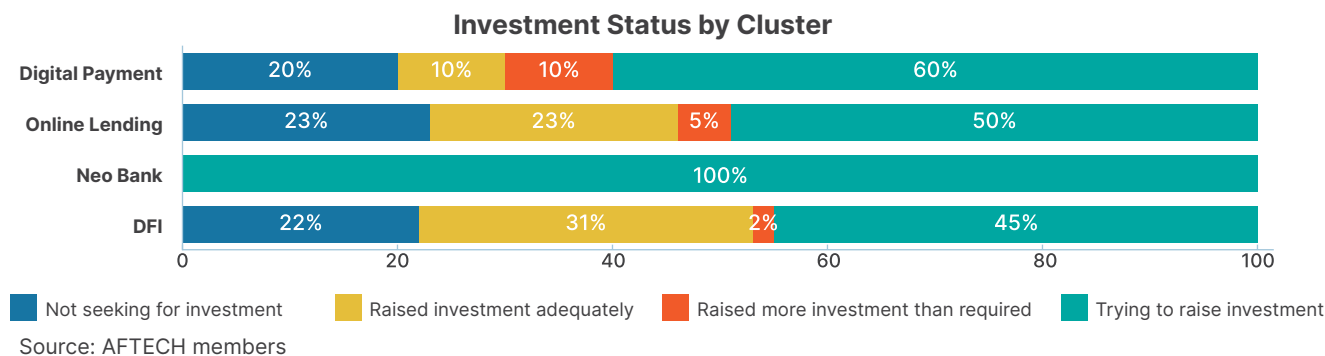


Source: AFTECH members

⁴¹ KPMG. 2021. Record-breaking VC investment in Fintech in first half of 2021. <https://home.kpmg/xx/en/home/media/press-releases/2021/08/record-breaking-vc-investment-in-fintech-in-first-half-of-2021.html>

Carrying on from the previous respondents, the survey looked at the result from the clusters' perspective in order to identify the recognizable proportion amongst the current investment status. A large proportion in the clusters, Digital Payment (60%), Online Lending (50%), Neobank (100%), and DFI (45%), claimed they are still seeking more investment. However, a larger proportion of Digital Payment (10%) compared to other clusters, such as Online Lending (5%) and DFI (2%), believed that they raised enough capital for the business when the conducted survey is focused on running the business. Approximately 1 out of 5 Digital Payment, Online Lending, and DFI players claimed they are not looking for another investment fund for the next 1-2 years for their operations.

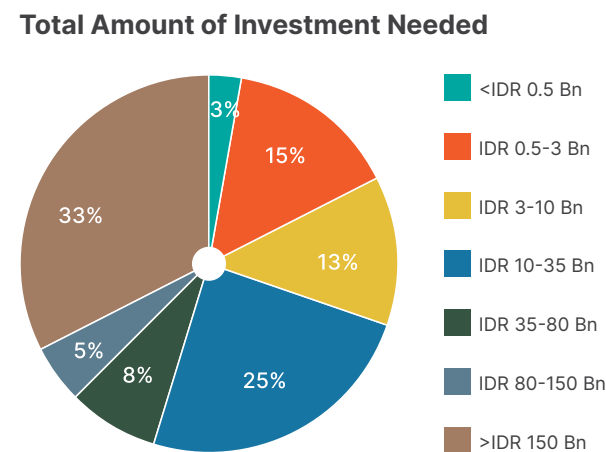
Figure 6.10: Percentage of Fintech companies that plan to raise funding in the next 1-2 year(s) by Business Model



Based on survey results, 33% of Fintech companies stated their plan to raise funding by more than 150 Bn in the next 1-2 year, while for leading players, 50% require more than IDR 150 Bn in the next 1 year. This suggests that a conducive Fintech ecosystem for ease of obtaining investment is becoming significant for the digital financial service industry.

When compared with the total investment raised in July 2020-June 2021, generally all Fintech from different clusters and years of establishment are requiring more investment than the amount they previously raised, which reflects that funding is becoming more crucial as the sector becomes more 'mature'.

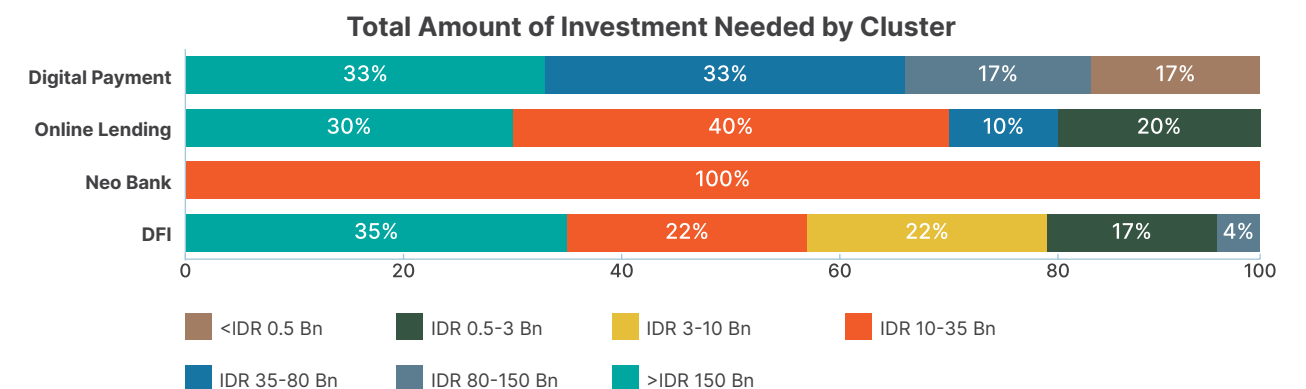
Figure 6.11: Amount of funding expected to be raised by Fintech companies in the next 1-2 year(s)



Extending from the amount of investment needed, the classification of Fintech players by clusters is conducted to investigate further. Currently, 1 out of 3 from cluster Digital Payment, Online Lending, and DFI still need more than IDR 150 Bn for the next 1-2 years. However, in the extreme, 17% of Digital Payment players believe that they only need less than IDR 500 Mn investment in the next 1-2 years. This suggests that Digital Payment is in the more mature stage compared to other clusters.



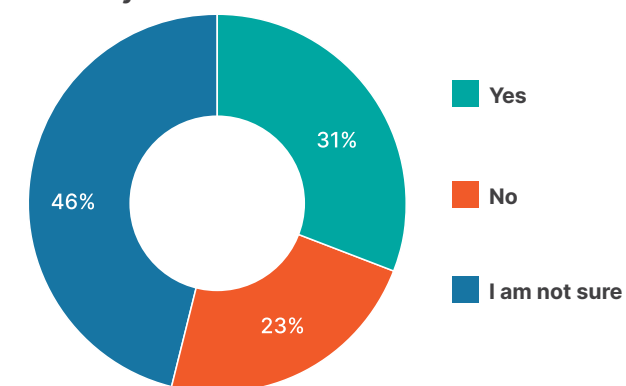
Figure 6.12: Amount of funding expected to be raised by Fintech companies in the next 1-2 year(s) by Business Model



Generally, 31% out of 80 respondents believe that the government has provided sufficient support for the Fintech industry, while 46% of the respondents claimed they are not sure about the question, reflecting there is still a debate about the outlook of Fintech players towards the Indonesian Government.

Figure 6.13: Views on Government Support Provided

Do you think in general Government has provided sufficient support for fintech industry?



When surveyed about the ease of obtaining investment from local investors, 41% of the respondents expressed that the ease of obtaining investment from local investors have improved in the last 1-2 year(s), while 48% of all respondents have a neutral stance on this.

Continuing from the perspective of ease of obtaining investment from local investors, the survey also asked about foreign investors. The respondents for this question have reduced by 1 respondent who did not answer, becoming 79 members of the total respondents. For the ease of obtaining investment from foreign investors, 34% and 54% have a positive and neutral view that the ease of getting investment has improved in the last 1-2 year(s). This reflected that majority of Fintech players have a positive outlook on the investment landscape.

Continuing from the Government support needed, AMS 2021 report digs deeper into what kind of support is needed by the Fintech players. Out of 79 respondents who answered the question, the majority of them being 78% of the respondents claimed they need regulation relaxation in the future. The second most answered on Government support is reflected in two aspects, availability of alternative supporting schemes (52%) and incentives for Fintech sectors (52%).

This report also further slices and dice based on the clusters in the Fintech industry. It can be seen that the online lending clusters have adequate funding already. However, this cluster shows the highest proportion (44%) that they need government support on regulatory relaxation, mainly due to the limitation on the customer loan amount that might limit their scalability. In contrast, DFI and Digital Payment clusters have different support needed across the players but have the highest proportion of regulatory relaxation.

Figure 6.14: Government Support Needed in Overall

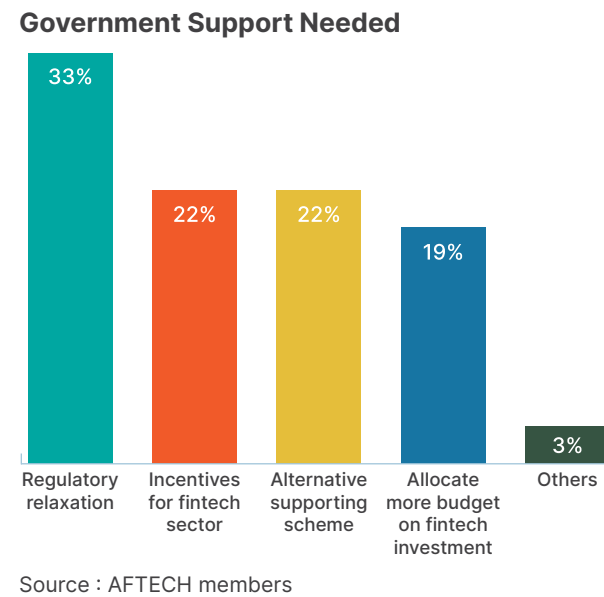
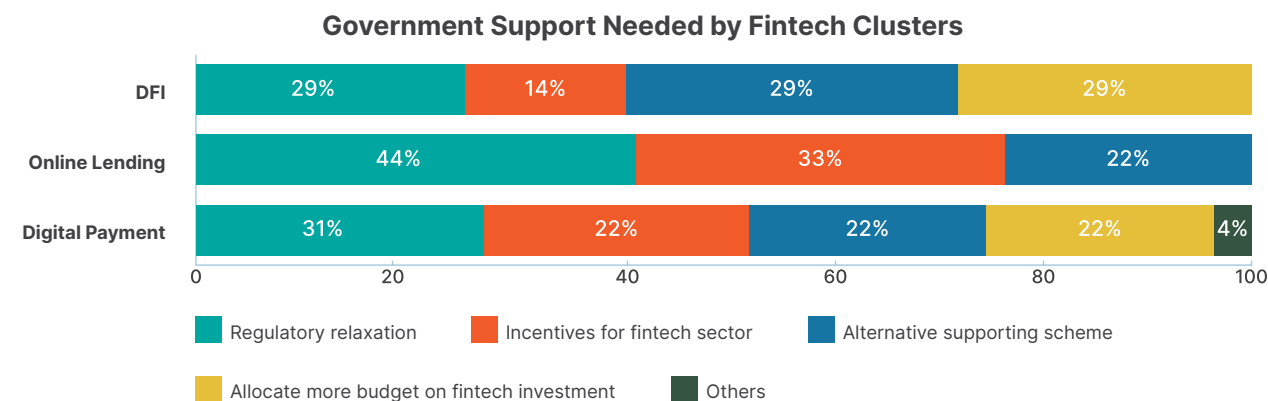


Figure 6.15: Government Support Needed by Business Model



Respondents from all business models or verticals agree that regulatory relaxation is the kind of support that is most crucial that can be given by the government for the development of the Fintech industry.

E. Impact of Investment in Fintech on Indonesia's Economy

The investment in Indonesia's Fintech sector has not only increased Indonesia's Gross Domestic Product through the amount of investment but also through its positive multiplier effects on other components of GDP:

1. Boosting transactions or consumptions, which are resulted through the increase in purchasing power as Fintech companies provide alternative financing and investment method, employment, as well as.
2. Greater tax income for Indonesia Government generated by investment in the Fintech industry and its multiplier effects.

Specifically, for employment, there are direct and indirect increases in the number of jobs because of the increasing presence of Fintech. The direct increase in the number of jobs is caused by Fintech companies' employment, while the indirect increase is due to competition and collaboration between Fintech companies and other financial services providers which have generated more hiring for in-demand skills. Another indirect increase in the number of jobs is driven by venture capital as well as private equity firms' new hires in regard to their digital and technology portfolio businesses.

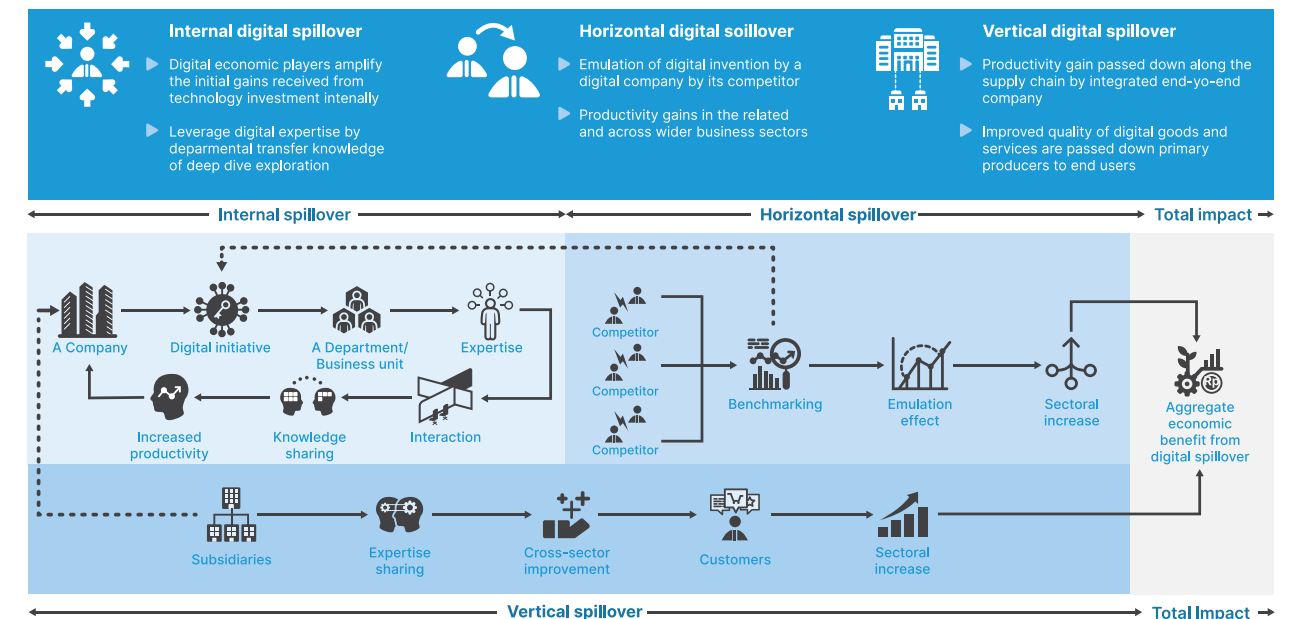
Cited from global recruitment specialist, Michael Page⁴², found that between Q2 and Q3 2021, Fintech has driven the number of jobs in Indonesia which are contributed by jobs in financial services (45%) such as banks, insurance, and other financial services provider, digital (14%), and technology (13%).

The finding also shows that the P2P lending cluster with a similar business model as banks has generated

growth for the financial services industry including banks, insurance, and pension fund. The growth is catalyzed by cooperation by Fintech and other financial services through escrow accounts, virtual accounts, payment methods, and credit channeling. Furthermore, some banks have also formed venture capitals as units to channel investment to Fintech companies. Continuous partnership development can create a positive contribution in the Fintech sector, due to the increment of value-add from services and different financial institutions in the market⁴³.

Additionally, according to Oxford Economics research⁴⁴, investment in digital technologies has provided a much higher return compared to investment in the non-technologies sector due to 'digital spillovers'- referring to indirect knowledge, innovation, and productivity acceleration from the technology effect. The impact of digital spillovers could be triggered by one digital initiative of an entity before it expands to a broader scale due to replication by competitors and other related entities.

Figure 6.16: Digital Spillovers by investments in the technology sector



⁴² Michael Page. 2021. Fintech the Main Driver of Financial Services Employment Up 45% in Q3 2021 from Q2: Michael Page Indonesia. Web. <https://www.michaelpage.co.id/about-us/media-releases/Fintech-main-driver-financial-services-employment-45-q3-2021-q2-michael-page>

⁴³ Indonesia Fintech Association, INDEF. 2019. Economic Impact Study for P2P Lending. <https://indef.or.id/source/research/Studi%20Dampak%20Fintech%20P2P%20Lending%20terhadap%20Perekonomian%20Nasional.pdf>

⁴⁴ Oxford Economics. 2017. Digital Spillover: Measuring the True Impact of Digital Economy. <https://www.oxfordeconomics.com/recent-releases/digital-spillover>

Fintech has massive potential to grow going forward. According to UBS, the global Fintech industry is currently at an inflection point, with revenues set to grow from USD 150 Bn in 2018 to USD 500 Bn in 2030, with the Asia Pacific continuing to lead the way⁴⁵.

Moreover, cited to Asian Development Bank, Fintech has great potential to support advancing sustained development and swift economic recovery from the COVID-19 pandemic. Therefore, a well-functioning regulatory and policy environment is needed to ensure ease of entry and participation for firms and customers⁴⁶.

Due to its contribution to the economy and promising growth, the Indonesia Fintech industry has attracted the attention of many big investors, including the ones from overseas. Unfortunately, current figures of Foreign Direct Investment (“FDI”) do not show the actual amount, as there is a limitation to the FDI’s official figures. This is caused by the recording method, which excludes investments in intangible assets and/or in financial markets. In Indonesia, two government agencies compile these figures, namely the Ministry of Investment / Indonesian Investment Coordinating Board (“MoInvestment/BKPM”) and Central Bank of Indonesia (“BI”). The two mentioned Government Institution applies different methodology in data compilation hence they could not be directly compared to one another⁴⁷.

Figure 6.17: Calculation of FDI by Indonesian Government Agencies

	MolInvestment-BKPM	BI
Definition of FDI	The sum of realized investments as reported by companies to MolInvestment-BKPM every quarter	The net flow of equity, reinvested earning flow and other capital flows to the country
Percentage of Ownership Recognized	Any percentage	10 percent or more
Sectors Covered	All sectors except financial markets, upstream oil and gas, and SMEs	All sectors
Stream	Direct investment, does not account for investment through third countries	Direct investment, does not account for investment through third countries

Source: MolInvestment-BKPM BI⁴⁸

Furthermore, besides the dollars invested, FDI that enters the Fintech sector also brings advanced technology, superior management practices, and assured markets⁴⁹. It improves access to international markets through participation in global value chains. As FDI increases competition, resources are reallocated to a more productive firm and a country’s aggregate productivity consequently increases in the long run.

⁴⁵ Finextra. 2020. Fintech revenues to hit \$500bn by 2030 – UBS. <https://www.finextra.com/newsarticle/35789/Fintech-revenues-to-hit-500bn-by-2030---ubs>

⁴⁶ Asian Development Bank. 2021. Fintech to Enable Development, Investment, Financial Inclusion, and Sustainability. Web. <https://www.adb.org/sites/default/files/publication/704236/Fintech-development-conference-highlights.pdf>

⁴⁷ American Chamber Indonesia, EY Analysis. 2019. US-Indonesia Investment Report 2019: Making an Impact. https://www.amcham.or.id/viewer/web/viewer.html?file=https://www.amcham.or.id/file_upload/2019_Investment_Report_-_Making_an_Impact_5dd4ce2bed564.pdf

⁴⁸ American Chamber Indonesia, EY Analysis. 2019. US-Indonesia Investment Report 2019: Making an Impact. https://www.amcham.or.id/viewer/web/viewer.html?file=https://www.amcham.or.id/file_upload/2019_Investment_Report_-_Making_an_Impact_5dd4ce2bed564.pdf

⁴⁹ Jusoh, S., S. Hamanaka, I. Ramli, dan D. Narjoko, 2019. “Towards a Strong Services Sector and an Open Investment Environment in ASEAN,” di Intal, P. dan M. Pangestu, Integrated and Connected Seamless ASEAN Economic Community, Jakarta, ERIA, hlm. 96–126.



7. REGULATORY OUTLOOK

The presence of regulation will drive business players and customers in the Fintech Industry to obtain mutual and yet beneficial relationships to ensure conduciveness in the overall market. Organization for Economic Cooperation and Development (OECD) has found that Government behaviour towards an industry in terms of regulatory development is often perceived as a signal parameter. Therefore, companies and customers will perceive the potential growth of an industry based on numerous factors, including the regulation adequacy developed for the particular industry.

The AFTECH AMS 2021 result shows that the current regulatory framework in Indonesia is conducive enough for innovation and investment in the Fintech industry. However, an increase in Government support is expected to unlock a more significant potential in the future growth of the Fintech industry. These findings were justified by the survey result, which shows that approximately 9% of respondents face difficulties in innovation, while 7% of the respondents struggle in complying with government regulations.

This section will further discuss the survey regarding Fintech players in Indonesia on how they perceive Government regulation. There will be a discussion specifically on the perspective of Fintech players regarding the current regulation and the challenges faced in complying with the rules. Additionally, this section will elaborate on the prospects of the Indonesian rules and what is needed by Fintech players to create added value.

A. Perception of Current Regulatory Framework

Based on survey results, 48% of the respondents 'somewhat agree' that the current government regulation is conducive to investment and 53% of the respondents 'somewhat agree' that it was conducive to innovation. This is also supported by 50% of the leading players who claimed that they somewhat agree that regulation on investment and innovation is conducive enough for the Fintech industry. Furthermore, about 18% of respondents expressed "strongly agree" that the current regulatory framework supports innovation.

Figure 7.1: Current Regulatory Framework for Innovation

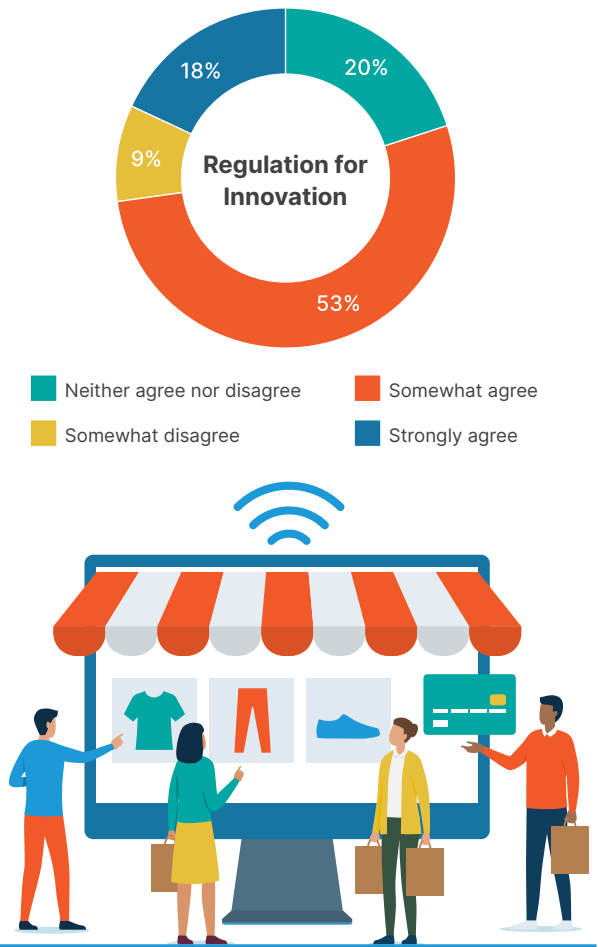
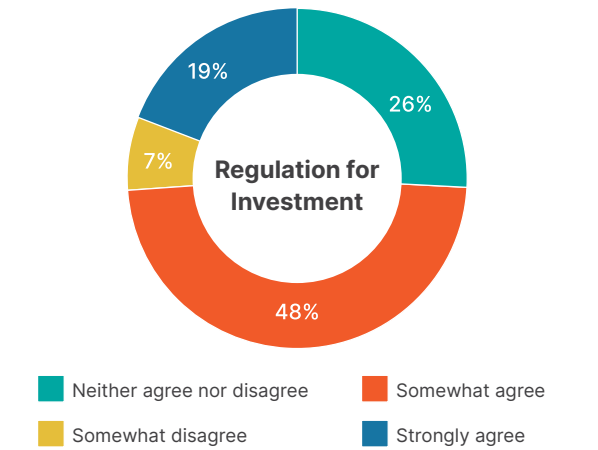


Figure 7.2: Current Regulatory Framework for Investment



Approximately 91% of respondents claimed that the Government could improve its support of the Fintech industry. FThe three top aspects that need further support are namely:

- i. Enhance education and literacy (71%)
- ii. Less restriction (70%)
- iii. Financial support (63%)

There are comparisons between perspectives from DFI players vs Non-DFI players in terms of main support expected by respondents in improving the Fintech industry, with the following details:

B. Challenges in Regulatory Compliance

	All respondents	DFI	Non-DFI
Financial support	63%	56%	76%
Less restriction	70%	64%	79%
Enhance education / literacy	71%	62%	86%
Other	4%	4%	3%

The survey result shows that there are several main challenges in maintaining compliance with regulations in Indonesia, which are:

- I. Data privacy and security (70%)
- II. Regulation clarity (61%)
- III. Infrastructure (52%)
- IV. Cybersecurity (49%)
- V. E-KYC (49%)



Figure 7.3A: The Key Policy that is Expected to be Improved in the future

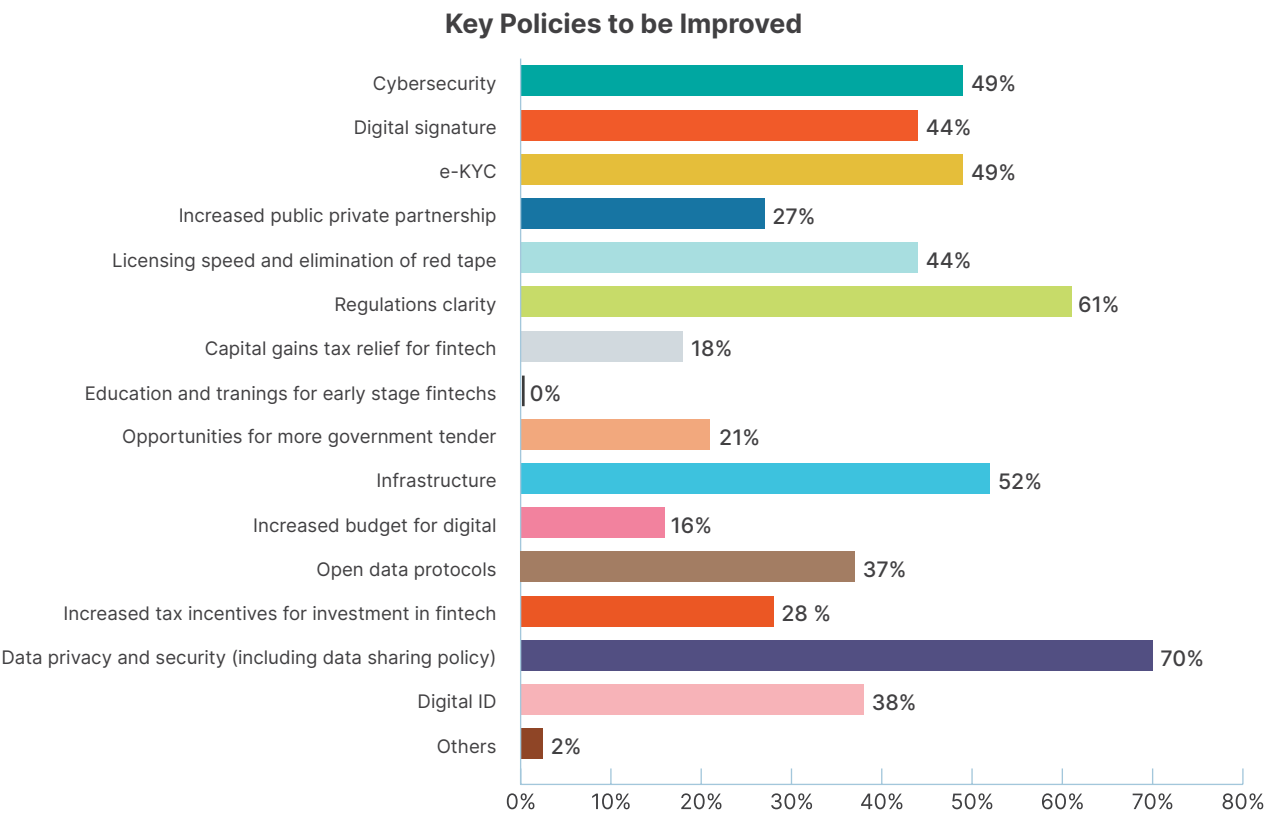


Figure 7.3B: The Future of Regulatory Framework for Fintech in Indonesia

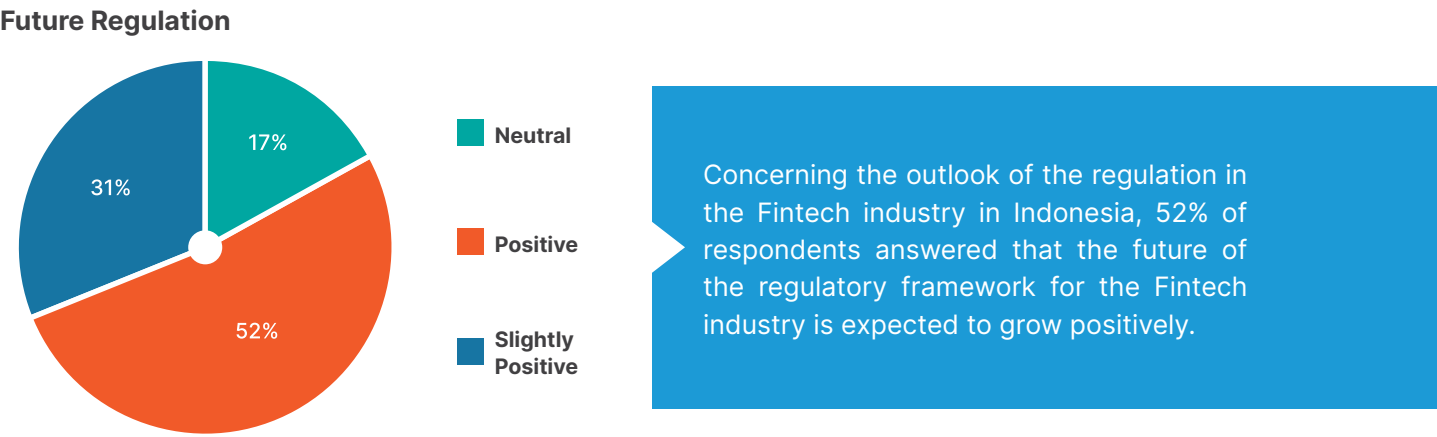


Figure 7.4: List of Relevant Government Regulations and Initiatives by Fintech Clusters

Cluster	Regulation/ Initiative	Issuer	Remarks
Online Lending	POJK 77/OJK.01/2016 on IT-based Lending Services	OJK	Purpose: To develop an online lending cluster by setting the requirements for online lending companies. Highlight: To define the form of entity, minimum capital requirements, the prohibition against directly providing or receiving loans, maximum loan granted, and a mandatory sandbox period for new entrants.

Cluster	Regulation/ Initiative	Issuer	Remarks
Digital Payment	PBI No. 18/40/PBI/2016 on Processing Payment Transaction	Central Bank of Indonesia	Purpose: To regulate payment gateway and digital payment services. Highlight: Licensing and Central Bank of Indonesia's approval requirement, obligations, and limitations of digital payment providers.
	PBI No. 19/12/PBI/2017 on Financial Technology	Central Bank of Indonesia	Purpose: To enhance the regulation of financial technology, including digital payment. Highlight: Definition of financial technology, regulatory sandbox requirement, licensing and monitoring of Fintech companies, limitations, and penalties.
	PBI No. 20/6/PBI/2018 on Electronic Money	Central Bank of Indonesia	Purpose: To ensure a more secured electronic money transactions. Highlight: updates on licensing requirements for e-money providers, floating fund requirements.
	PBI No. 22/23/PBI/2020 on Payment Systems	Central Bank of Indonesia	Purpose: To set a new standard for companies that provide payment services and infrastructure for such services, as well as increases their governance risk compliance criteria. Highlight: The concept of service providers and infrastructure providers, licensing that corresponds to the type of products/ functions provided, foreign shareholding limitation, and control.
	Indonesia Payment System Blueprint 2025	Central Bank of Indonesia	Purpose: To (i) Support the integration of the national digital economy and finance; (ii) Support banking digitalization; (iii) Guarantee the interlink between Fintech and banking; (iv) Ensure there is a balance between innovation, consumer protection, and healthy business competition; and (v) Safeguard national interests in cross-border digital economy and finance. Highlight: The Blueprint covers five initiatives to achieve the 2025 vision: (i) Open banking, (ii) Retail payment system, (iii) Market infrastructure, (iv) Data and (v) Regulatory, licensing, and supervision. The five initiatives will be implemented in parallel by five working groups under BI.
	POJK No. 4 of 2021 on The Application of Risk Management in the Use of Information Technology by Non-bank Financial Institution	OJK	Purpose: To regulate the non-bank financial institution for implementing risk management in information technology. Highlight: The detailed non-bank financial institution types and detailed risk management and corporate governance minimum requirement.

Cluster	Regulation/ Initiative	Issuer	Remarks
Equity Crowdfunding	POJK No. 16 of 2021 on Equity / Securities Crowdfunding	OJK	Purpose: To update or changes from POJK No. 57 of 2020 on Equity / Securities Crowdfunding. Highlight: <ul style="list-style-type: none"> - Removal of Article 6: The companies which are in equity crowdfunding must be registered as electronic system providers in the Ministry of Communications and Informatics RI (Kominfo). - Removal of Article 13 Part 1 (e): photocopy of proof of registration in Kominfo. - Addition of Article 15A between Article 15 and 16: the provider which already obtained the OJK license must be registered as an electronic system provider in Kominfo and prohibited to offer exchange before submitting the registration proof to OJK unless the provider already accepts the license that shows business activity expansion from equity crowdfunding and provider who already do equity in form of securities crowdfunding. - Changes to Article 85: additional Article 15 A verses (1) and (2).
	POJK No. 57 of 2020 on Equity / Securities Crowdfunding	OJK	Purpose: To broaden the scope of POJK No. 37 of 2018 on Equity / Securities Crowdfunding. Highlight: The minimum requirement on the permit, business activities, capital needs, and human resource qualification, as well as the restrictions and reporting that, should be complied with by the companies.
Digital Bank	POJK No.13/ POJK.03/2021 2021 on General Bank Products	OJK	Purpose: To improve the process of providing banking products through faster planning and approval procedures while prioritizing risk management. Highlight: Groups bank products into primary and extended products, whereby extended products include IT-based banking products which cover (but are not limited to) electronic banking, digital banking, and neobanks.
	POJK No.12/ POJK.03/2021 on General Banks	OJK	Purpose: To adjust regulations with the dynamic global financial industry and to accelerate digital banking transformations. Highlight: <ul style="list-style-type: none"> - Sets out that even fully digital banks are still required to have one physical Head Office. - Defines Digital Banks as either new banks set up digital from the start or existing banks transforming digitally. - Defines regulations and requirements specific for Digital Banks including, but not limited to, risk management, customer data protection, and contribution to financial inclusion.
	POJK No.12/ POJK.03/2018 on Digital Banking Services by General Banks	OJK	Purpose: To regulate digital banking services as a way to increase access to financial services. Highlight: <ul style="list-style-type: none"> - Banks offering digital banking services must set up a dedicated unit for this service, which is responsible for implementing standards, allocation of resources, ensuring compliance and effectiveness, and so forth. - Control and regulate customer verifications needed for digital banking services. - Set out requirements and processes for a bank in conducting digital services.

Cluster	Regulation/ Initiative	Issuer	Remarks
Wealth Management	POJK No.3/ POJK.4/2021 on Activities in the Capital Market	OJK	Purpose: To create a capital market that is organized, fair, and efficient. Highlight: <ul style="list-style-type: none"> - States the requirements and responsibilities for the stock exchange, mutual funds, <i>Perusahaan efek</i>, and other parties in the capital market. - Establishes the needs and roles of investment advisors and investment managers.
	POJK Regulation No. 39/POJK.04/2014 concerning Mutual Fund Securities Selling Agents	OJK	Purpose: To develop the mutual fund industry by expanding the distribution channels of mutual fund sales, increasing the domestic investor base, and increasing the capacity building of Mutual Fund Selling Agents. Highlight: <ul style="list-style-type: none"> - In this regulation, an opportunity is opened for Parties other than Banks to become Selling Agents. - Mutual Fund Selling Agents (APERD) to provide wider opportunities in marketing Mutual Funds to potential investors. - APERD to potential investors will increase the number of Mutual Funds managed funds and broaden the investor base. - These parties includes Securities Companies, companies that carry out business activities in the post and demand deposits, pawnshops, insurance companies, financing companies, pension funds, and guarantee companies as well as Securities Companies specifically established to market Mutual Funds.
Digital Financial Innovation (DFI)	POJK No. 13 of 2018 on Digital Financial Innovation	OJK	Purpose: To regulate the financial institutions that involve the digital ecosystem in their business process, business model, and financial instruments. Highlight: <ul style="list-style-type: none"> - Digital Financial Innovation. - States the types and criteria of Digital Financial Innovation (DFI). - Requirement for DFI companies to be recorded to OJK. - Regulatory Sandbox. - Regulate Regulatory Sandbox for trial and error before commercial roll-out. - Controlling, Reporting, and Corporate Governance for the business.
	OJK Circular Letter No. 20 of 2019 on Recordation Mechanism of Digital Financial Innovation (DFI)	OJK	Purpose: To regulate the implementation of the recordation mechanism of DFI. Highlight: A detailed process of before, during, and after recordation, as well as the controlling and reporting process.
	OJK Circular Letter No. 21 of 2019 on Regulatory Sandbox	OJK	Purpose: To regulate the implementation process of Regulatory Sandbox. Highlight: The detailed process of Regulatory Sandbox.
	OJK Circular Letter No. 22 of 2019 on Appointment of Association for Fintech under DFI category	OJK	Purpose: To appoint the Fintech Association in relation to DFI. Highlight: The detailed requirement for process, as well as role, authorities, and prohibition for the association regarding being selected by OJK.

Cluster	Regulation/ Initiative	Issuer	Remarks
General	POJK No. 6/ POJK.04/ 2021 on Guidelines for Anti-Money Laundering and Prevention of Terrorism Financing Program on Information Technology based Loan Service	OJK	Purpose: To avoid misconduct in online lending Fintech cluster. Highlight: Regulate the risk management required for anti-money laundering and terrorism funding, including general provision, risk management practice, monitoring responsibility, risk management organization and functions, risk management evaluation, and penalties.
	Draft on Personal Data Protection		Purpose: To regulate personal data processing in the Republic of Indonesia. When this Law comes into force, the party involved in Personal Data processing must adjust to the processing requirements of the Law. Highlight: <ul style="list-style-type: none"> - Explicit Consent is required from the data owner for personal data processing. - Responding timelines for Data subject rights have been separately called out in the bill. - The data controller will notify the data owner and the Minister within three days of a data breach. - Penalties for non-compliance may range from 20 Billion Rp to 70 Billion or Imprisonment ranging from 2 to 7 years.
	Draft Law on Cybersecurity		Purpose: To clearly define and delineate the roles, responsibilities, and authorities of relevant institutions in addressing cybersecurity threats.



8. GOOD CORPORATE GOVERNANCE

Starting from the global condition, the fintech industry is currently entering a new stage that requires well-defined governance control on both a macro and micro level. Aside from regulatory compliance, governing bodies/ministries such as Indonesia Financial Services Authorities (OJK), Central Bank of Indonesia (BI), and the Ministry of Informatics and Communication, fintech players are encouraged to implement good corporate governance through compliance with industry standards (including international standards) and ethic codes. All the effort is to increase consumer protection, increase community trust in the Fintech industry and empower competition in the Fintech industry.

This section highlights the importance of good governance from two major aspects, which are data protection and implementation of industry standards. Data protection has increased over time, with aspects revolving around data management, disaster recovery plans, cybersecurity, customer complaint handling, and customer protection becoming major considerations for OJK and BI. In addition to that, this section will also cover the international standards and regulations, as well as code-of-conduct or industry standard or industry standard.

Based on AMS 2021 survey, 37% of Fintech respondents have an in-house data center for their operations. The majority of the respondents claimed that they have registered their own data center with the Ministry of Communications

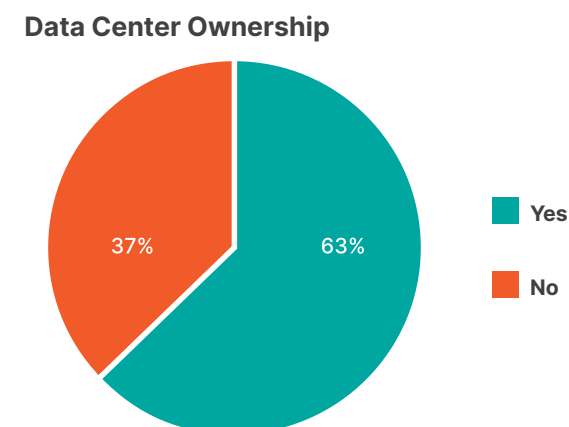
and Informatics RI (Kementerian Komunikasi dan Informatika Republik Indonesia, "Kominfo") licensed data center (96%) and additionally have a Disaster Recovery Plan/DRP (98%). In relation to cybersecurity, 30% of the respondents claimed that they have faced more than one system failure each month, while 4% of the respondent claimed that they have faced cyberattacks more than once per month.

According to the survey, the top three customer complaints are delays in transactions, bugs, and a long administration process for handling complaints. The respondents believed that the top three customer protection aspects, namely data privacy and security, reliability, and transparency, are crucial for business. The importance of customer protection has brought (13%) of respondents to conduct customer education or literacy programs more than 20 programs that revolve around the topic of data security and privacy.

In terms of complying with international standards, more than half of the respondents (61%) have implemented international standards, with the most popular standards used being ISO 27001 (Information Security Management) and General Data Protection Regulation (GDPR). Moreover, 80% of the respondents have implemented the industry's Code-of-Conduct. The increasing number of implementations for both aspects indicated the increasing intention of Fintech players to comply with good governance principles.

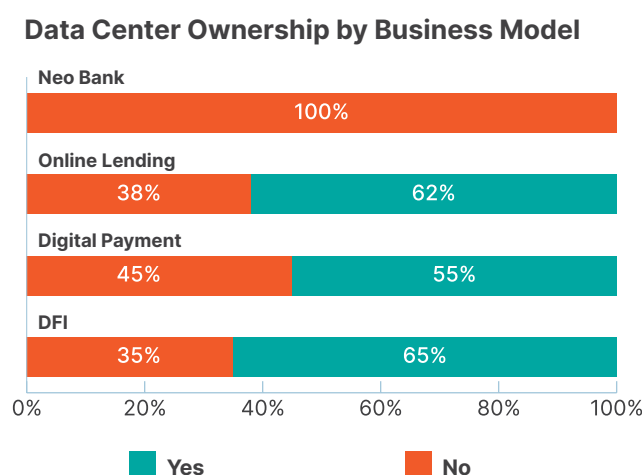
A. Data Management

Figure 8.1: Data Center Ownership



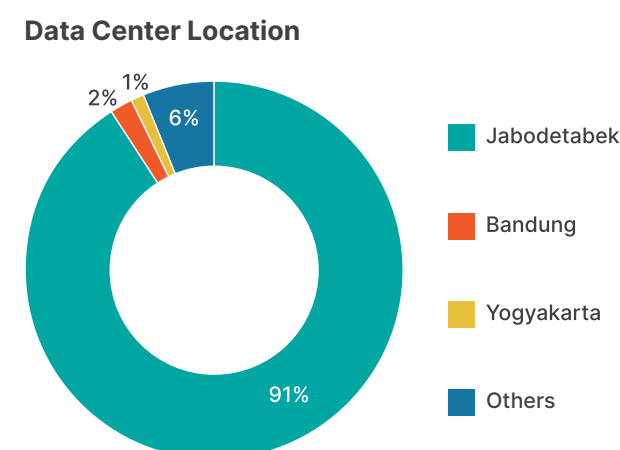
Source: AFTECH members

Figure 8.2: Data Center Ownership based on Fintech Business Model



Source: AFTECH members

Figure 8.3: Location of the Data Center



Source: AFTECH members

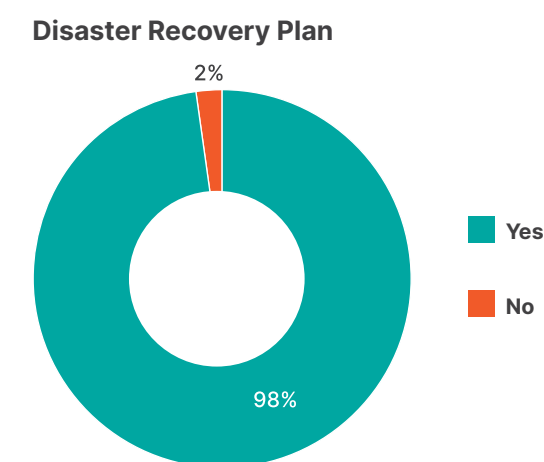
The AMS 2021 Survey shows that the majority of respondents (63%) use third-party data center services.

Out of 63% of respondents who used a third-party provider for their data center, approximately 91% are located in Jabodetabek. Similar trends are shown in respondents who have their own data center, where 81% are located in Jabodetabek. This survey result did not change compared to last year's figure.

B. Disaster Recovery Plan

A Disaster Recovery Plan is useful for ensuring that Fintech services are not disrupted when there is interference or downtime. The Government of Indonesia currently regulates the Disaster Recovery Plan under POJK Article 21 No. 38 of 2016 regarding the Implementation of Risk Management in IT by Commercial Banks and POJK Article 23 No. 4 of 2021 regarding the Implementation of Risk Management in IT by Non-bank Financial Institutions related to "the obligation to have and put a data center and disaster recovery center (DRC) in Indonesia." Central Bank of Indonesia also issued a similar regulation, Article 12 PBI No. 9/15/PBI/2007, related to "the bank's obligation to control the physical and environmental conditions of the data center and DRC."

Figure 8.4: Availability of Disaster Recovery Plan

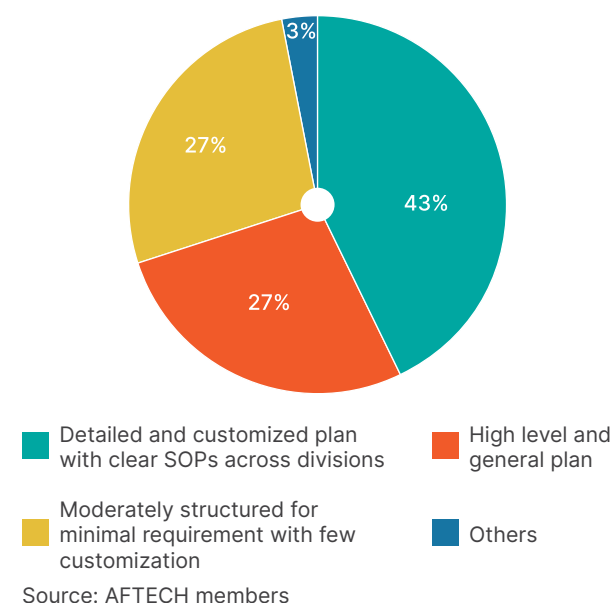


Source: AFTECH members

The AMS 2021 survey results show that 98% of respondents already have a disaster recovery plan. This figure has increased compared to last year's number.

Figure 8.5: Types of Disaster Recovery Plan Conducted in Fintech Companies

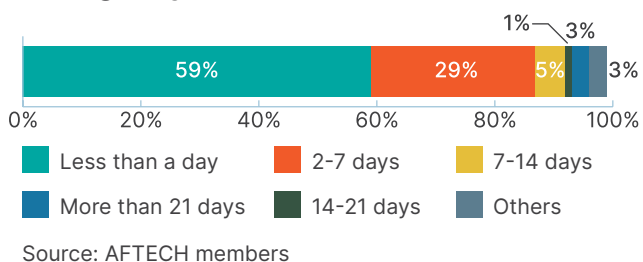
The Detail of DRP



The majority of Fintech players (43%), already have a detailed and customized Disaster Recovery Plan in place, with an average recovery time of less than a day to resume normal operations. However, a higher proportion is identified for the leading practices that have detailed and customized Disaster Recovery Plans (60%).

Figure 8.6: Average Days of Disaster Recovery Plan Took to Back to Normal

Average Days of DRP

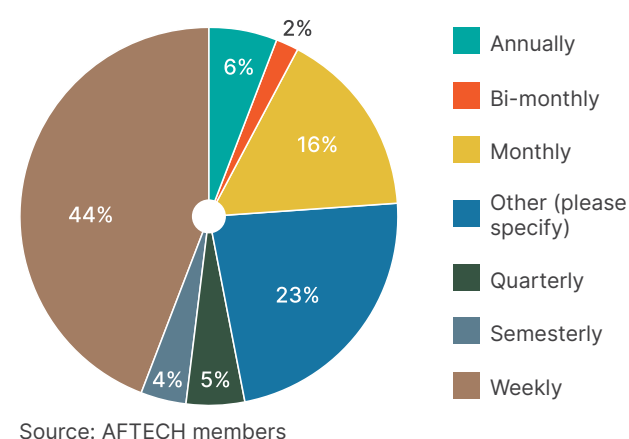


59% of respondents who have a DRP indicate that the Disaster Recovery Plan took less than a day to resume its normal operation. The other 29% of the respondents managed to have a 2-7-day plan to resume their operation.

C. Cybersecurity

Figure 8.7: Frequency of Data Backup Procedure

Frequency for Data Back Up



In efforts for improving cybersecurity, all respondents claimed to have a data backup procedure with 44% of respondents having carried out weekly data backup.

Figure 8.8: Frequency of Data Backup Procedure by Business Model

Frequency of Data Back Up

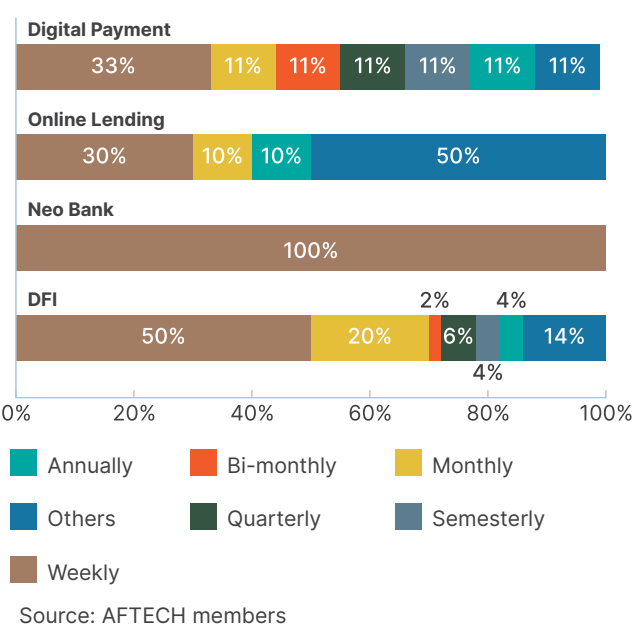


Figure 8.9: Availability of Cybersecurity Team

Availability of Cybersecurity Team

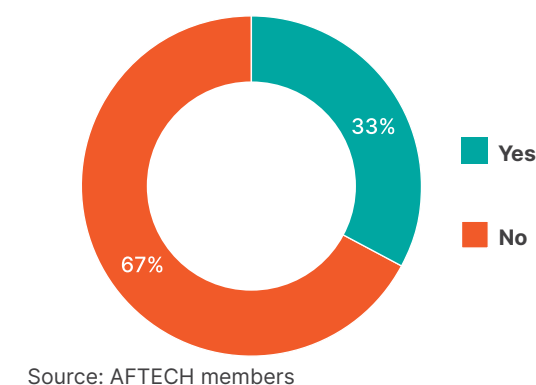
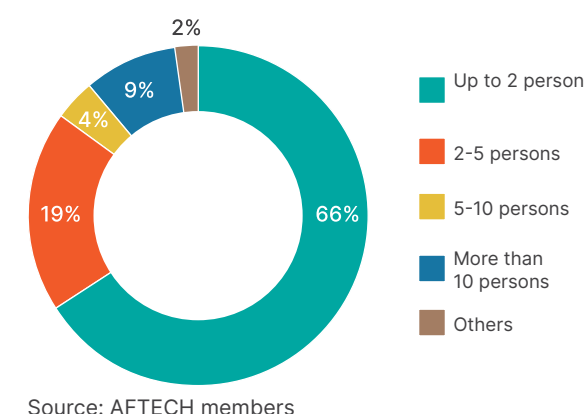


Figure 8.10: Number of Cybersecurity Team

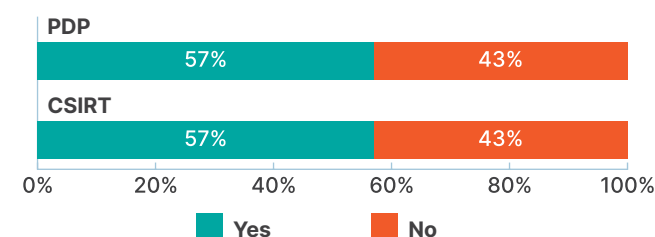
The Number of Cybersecurity Team



67% of AMS respondents this year already have a dedicated cybersecurity team. Most of the respondents stated that a special cybersecurity team consisted of a maximum of 2 people (66%), while 9% have more than 10 people. 57% of respondents stated that they have a Computer Emergency Response Team (CERT) and Personnel Data Protection (PDP), while the remaining 43% of respondents currently do not have a dedicated team and planning to build a cybersecurity team soon.

Figure 8.11: Companies with Cybersecurity Team specifically CSIRT and PDP

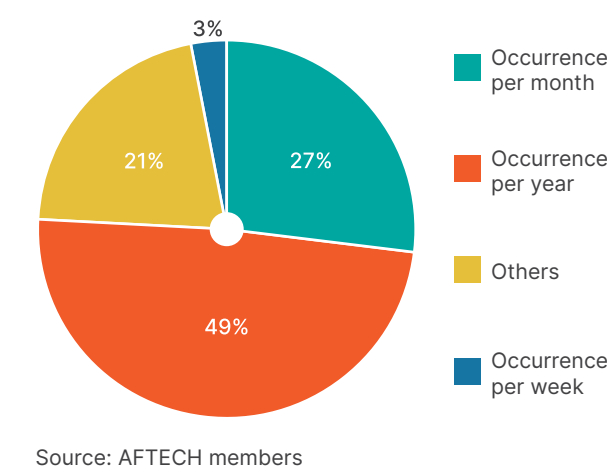
Availability of CSIRT and PDP



System Failures

Figure 8.12: Occurrence of System Failures between July 2020 – June 2021

Occurrence of System Failure



According to a survey on system failures, the majority of respondents (49%) said they have at least one system failure each year.

Figure 8.13: Type of System Failures

Type of System Failures

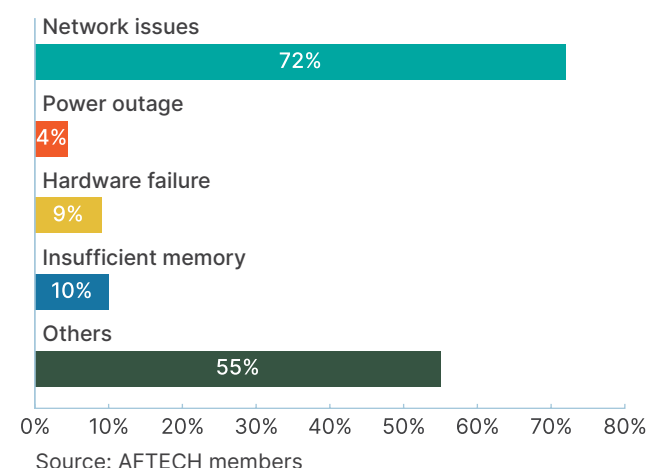
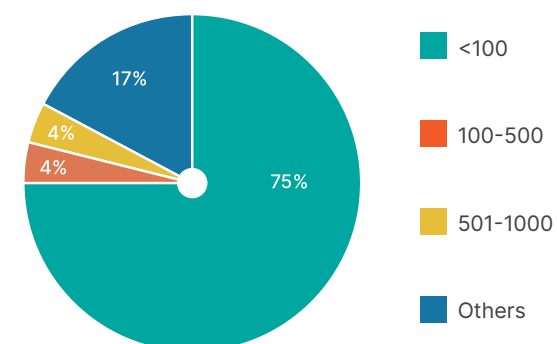


Figure 8.14: Customers suffered from system failures

Customers Suffered from System Failures

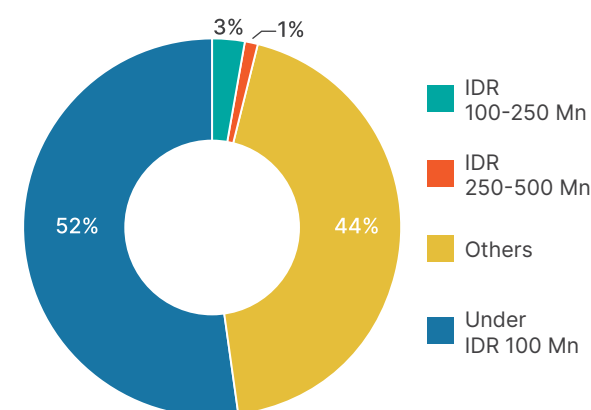


Source: AFTECH members

The majority of fintech companies (75%) have less than 100 customers that encounter system failure each year in which leads to company loss. On average, fintech players suffer a loss of less than IDR 100 million each year due to system failure (52%).

Figure 8.15: Company Loss Occurred due to System Failures between July 2020 – June 2021

Total Company Loss on System Failure



Source: AFTECH members

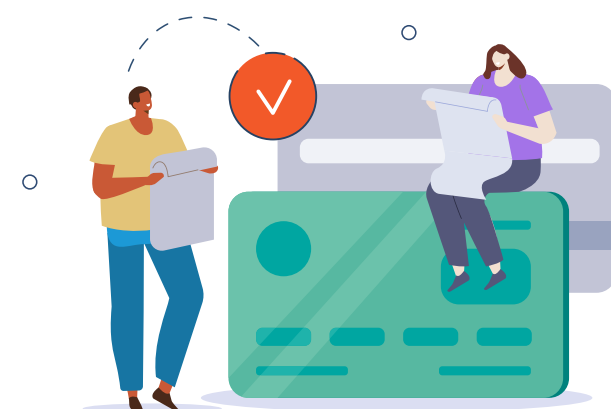
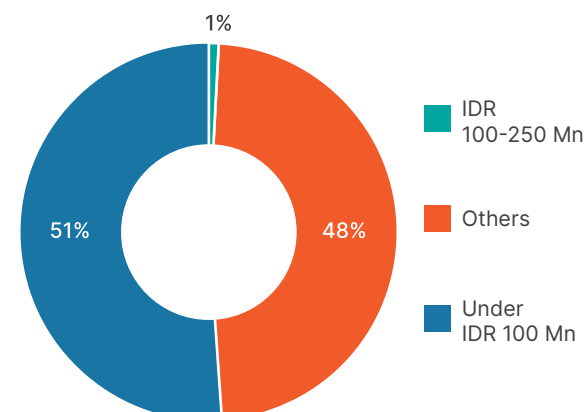


Figure 8.16: Customer Loss Occurred due to System Failures between July 2020 – June 2021

Total Customer Loss on System Failure



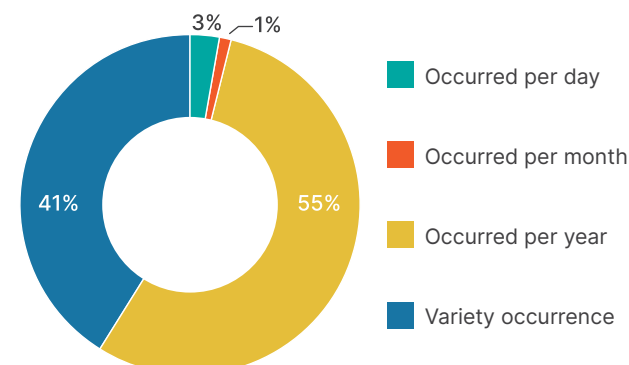
Source: AFTECH members

• Cyberattacks

Based on the AMS Report, respondents are more vulnerable to cyberattacks than system failure. 55% of the respondents claim that they suffer cyberattacks every year, with the majority of the cyber-attacks are DoS (21%) and DDoS (18%).

Figure 8.17: Occurrence of Cyberattacks between July 2020 – June 2021

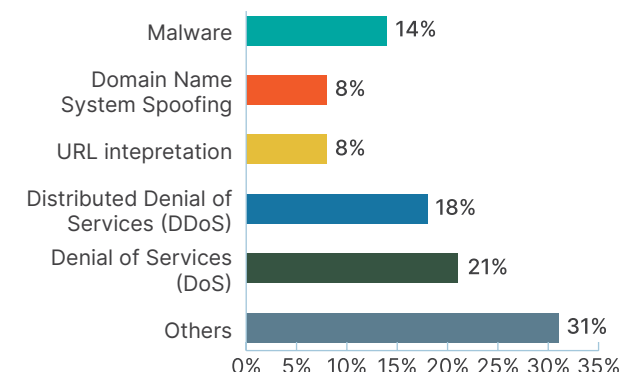
Occurrence of Cyberattacks



Source: AFTECH members

Figure 8.18: Type of Cyberattacks

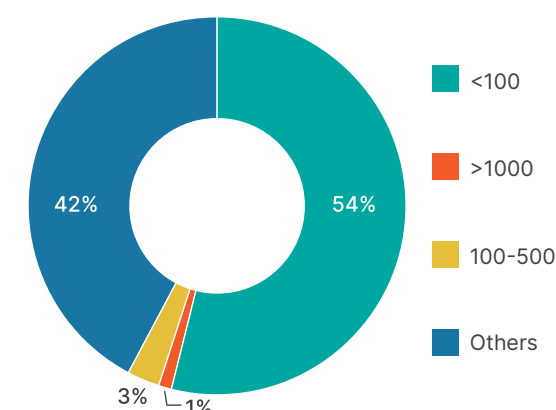
Type of Cyberattacks



Source: AFTECH members

Figure 8.19: Customers suffered from system failures

Total Customers Suffered from Cyberattacks



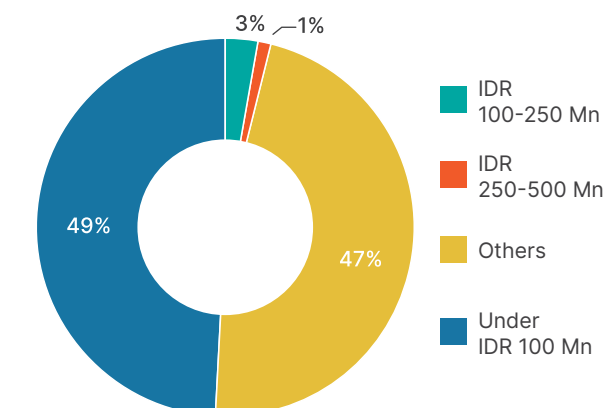
Source: AFTECH members

All respondents stated that the impact of cyber attacks have created losses experienced by their customers, with 54% of total respondents stating that cyberattacks have impacted less than 100 of their customers in a year.

In terms of the impact of cyber-attacks, survey respondents claimed that aggregate cyber-attacks cost less than IDR 100 million per year on average (49%), with less than 100 consumers impacted (54%).

Figure 8.20: Total Company Loss Occurred due to Cyberattacks 2021

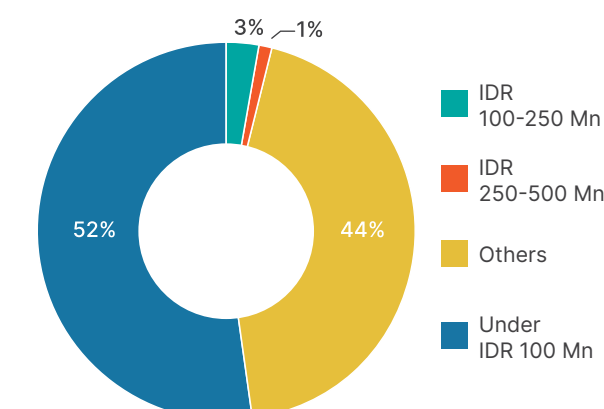
Total Company Loss from Cyberattacks



Source: AFTECH members

Figure 8.21: Total Customer Loss Occurred due to Cyberattacks 2021

Total Customer Loss from Cyberattacks



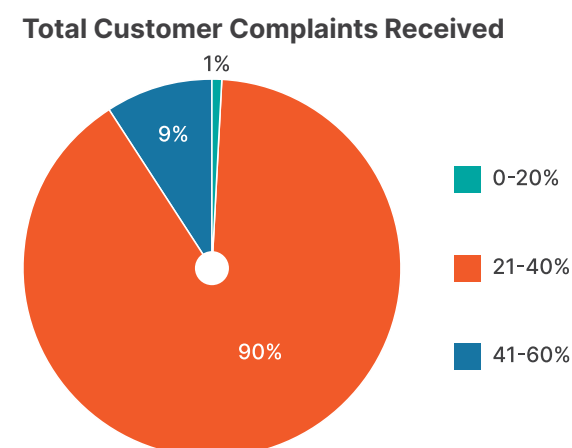
Source: AFTECH members

D. Customer Complaint Handling

The majority of the respondents (90%) have received complaints from less than 20% of the overall annual customers, and only 1% of the respondents claimed to have received complaints from 61-80% of the overall customers. This year's survey shows a declining trend compared to last year. In addition, the AMS 2021 survey showed that most customer complaints were related to:

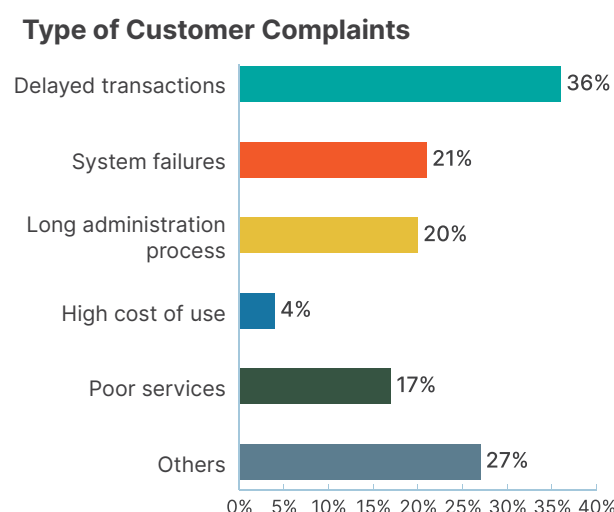
- Delayed transaction (36%)
- System failures (21%)
- Long administration process (20%)

Figure 8.22: Number of Customer Complaints Received between July 2020 – June 2021



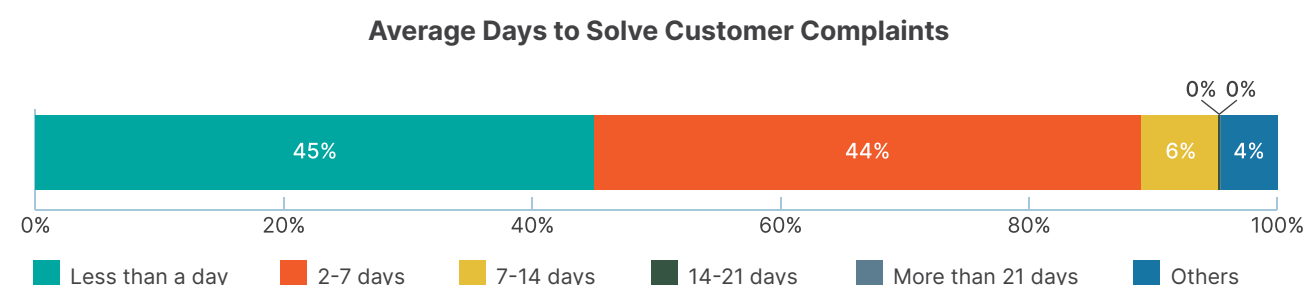
Source: AFTECH members

Figure 8.23: Type of Customer Complaints



Source: AFTECH members

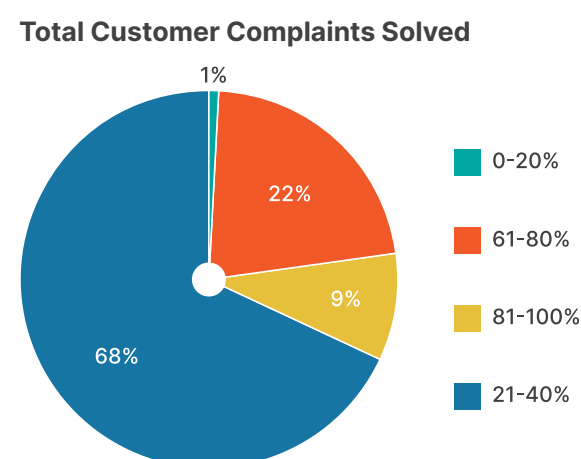
Figure 8.25: Average Days to Solve Customer Complaints



Sumber : anggota AFTECH

Concerning the resolution duration, the survey showed that 89% of the respondents were able to resolve the consumer complaint within a week. These figures show improvement where the average resolution time is less than 20 days.

Figure 8.24: Number of Customer Complaints Solved between July 2020 – June 2021

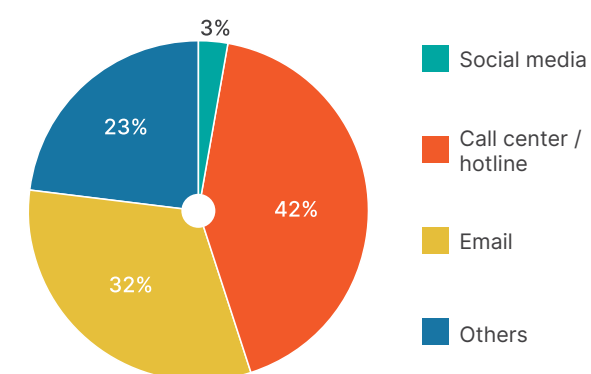


Source: AFTECH members

77% of the AMS 2021 respondents achieved a resolution of more than 60% of the overall complaints. Compared to last year, this figure shows an improvement in consumer complaint resolution by Fintech companies.

Figure 8.26: Channel for Handling Customer Complaints

Channel for Customer Complaints



Source: AFTECH members

Call centers become the main selected method of choice among Fintech consumers to channel their problems (42%).

E. Consumer Protection

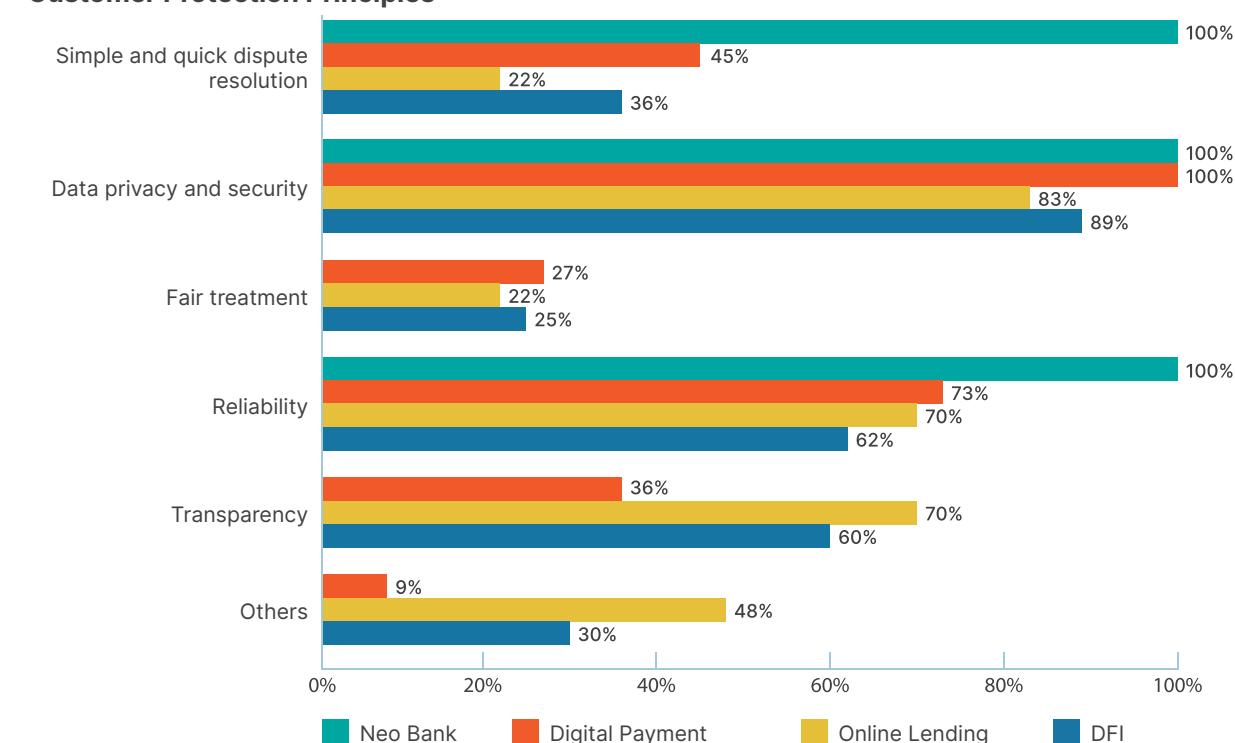
Regarding consumer protection, the AMS 2021 survey showed there are 3 (three) main principles for Fintech consumers:

- Data privacy and security (89%)
- Reliability (66%)
- Transparency (59%)

Specifically, we can reflect that simple and quick dispute resolution is an important aspect, especially for consumers from leading Fintech players.

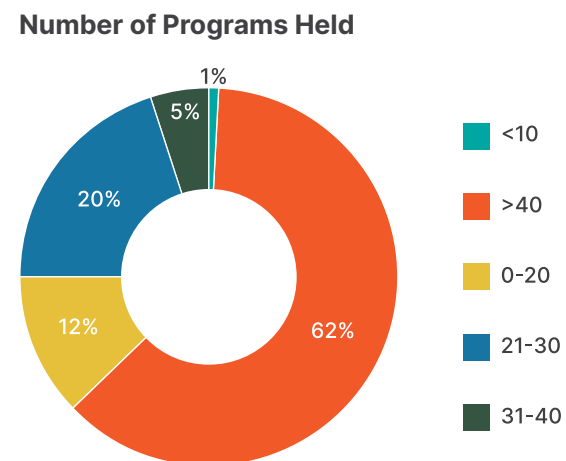
Figure 8.27: Customer Protection Principles Based on Fintech Business

Customer Protection Principles



Source: AFTECH members

Figure 8.28: Number of Programs Held by Companies

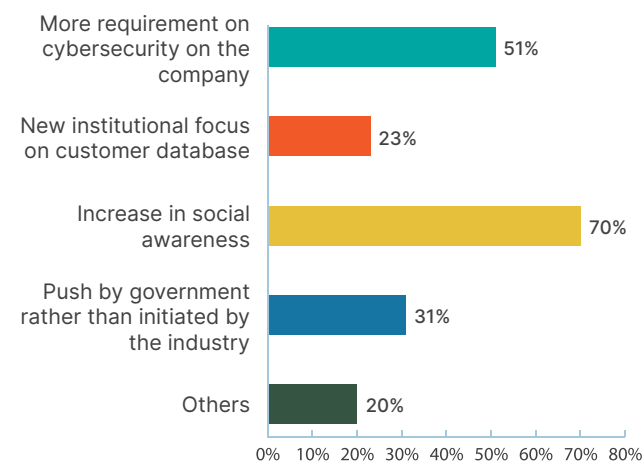


Source: AFTECH members

Furthermore, 83% of the respondents have initiatives to conduct education programs or literacy programs for consumers to increase consumer perspective regarding consumer protection. On average, each year Fintech companies conduct more than 10 education and digital literacy program.

Figure 8.29: The Future Outlook of Customer Protection

The Future of Customer Protection



Source: AFTECH members

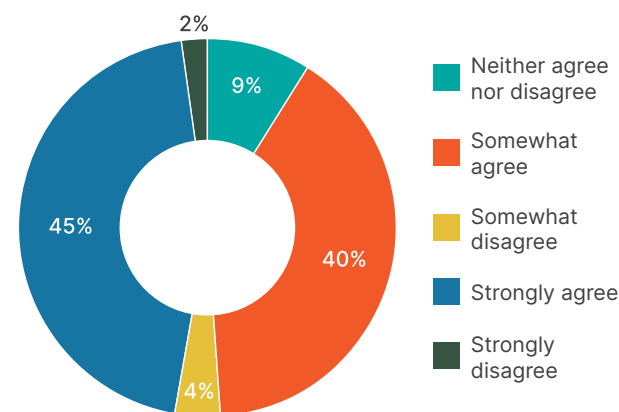
The respondents also believe that the future of social awareness will increase and hence will enhance for customer protection (70%), followed by stricter cybersecurity requirements (51%), and an encouragement from the government (31%).

F. Implementation of International Standards and Regulations

The increase of digitalization in the financial service sector is also followed by the increase in cybersecurity risk. Therefore, the implementation of international standards and codes of conduct plays a pivotal role in a fintech company's operation in mitigating cybersecurity risk and preventing cybercrime.

Figure 8.30: The Importance of Complying International Standards and Regulation

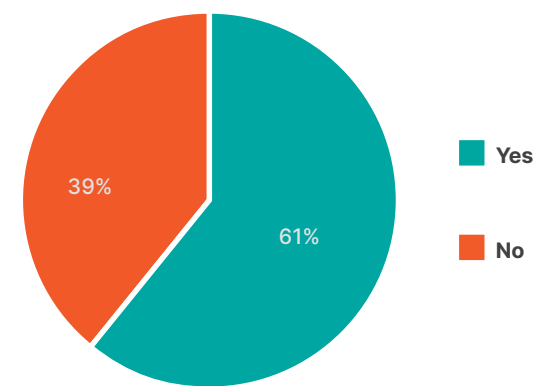
Importance of Following International Standard



Source: AFTECH members

Figure 8.31: The Implementation of International Standards

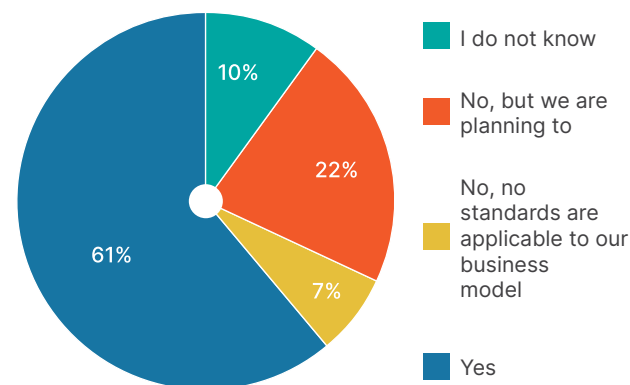
Implementation of International Standards



Source: AFTECH members

Figure 8.32: Implementation of International Standards and Regulations

Implementation of International Standard



Source: AFTECH members

Based on the survey, more than 85% of the respondents believe in the importance of following compliance with international standards and regulations. 61% of the respondents to AMS 2021 already follow international standards, namely ISO 27001 (51%), and General Data Protection Regulation (7%). The number increased from last year's figures.

Other than ISO 27001, other international standards implemented to the minority of the players are ISO 37000 (Governance of Organization), ISO 27032 (Cybersecurity), ISO 27002 (Security Control), NIST Cybersecurity Framework.

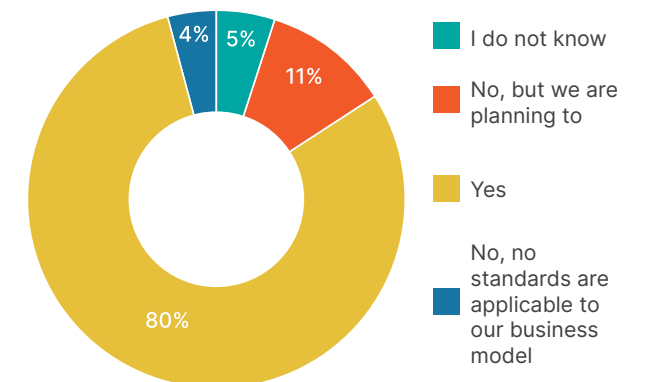
G. Implementation of Code-of-Conduct or Industry Standard

In relation to the implementation of Code-of-Conduct and/or industry standards for mitigating business risk in the Fintech industry, 80% of the respondents to AMS 2021 stated that they have implemented it.



Figure 8.33: Implementation of Code of Conduct

Implementation of Code-of-Conduct



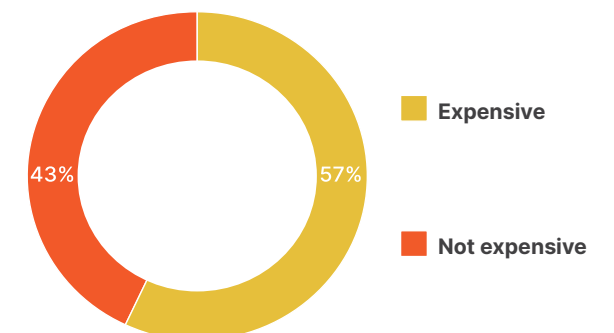
Source: AFTECH members

The respondents who followed the code-of-conduct or industry standards applied these aspects:

- Code of ethics (86%)
- Confidential information (69%)
- Conflict of Interest (38%)

Figure 8.34: Cost Perspective on Implementation of Code-of-Conduct

Perspective of Code-of-Conduct Implementation

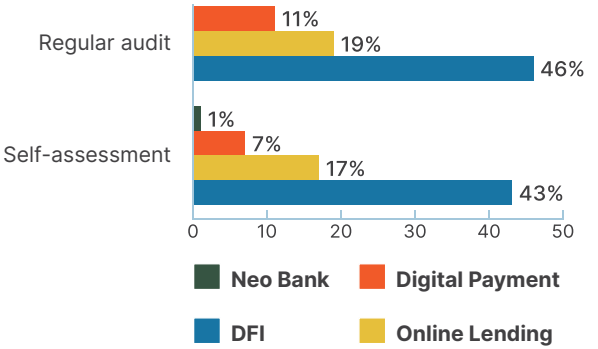


Source: AFTECH members

Most respondents (57%) of the AMS 2021 see the implementation of the code of conduct as expensive to comply with. However, respondents realize the importance of good corporate governance through a Code of Conduct and industry standards (including international standards). Respondents expressed that there are various methods to ensure compliance including through self-assessment method and regular auditing.

Figure 8.35: Methods for Monitoring the Implementation of Code-of-Conduct

Monitoring Code-of-Conduct Implementation



Source: AFTECH members



9. INFRASTRUCTURE AND TECHNOLOGY

The Fintech industry, as an extension of the digital transformation of traditional financial services, relies heavily on infrastructure and technology. In addition, infrastructure and technology considered being critical for the operations of Fintech companies are also very important for the expansion of the market both into and outside the country.

The survey results showed that the top five IT infrastructures that are important for the operation and development of the Fintech industry are: Open Banking API (68%), E-KYC (60%), Fraud Database (57%), Cloud Infrastructure (48%), and Payment Infrastructure (46%). The importance of the existence of this infrastructure has caused almost 1 in 5 Fintech players to import or use overseas providers for these infrastructures.

The survey results also showed a gap between infrastructure and technology in rural and urban areas. The survey respondents said they faced challenges in rural areas in terms of lack of internet access, lack of technological literacy, and lack of established infrastructure. The Fintech industry needs to overcome this challenge to expand the services and reach of Fintech evenly throughout Indonesia. The role of governments in addressing challenges related to infrastructure and technology (especially heavy infrastructure), as well as supporting literacy and education is important to ensure effective and wise digital transformation.



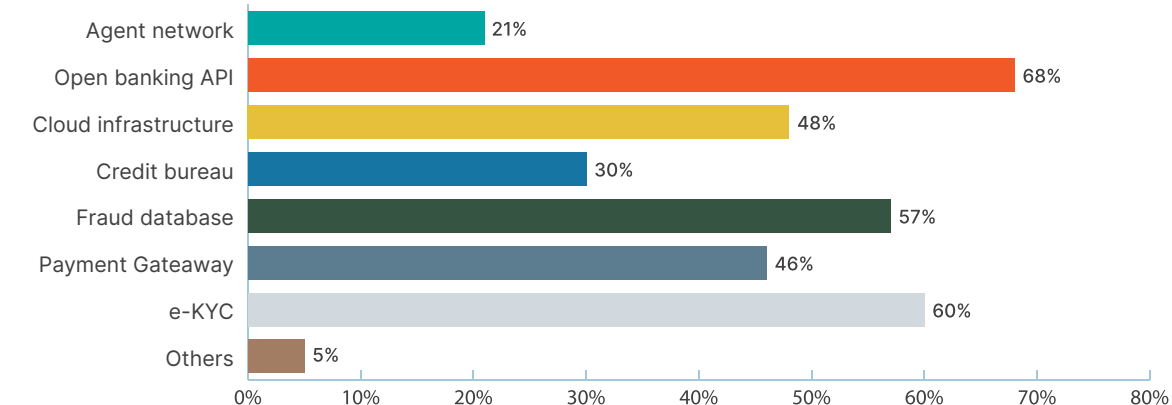
A. Current Technology and Its Procurement in Indonesia

The following is the survey result that shows the top five crucial aspects that are claimed by the Fintech companies for now:

- Open Banking API (68%)
- E-KYC (60%)
- Fraud Database (57%)
- Cloud infrastructure (48%)
- Payment Gateway (46%)

Figure 9.1: The Needs of Key Infrastructure and Technology for Fintech Operation

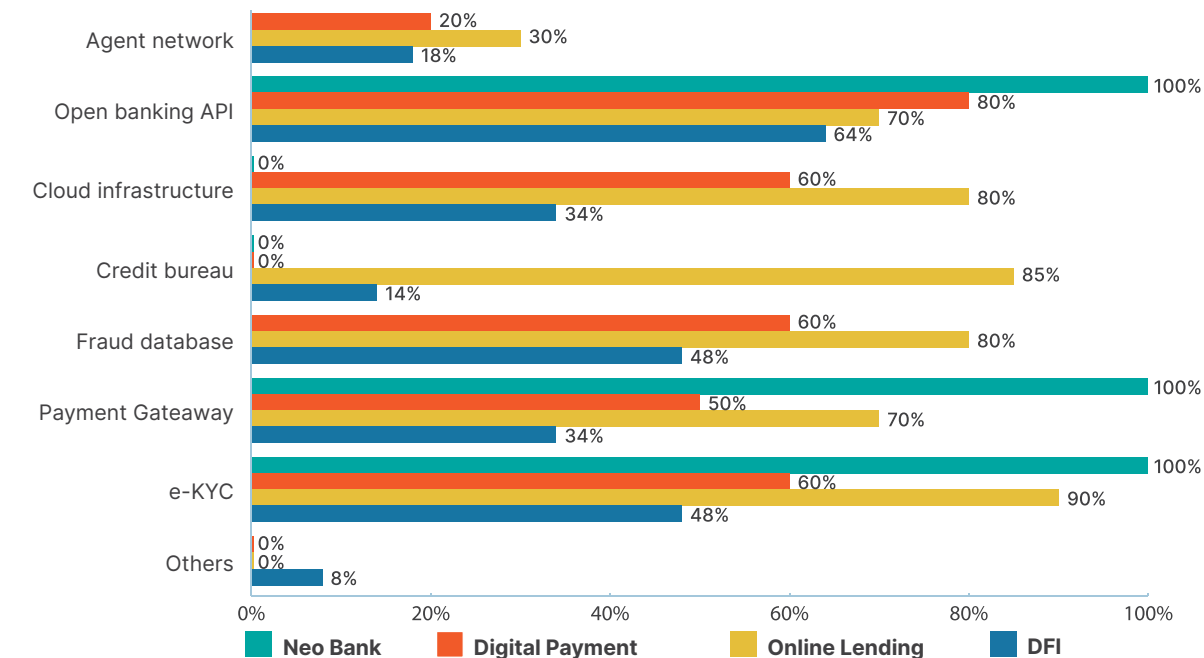
The Needs of Key Infrastructure and Technology



Source: AFTECH members

Figure 9.2: The Needs of Key Infrastructure and Technology for Fintech Operation based on Fintech Business Model

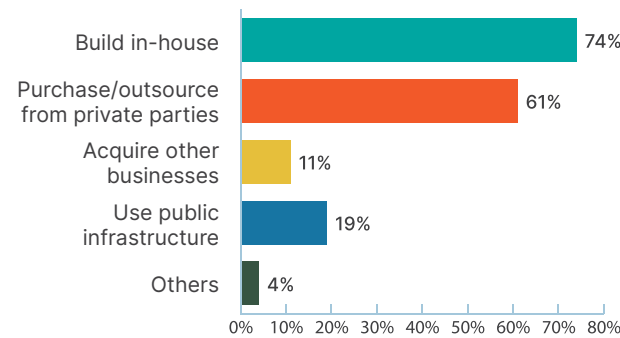
The Needs of Key Infrastructure and Technology (by clusters)



Source: AFTECH members

Figure 9.3: The Procurement on Infrastructure and Technology

The Procurement on Infrastructure Technology

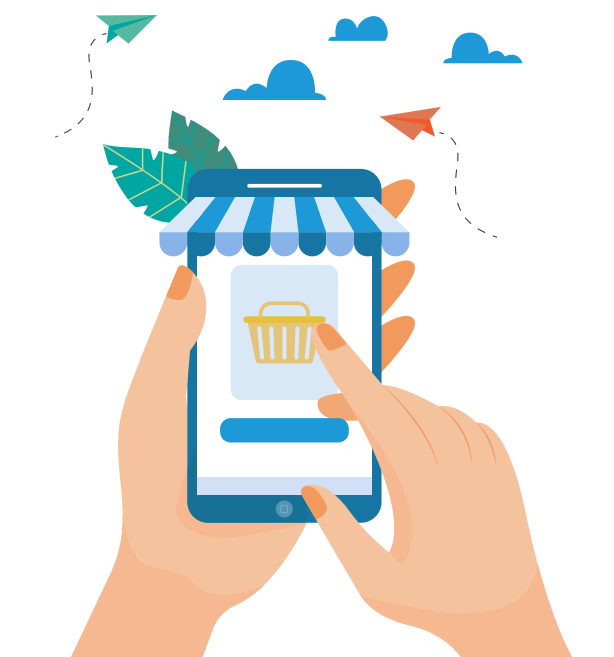


Source: AFTECH members

The majority of Fintech players claimed that they procure the technology (n=80) by developing it in-house (74%) and/or outsourcing from private parties (61%). The minority of respondents claimed to use public infrastructure⁵⁰ (19%) and acquire other businesses (11%) to fulfill their needs.

Furthermore, 54% of the respondents stated that they find difficulties and pain points to procure the technology needed for the company due to a few reasons:

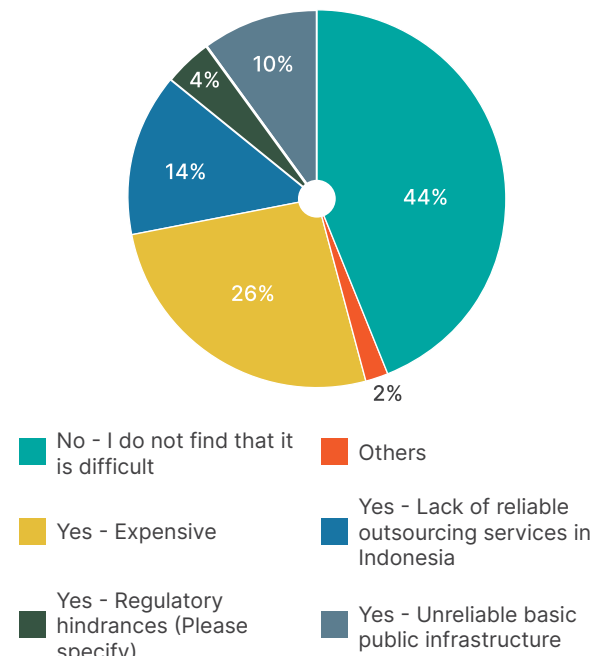
- Unreliable basic public infrastructure (10%)
- Lack of reliable outsourcing services (14%)
- Expensive (26%)
- Regulatory hindrances (4%)



⁵⁰ Infrastructure built by the Government or State-Owned Enterprise, e.g. Telkom

Figure 9.4: Challenges in Infrastructure and Technology

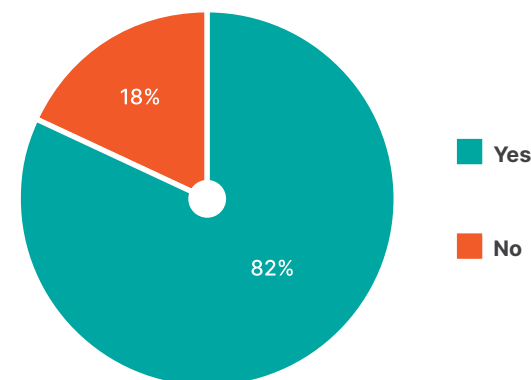
Challenges



Source: AFTECH members

Figure 9.5: Number of Fintech Players on Infrastructure and Technology Import

Procurement by Importing Infrastructure Technology



Source: AFTECH members

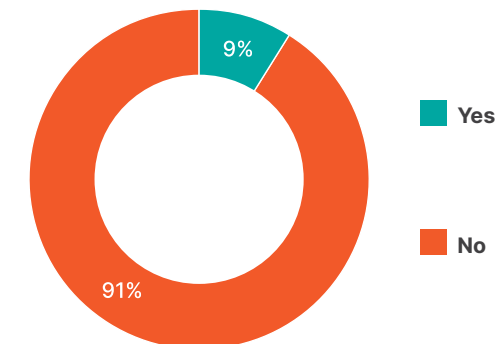
Based on the survey result, 18% of the respondents are still importing or using third-party providers for the needs of infrastructure and technology. They mostly import from Singapore, China, and Vietnam.

B. The Gap Between Rural Areas and Urban Areas

Coming to the topic of the gap between rural and urban areas, 91% of respondents believed there are disparities between rural and urban areas. The major disparities are in technology literacy (82%) and internet access (79%). The gaps identified are affecting the Fintech industry in Indonesia in terms of customer coverage. The customers who are in rural areas will have inferior services compared to the urban areas, which might affect the number of users in rural areas.

Figure 9.6: The Gaps Between Rural and Urban Areas

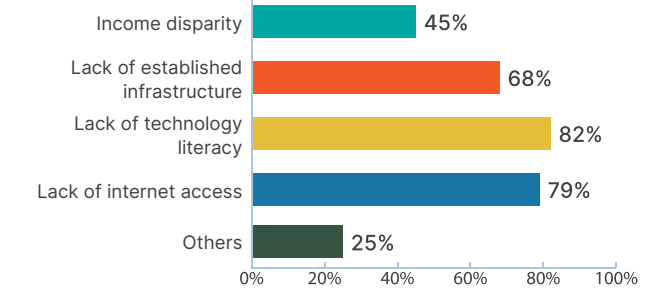
Gap Between Rural and Urban



Source: AFTECH members

Figure 9.7: The Major Gaps in Infrastructure and Technology between Rural and Urban Areas

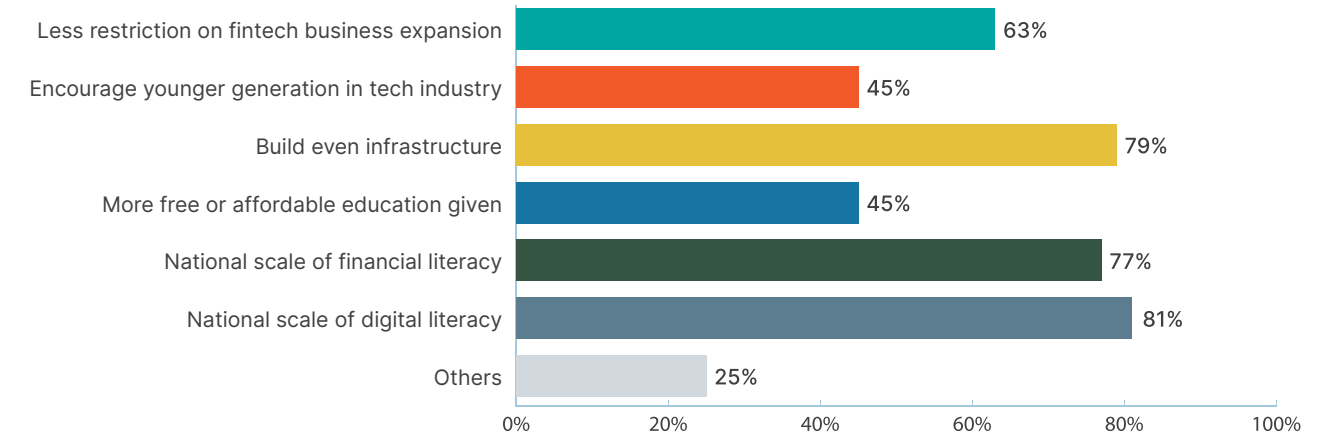
Type of Major Gaps in Infrastructure Technology



Source: AFTECH members

Figure 9.8: The Government Supports Expected in Infrastructure and Technology

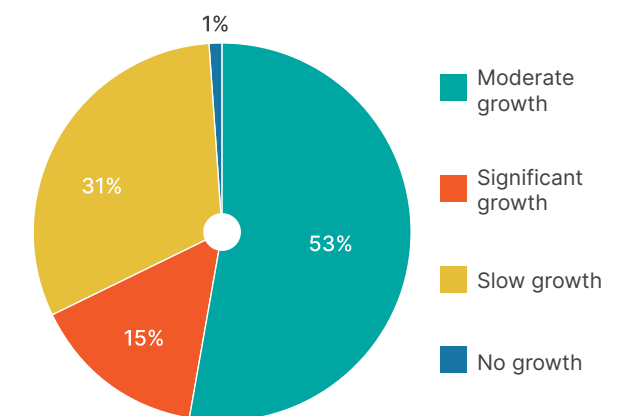
Expected Government Support to Address Gaps



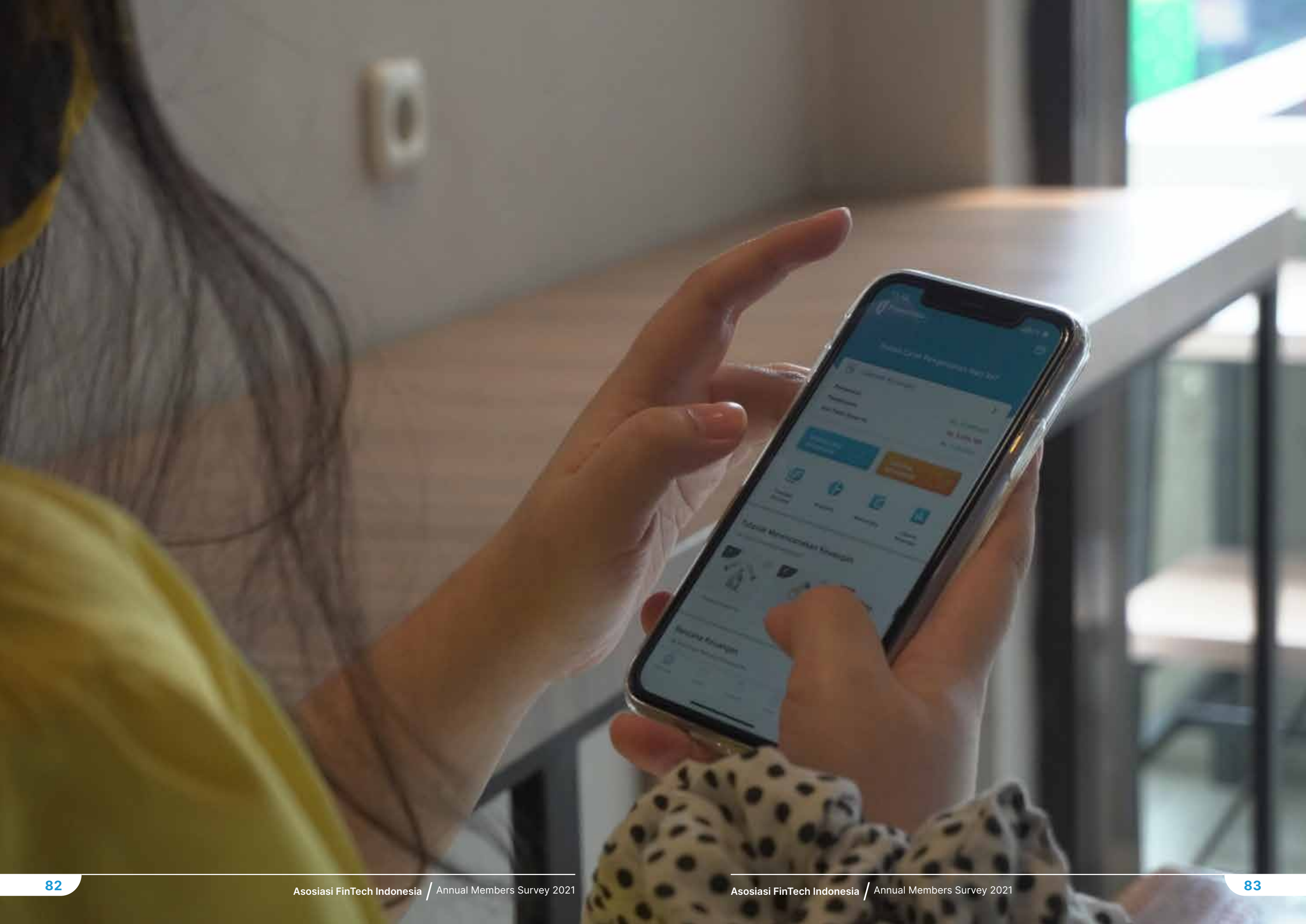
Source: AFTECH members

Figure 9.9: The Future Outlook in Rural Areas in Indonesia

Future outlook of infrastructure



Source: AFTECH members



10. SKILLS GAP AND GENDER EQUALITY

Based on the survey results, respondents still perceive a skills gap within the Fintech industry. Specifically, areas, where most respondents identified a skills gap are Data and Analytics, Programming, and Cybersecurity. However, to mitigate and fulfill the skills gap experienced by this year's AMS respondents, 65% of respondents have conducted in-house training, while 46% have recruited talents from financial institutions. This is a significant improvement from what is seen in last year's survey, with 27% of respondents conducting in-house training and 19% recruiting from financial institutions.

Related to gender equality, the survey result found an imbalance in the proportion of gender in employees. For example, 53% of respondents claimed to have 26-50% female employees in all positions. However, the number of female employees deteriorates in higher managerial positions such as senior manager and Board of Directors. In addition, more than 7 out of 10 respondents believe that finding male talents is easier.

In terms of the user base, there is a minor discrepancy in the result on the gender bias, justified that 56% of 77 respondents have 26-50% female customers and many respondents from 78 Fintech players (5%) say that women are more vulnerable to cyber risks. The result is similar to last year's results where 55% of respondents say that they have 20-40% female customers.

Despite the discussion about gender, this year's AMS, AFTECH, investigated the background of Fintech companies' workforce. The report will focus on the educational experience of the

respondents' employee and their preferences about future hiring. 65% of the 80 respondents responded that less than 10% of their employees had an overseas degree. With no preference over educational backgrounds, 85% of the 80 respondents plan to hire domestic talent in 1-2 years. This is a strong indicator that the industry believes that local skills are capable and trustworthy to operate Fintech business in Indonesia in the future.

A. Skills Gap

The survey results identified programming, data and analytics, and cybersecurity as the top three areas where a skills gap is most evident. This situation is similar to last year's survey, where respondents believed Data and Analytics, Programming, and Risk Management are critical areas with skills gaps.

Moreover, 70% of respondents believe that future business expansion will result in more skills gaps in their workforce. On a positive note, 63% of respondents believe that the skills gap within the talent landscape will shrink in the future. The top three areas with a skills gap that DFI respondents reported are (respondents can select more than one answer):

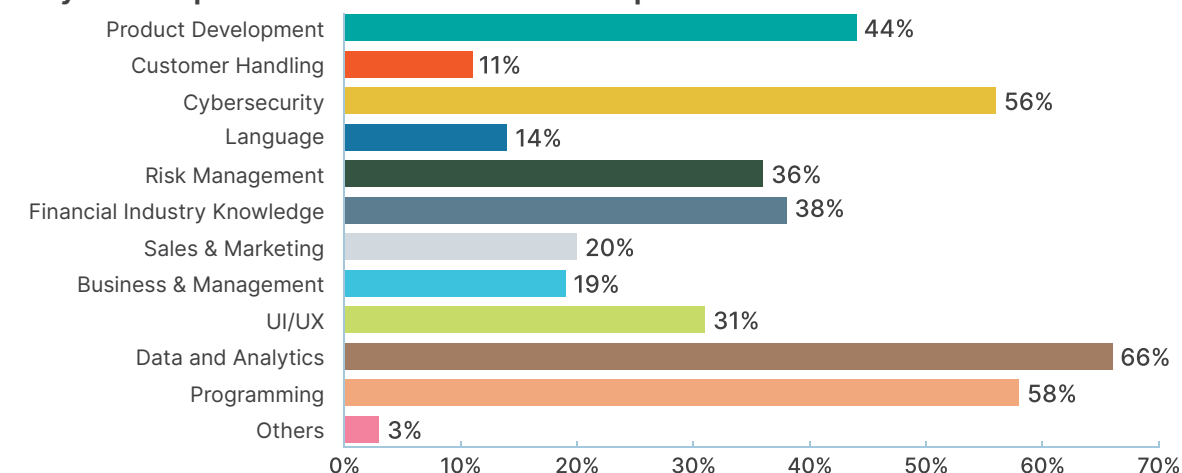
1. Data and Analytics (66%)
2. Programming (60%)
3. Cybersecurity (54%)

In comparison, for non-DFI respondents they were:

1. Data and Analytics (67%)
2. Cybersecurity (60%)
3. Programming (53%)

Figure 10.1: Key Skills Gap Areas

Key Skills Gap Areas in Current Talent Landscape

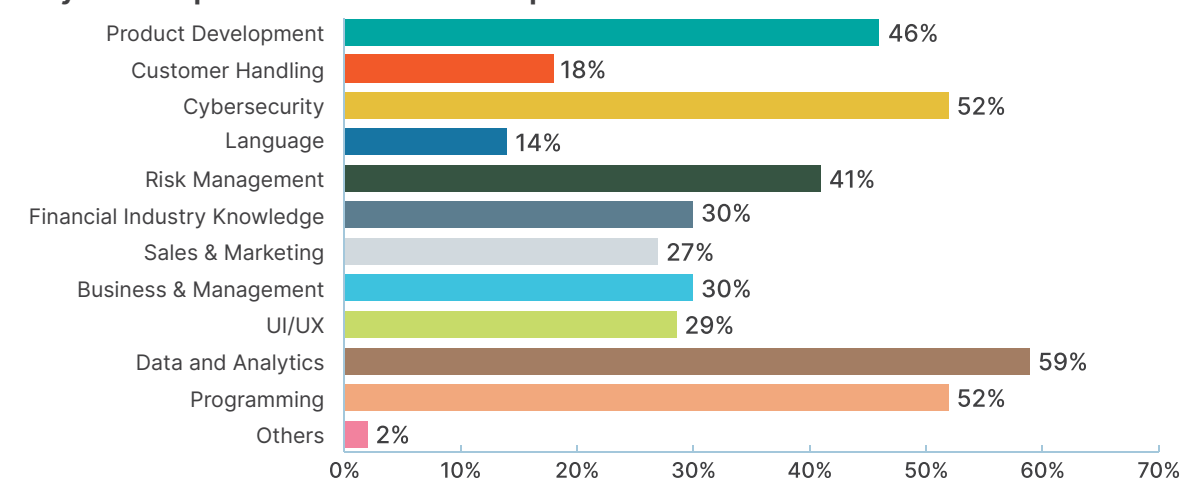


Source: AFTECH members

70% of the respondents believe that when companies expand, there will be an increase in the current skill gaps. Skill gaps that have been identified post business expansion are Data and Analytics (59%), Cybersecurity (52%), and Programming (52%).

Figure 10.2: Skills Gap due to Expansion

Key Skills Gap Areas After Business Expansion



Source: AFTECH members

To address the skills gap, the survey asked a question regarding the companies' methods, resulting in a total of 80 respondents. From the survey, 65% of the respondents said they had conducted in-house training and 46% said they focused on the recruitment of talent from financial institutions. Despite the different preferences in the plans for in-house training for the employees, the Fintech industry is still

finding suitable methods to reduce skill gaps by unlocking more potential in the current talents, shown by the survey result where 47% of the respondents plan to expand their current curriculum on in-house training. However, 39% of the respondents believe that hiring external parties to conduct in-house training in the future will be more effective.

Figure 10.3: How Fintech Companies Address Skills Gap

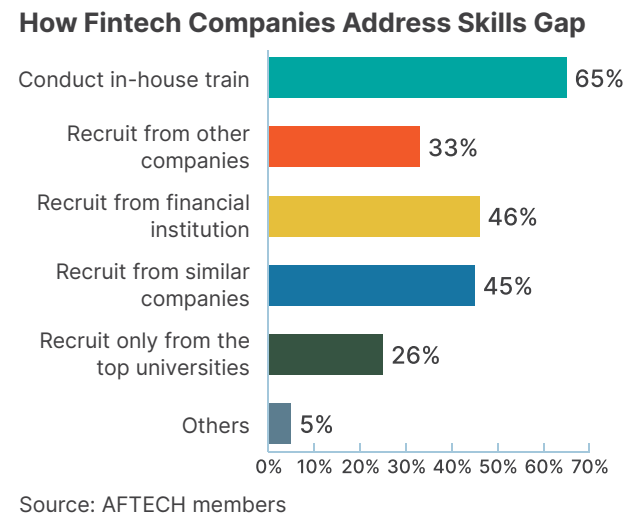


Figure 10.4: In-House Training Types

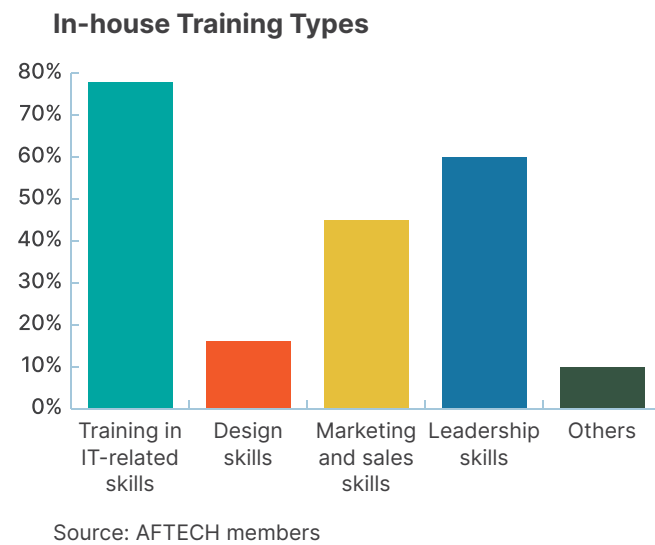
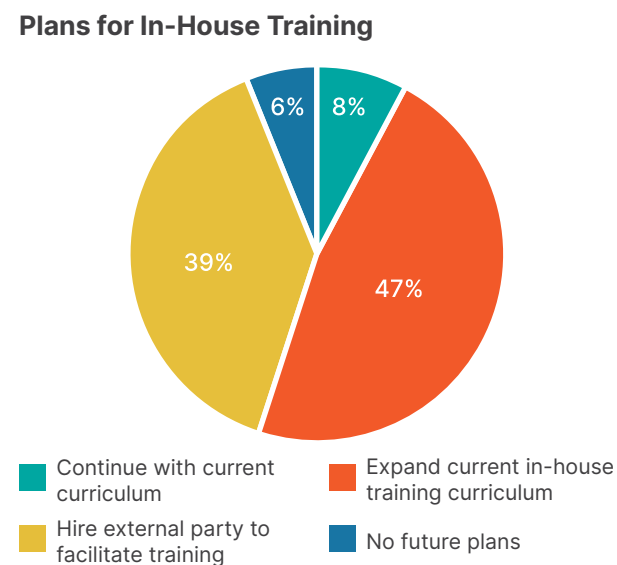
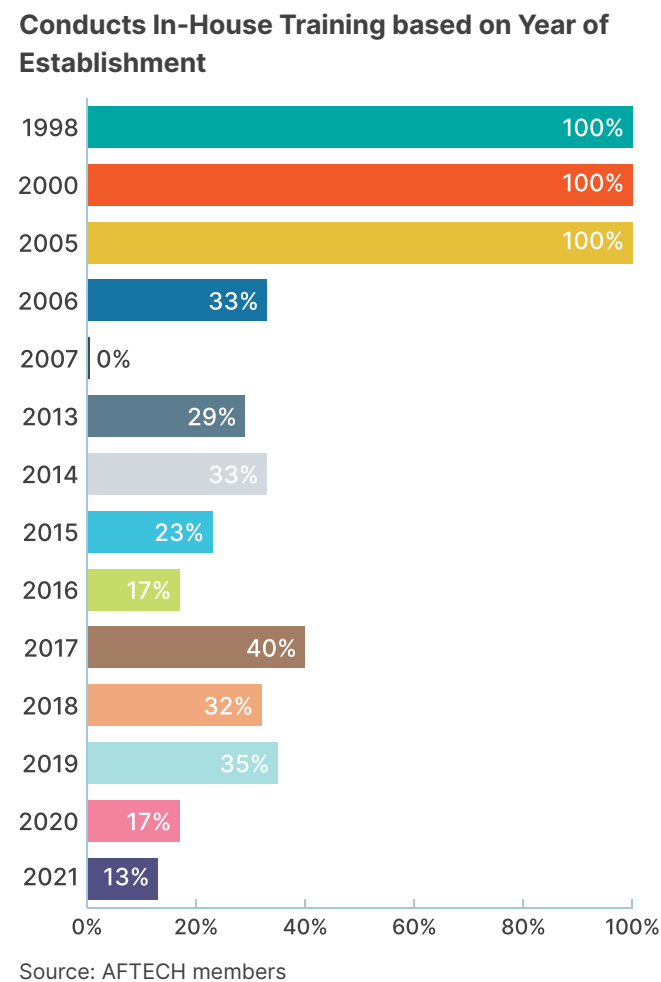


Figure 10.5: Plans for In-House Training



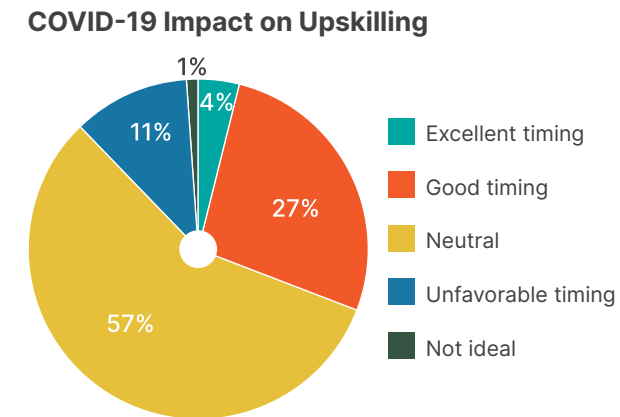
The level of training and development present among respondents varies according to the level of maturity of the company. Justified by the result which shows that respondents that have just started operating from 2020 onwards had a more significant imbalance in the skills gap, and no in-house training available.

Figure 10.6: Proportion of In-House Training based on Year of Establishment



Based on the survey, the COVID-19 pandemic is seen positively by 31% of the respondents in addressing this skills gap and upskilling their workers. However, the leading players' figure shows different results, as 20% of them believed it is an unfortunate timing to do so.

Figure 10.7: COVID-19 and Impact on Upskilling



Source: AFTECH members

In 2019, Ekrut⁵¹, a recruitment platform focusing on tech talents, reported a 76.6% increase in demand for data analysts, a 50.9% increase in demand for full-stack engineers, and a 23.9% increase in demand for security/network engineers. This is in line with the areas in which respondents have reported skill gaps.

A 2021 census on the Australian Fintech industry conducted by EY⁵² found that the most in-demand skills demanded by respondents are Engineering/ Software (62%), Product Management (31%), and Data Engineering / Data Science (30%). To tackle this skills gap, 78% of respondents want more accessible access to skilled migration visas to attract foreign talent, as 66% of respondents reported difficulty in attracting qualified or suitable local talents.

Singaporean Fintech companies (Banking and Financial Services Union, PwC Singapore, and Singapore Fintech Association, 2020)⁵³ also, believe that a lack of training at the tertiary level relating to Fintech and potential workers lacking relevant skills are significant drivers to the skills gap in the industry. Regarding the desired skills for the workforce in the Singapore financial industry, tech-based ones such as

data analytics, programming, and knowledge in Java are most in-demand. This is similar to the responses received from AFTECH members where data and analytics, programming, and Cybersecurity are the top areas with a skills gap. This finding indicates that the skills gap within the Fintech industry is similar across countries, implying that a talent shortage on in-demand skills is identical between countries.

The Indonesian Government⁵⁴ has implemented initiatives to boost the development of digital talents. The first is by programs aimed at increasing digital literacy. The second is through the Digital Talent Scholarship, which aims for 100,000 participants to improve digital technology skills. The third is the Digital Leadership Academy intended for leaders within public and private organizations operating in the digital technology field, with a target of 300 participants.

The Indonesian Financial Services Authority (OJK) has also published Regulation (POJK) No.11/POJK.02/2021 regarding the management of professional certifications in the financial services sector. It outlines the procedure and systematic process of an industry association obtaining a license to release professional certifications by National Working Competency Standards. This is done to increase competence and innovation among workers in the financial services sector, maintain a clear standard for human resources within the industry, and further develop a stable and contributive sector.

The efforts made by the Government of Indonesia to support the talent gap have been echoed and well received by the industry. In the future, the collaboration between the Government and fintech industries should be continued, deepened, and expanded by reaching more relevant stakeholders to provide

⁵¹ Ekrut. 2020. https://www.linkedin.com/posts/ekrut_recruitment-trends-2019-and-what-to-expect-activity-6630709103733899264-BGIZ
⁵² Ernst & Young. 2021. Australian Fintech sector creating jobs and raising capital, with sights set on overseas markets. https://www.ey.com/en_au/news/2021/10/australian-fintech-sector-creating-jobs-and-raising-capital
⁵³ Banking and Financial Services Union, PwC Singapore, dan Singapore Fintech Association. 2020. 'Fintech Talent Survey 2020: Seizing opportunities for growth'. <https://www.pwc.com/sg/en/financial-services/assets/seizing-opportunities-for-growth-fintech-talent-survey.pdf> (diakses pada 14 Oktober 2021)
⁵⁴ Kementerian Komunikasi dan Informatika Republik Indonesia. 2021. DTS 2021 Rekrut 60 Ribu Peserta, Kominfo Targetkan 40 Ribu Lagi. https://kominfo.go.id/content/detail/36337/siaran-pers-no-280hmkominfo082021-tentang-dts-2021-rekrut-60-ribu-peserta-kominfo-tar-getkan-40-ribu-lagi/0/siaran_pers

increased competencies of local talents such as educational institutions in developing a digital education program to increase the readily available pool workforce with adequate competencies.

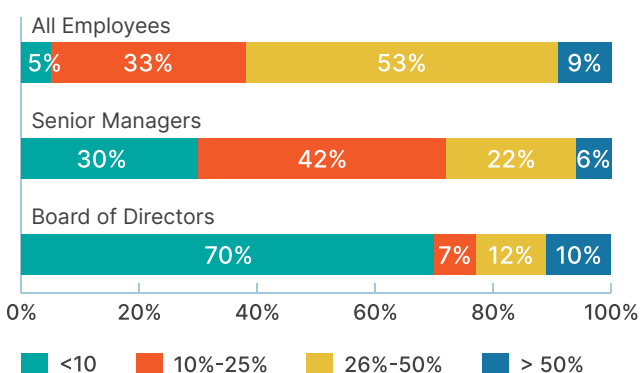
B. Gender Equality

Another popular issue besides the skill gaps is gender equality. 60% of respondents believe that the gender gap among talents will reduce in the future, while 78% of respondents that answered this specific question still say that it is easier to find male IT talents compared to female IT talents. This number is higher than last year's 77%, which was lower than 2018's figure of 91%.

Although 53% of respondents had 26-50% of female employees in total, only 22% of respondents had the same range among senior managers. Moreover, this year's result shows only 6% of the respondents had more than 50% female senior managers in the business. This is lower than last year's results where 32% of respondents had 20-40% female senior managers and 30% had more than 50% female senior managers. This figure is even more reduced at the Board of Director level, with only 12% of respondents having that proportion of female representation for 26-50% range from total Board of Directors.

Figure 10.8: Proportion of Female Employees at Different Levels

Proportion of Female Employees

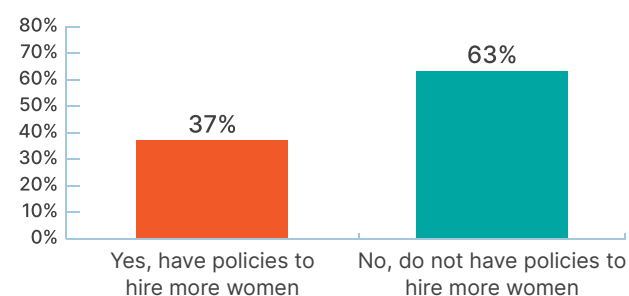


Source: AFTECH members

Despite the clear gender gap within the industry, this survey asked about the internal plan on hiring talent in terms of gender. 81 respondents answered this question, with 37% of the respondents having any policies or procedures to increase the hiring of women. However, of those who had policies in place, 73% confirmed that they have plans to hire more women in the next 1-2 years, reflecting that most fintech players already set a timeline to increase hiring for women in the near term.

Figure 10.9: Policy to Hire More Women

Policies to Hire More Women

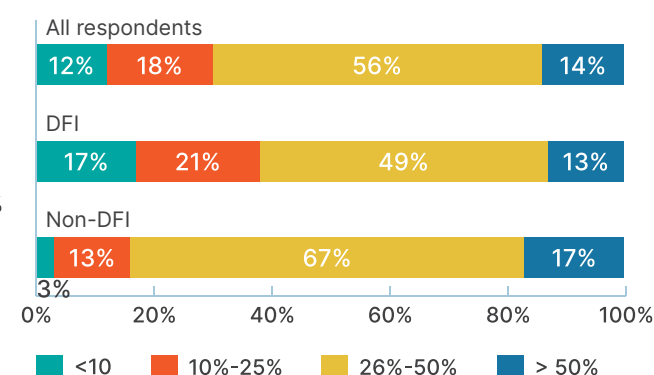


Source: AFTECH members

In terms of the user base, 56% of the respondents have 26-50% of female customers. This improvement against last year, when 55% of respondents had 20-40% of female customers. This year, only 14% of the respondents have more than 50% of female customers, whereas it was 29% last year. In addition, only 5% of respondents view female customers as more prone to cyber risk, going against a study by the Bank for International Settlements where their results indicate that women are less likely to use Fintech due to security issues.

Figure 10.10: Proportion of Female Customers

Proportion of Female Customers



Source: AFTECH members

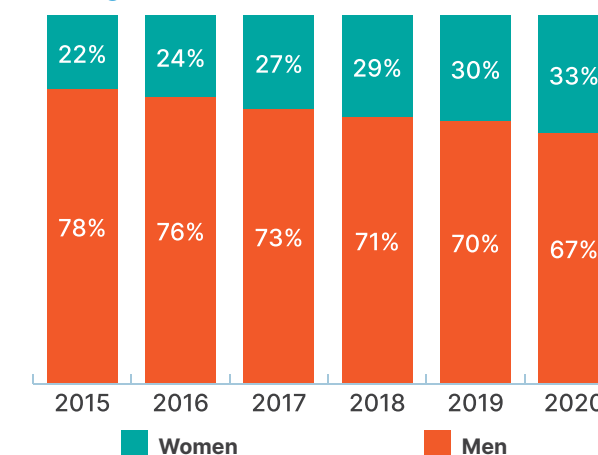
In analyzing the responses received from AFTECH members, it is necessary to consider evidence from a global perspective to see whether the Indonesian Fintech industry is in line with global trends.

A 2019 study by ValueChampion⁵⁵ puts Indonesia 8th out of 12 countries in a ranking of best Asia-Pacific countries for women in Fintech. The factors involved in this ranking were the strength of the Fintech industry in each country, the gender gap and women's safety parameters, and also quality of life.

In a 2021 census of Australia's Fintech industry conducted by EY⁵⁶, it is found that women only made up 35% of the overall industry workforce, 26% of leadership positions, and 24% of Fintech companies had female founders. A 2019 census on the UK Fintech industry done by EY⁵⁷ also found that just 29.5% of the overall industry workforce are women, and 25% of companies also reported at least one female founder or co-founder.

Looking at Indonesia, Badan Pusat Statistik provides information regarding the breakdown of nationwide managerial positions by gender from their National Workforce Survey between 2015 and 2020⁵⁸. Within these 5 years, the proportion of women has increased by 11 percentage points, implying growth in gender equality within leadership positions of companies. The 2020 figure is well-reflected in the AMS responses, where 64% of respondents reported 10-50% female senior managers.

Figure 10.11: Gender Breakdown of Managerial Positions



Source: Proportion of women in managerial positions by province, Central Statistics Agency (2020)

According to the Survey of National Workforce Survey in February 2021 conducted by *Badan Pusat Statistik*⁵⁹, 131.06 million people are working in Indonesia. Within that figure, 1.08 million are working in Information and Communications, and 1.51 million are in Financial Services and Insurance. From the latest figures, 35% of workers in information and communication are women while for financial services and insurance the figure stands at 37%. These figures align with the survey results where 53% out of 81 respondents reported that 26-50% of their employees are women.

⁵⁵ Arndt, C. 2019. 'Top 5 Asia-Pacific Countries for Women in Fintech'. ValueChampion. <https://www.valuechampion.sg/top-5-asia-pacific-countries-women-fintech> (diakses pada 25 Oktober 2021)

⁵⁶ Ernst & Young. 2021. Australian Fintech sector creating jobs and raising capital, with sights set on overseas markets. https://www.ey.com/en_au/news/2021/10/australian-fintech-sector-creating-jobs-and-raising-capital

⁵⁷ Ernst & Young. 2019. 'UK Fintech Census 2019'. https://assets.ey.com/content/dam/ey-sites/ey-com/en_uk/topics/banking-and-capital-markets/uk-fintech-census-2019/ey-uk-fintech-census-2019.pdf (diakses pada 2 November 2021)

⁵⁸ Badan Pusat Statistik. 2018. 'Indikator Pasar Tenaga Kerja Indonesia Februari 2018'. <https://www.bps.go.id/publication/2018/06/04/f99a-09ca269ceb058826ab3e/indikator-pasar-tenaga-kerja-indonesia-februari-2018.html> (diakses pada 28 Oktober 2021)

Badan Pusat Statistik. 2018. 'Indikator Pasar Tenaga Kerja Indonesia Agustus 2018'. <https://www.bps.go.id/publication/2018/11/30/dbb-669d2cf4fad344ffc2577/indikator-pasar-tenaga-kerja-indonesia-agustus-2018.html> (diakses pada 28 Oktober 2021)

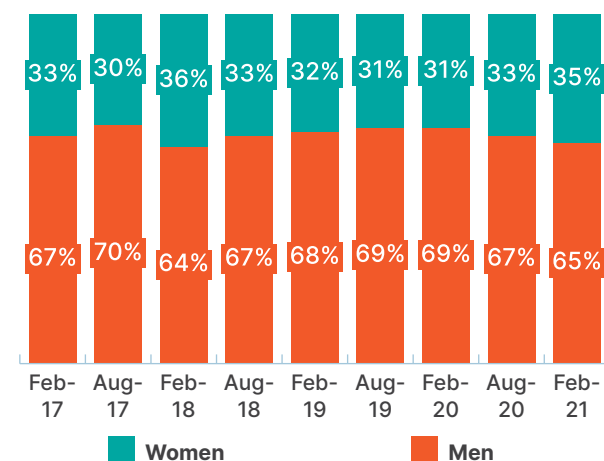
Badan Pusat Statistik. 2019. 'Indikator Pasar Tenaga Kerja Indonesia Agustus 2019'. <https://www.bps.go.id/publication/2019/12/06/25fbc-42cac7c24ec0a5e9309/indikator-pasar-tenaga-kerja-indonesia-agustus-2019.html> (diakses pada 28 Oktober 2021)

Badan Pusat Statistik. 2020. 'Proporsi perempuan yang berada di posisi managerial menurut provinsi'. <https://www.bps.go.id/indikator/40/2003/1/tingkat-proporsi-perempuan-yang-berada-di-posisi-managerial-menurut-provinsi.html> (diakses pada 28 Oktober 2021)

Badan Pusat Statistik. 2021. 'Indikator Pasar Tenaga Kerja Indonesia Februari 2021'. <https://www.bps.go.id/publication/2021/06/15/efb1f5c-ba486f2ebb0bab891/indikator-pasar-tenaga-kerja-indonesia-februari-2021.html> (diakses pada 28 Oktober 2021)

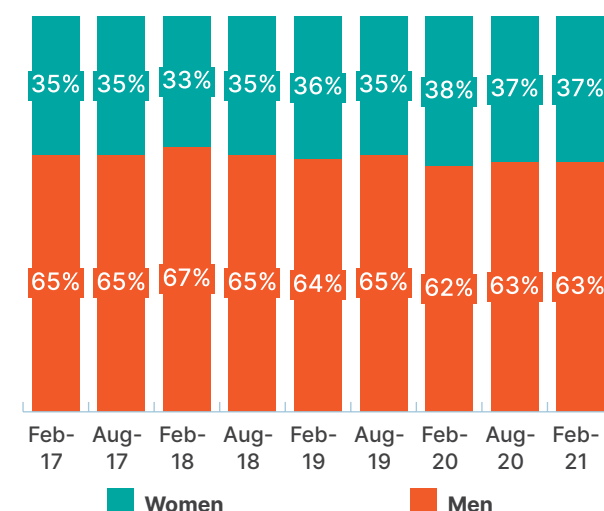
⁵⁹ Badan Pusat Statistik. 2021. 'Indikator Pasar Tenaga Kerja Indonesia Februari 2021'. <https://www.bps.go.id/publication/2021/06/15/efb1f5c-ba486f2ebb0bab891/indikator-pasar-tenaga-kerja-indonesia-februari-2021.html> (diakses pada 28 Oktober 2021)

Figure 10.12: Gender Breakdown in Information and Communication



Source: Indonesian Labor Market Indicators February 2018 – February 2021, Central Bureau of Statistics (2020)

Figure 10.13: Gender Breakdown in Financial Services and Insurance



Source: Indonesian Labor Market Indicators February 2018 – February 2021, Central Bureau of Statistics (2020)

To further reduce the gender gap in both the talent landscape and the customer base, various efforts must be made by all parties in the Fintech industry. As seen among 81 respondents, 73% of them had policies to hire more women and are expected to hire more women in the next 1-2 years to bridge that gender gap within the workforce.

To address the customer base gap, Fintech company has also started providing special services for women (for example in P2P lending services, where 84% of borrowers are women). This program is implemented through partnerships with the government.

This focus on serving women and women-owned businesses is also supported by a OJK survey⁶⁰ that highlighted support by Fintech companies for women-owned businesses. This 2018 report revealed that 66.7% of P2P or online loan recipients were women and that financial innovation has helped cooperatives partner with female business owners and/or operators.

The government holds the ability in supporting more balanced gender employees and business players via initiatives that could promote Diversity, equity, and inclusion by encouraging more women to participate in the fintech industry, as well as shifting paradigm that both genders are equally capable of managing professional tasks required in the industry by financial literacy and inclusion initiative.

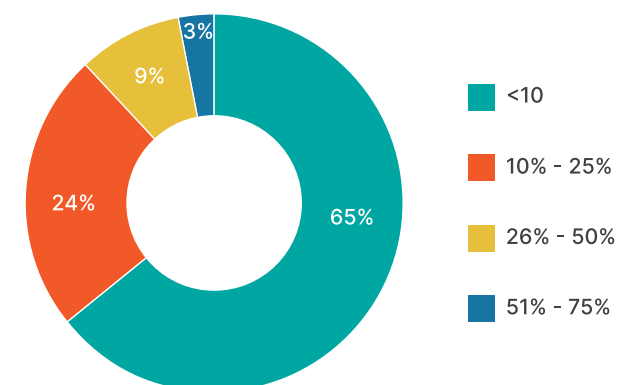
C. Diversity

This section will examine the local vs. overseas graduates in the Fintech industry. This report will solely view this issue from the Fintech companies who have answered this section of the survey. Furthermore, the outlook of hiring preferences will be discussed further.

When asked about the proportion of employees with an overseas degree, 65% of respondents report that less than 10% of their employees had at least one degree from a foreign institution. Hence, the proportion of local talent in the Fintech industry in Indonesia is considered high based on the survey's results.

Figure 10.14: Proportion of Employees with an Overseas Degree

Proportion of Employees with an Overseas Degree

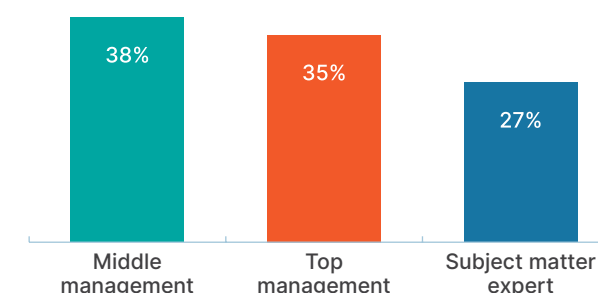


Source: AFTECH members

Based on the survey, 76% of the respondents were not hiring foreign talents. This shows an improvement compared to the figure given in the last year's AMS where 67% of respondents were not hiring foreign talent to address the skills gap. From the 19 companies that employ foreign talent, the foreign employees are primarily placed in middle management (38%) or top management (35%).

Figure 10.15: Position of Foreign Talent

Position of Foreign Employees

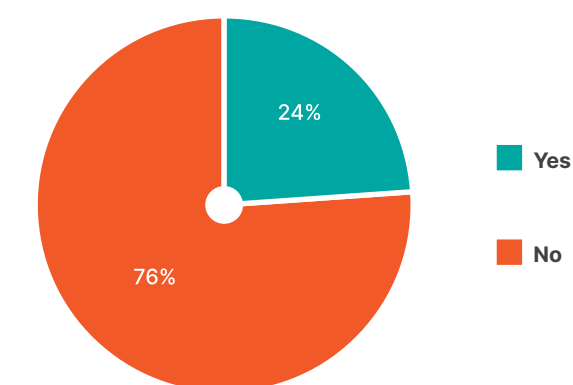


Source: AFTECH members



Figure 10.16: Proportion of Respondents Hiring Foreign Talent

Do You Hire Foreign Talent to Address Skills Gap?



Source: AFTECH members

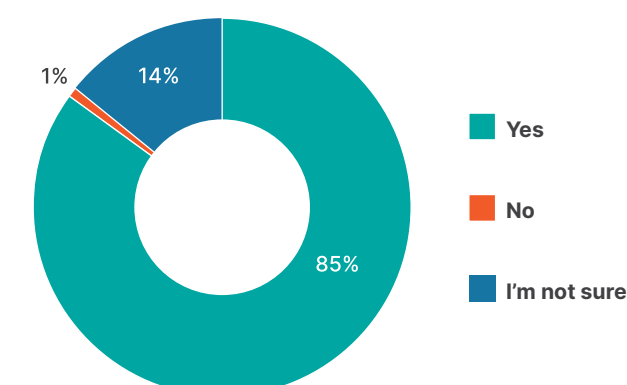
Respondents of the AMS are also planning to hire less foreign talent and shift recruitment focus to local talent. The survey also asked further detailed questions related to the challenges of hiring foreign employees with a total of 19 respondents claimed to have some challenges while having foreign talent in several aspects as follows:

1. High salary (68%)
2. Language (47%)
3. Work culture (63%)
4. Different experience required (37%)

75% of respondents stated plans to hire more local talent in the next 1-2 years.

Figure 10.17: Hiring Plan of Respondents

Do You Plan to Hire More Local Talent in the Next 1-2 Years?



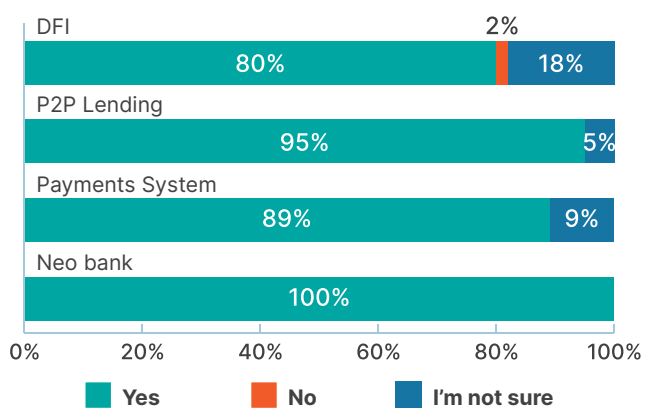
Source: AFTECH members

⁶⁰ Otoritas Jasa Keuangan. 2020. Digital Finance Innovation Road Map and Action Plan 2020-2024. <https://www.ojk.go.id/id/berita-dan-kegiatan/publikasi/Documents/Pages/Publikasi-Materi-Digital-Finance-Innovation-Road-Map-dan-Action-Plan-2020-2024-serta-Digital-Financial-Literacy/Digital%20Finance%20Innovation%20Road%20Map%20dan%20Action%20Plan.pdf>

The shift in preference towards domestic talent is also similar among the different clusters of Fintech, signifying a higher demand for local talent in general. A positive effect of this is the increased pressure to develop the Indonesian talent landscape to ensure that firms do not have to look abroad for recruitment.

Figure 10.18: Hiring Plan of Respondents

Do You Plan to Hire More Local Talent in the Next 1-2 Years?

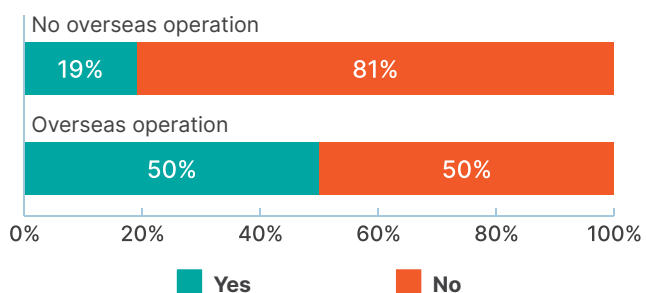


Source: AFTECH members

Company presence abroad also seemingly affects the Diversity of their workforce. When respondents are divided into whether they have a presence abroad, it is clear that there is an increased preference for hiring local talent in each country, possibly due to national regulations restricting the hire of foreign talent as well.

Figure 10.19: Talent composition by Overseas Operation or Not

Do You Hire Foreign Talent to Address Skills Gap?



Source: AFTECH members



11. IMPLEMENTATION OF FINANCIAL INCLUSION STRATEGY

Expanding the availability and increasing the reach of financial services to the public encourages increased activity and economic growth. Fintech is expected to become a significant driver of financial inclusion in Indonesia through innovations, technology utilizations, and partnerships with other financial institutions.

As of right now, Fintech already has a significant role in driving financial inclusion. The majority of respondents have run initiatives to address financial inclusion, financial literacy, and digital financial literacy. 73% of the 81 respondents have said they consciously target the unbanked and underbanked segment in Indonesia. Even though most Fintech players are targeting the unbanked and underbanked segment, there are various customers with the majority of them are already banked. From the current business perspective, 67% of the 86 respondents are already serving rural areas in Indonesia. In implementing those initiatives, collaboration with other stakeholders is crucial.

A. Targeting Unbanked and UnderBanked Segment

• Corporate Initiatives Towards Financial Inclusion

Recent literature has suggested that financial technology platforms tend to be more inclusive. Studies conducted by Bartlett et al. (2018)⁶¹

show that in the United States, certain minority groups suffer a slightly higher discriminatory likelihood of loan rejection by conventional lenders, but not fintech lenders.

The survey found that 73% of 81 respondents directly target the unbanked or underbanked segment amid intense competition with banks. Earlier in the Fintech landscape section, the survey also showed that 69% of Fintech companies already offer services in rural areas.

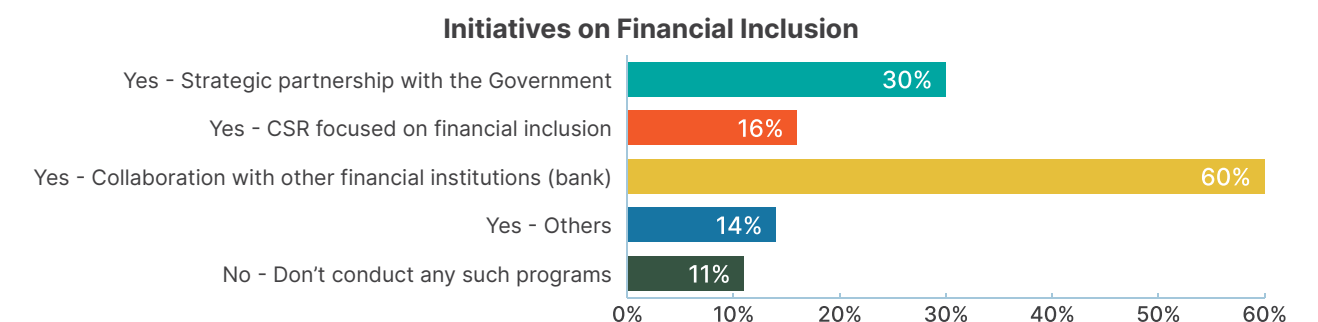
Most respondents already have initiatives in place to address financial inclusion (89% of respondents), financial literacy (85% of respondents), and digital financial literacy (79% of respondents). Regarding the forms of initiative, the most popular among respondents and leading players is a collaboration with financial institutions (banks). Other forms of the initiative are CSR, strategic partnership with the government, and others.

In terms of the form of collaborations with financial institutions, they can be divided into the following activities:

- PR Campaigns
- Seminar/Training-based
- Product-based
- Others

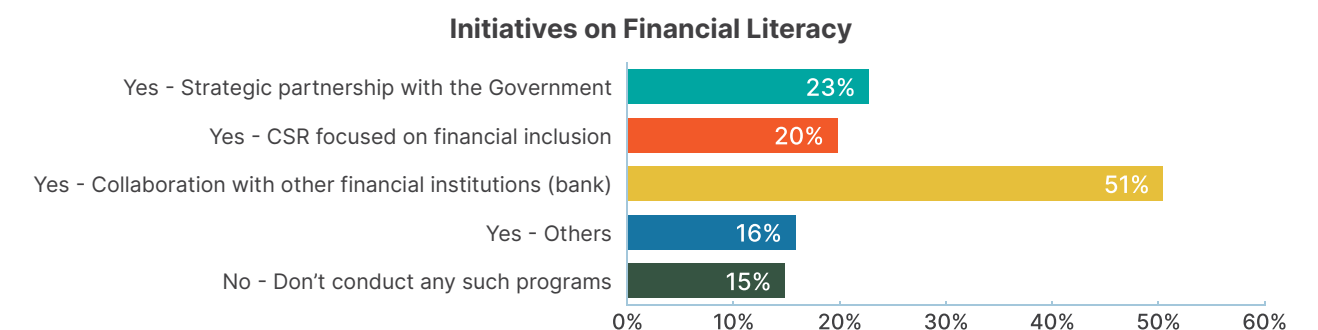
⁶¹ Bartlett, R., Morse, A., Stanton, R., dan Wallace, N. 2018. Consumer-lending discrimination in the era of fintech. *Unpublished working paper. University of California, Berkeley.*

Figure 11.1: Initiatives on Financial Inclusion



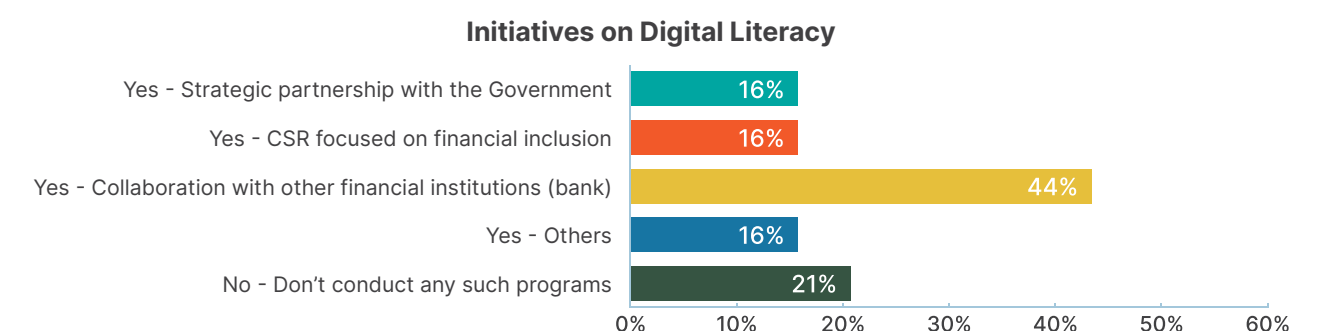
Source: AFTECH members

Figure 11.2: Initiatives on Financial Literacy



Source: AFTECH members

Figure 11.3: Initiatives on Digital Literacy



Source: AFTECH members

Figure 11.4: Most Popular Type of Collaboration with Banks for each Challenge



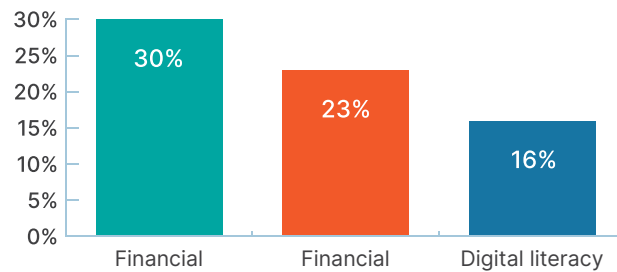
Challenge	Most Popular Type of Collaboration with Banks
Financial Inclusion	Product-based (86%) Seminar/Training-based (35%) PR Campaign (20%) Others (2%)
Financial Literacy	Product-based (80%) Seminar/Training-based (51%) PR Campaign (24%) Others (0%)
Digital Literacy	Product-based (80%) Seminar/Training-based (49%) PR Campaign (31%) Others (0%)

- **Government Support on Financial Inclusion with Fintech**

The survey results show the proportion of respondents who have established strategic partnerships with the government to address financial inclusion, financial literacy, and digital literacy are as follows:

Figure 11.5: % of Govt Partnership on Financial Inclusion, Financial Literacy, Digital Literacy

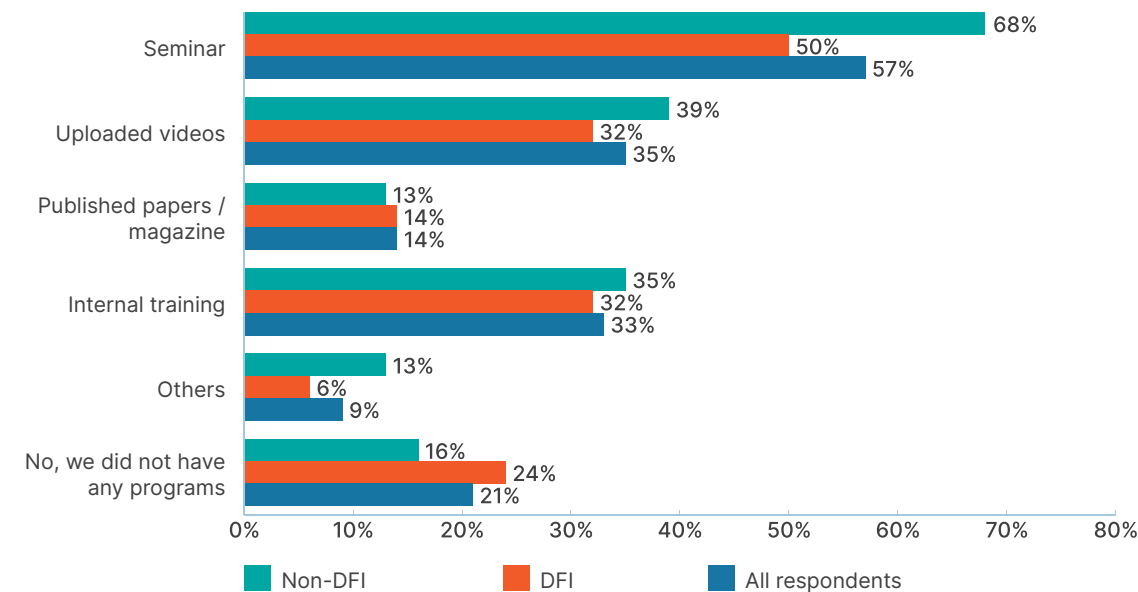
Conduct Strategic Partnership with Government



Source: AFTECH members

Figure 11.6: Financial Literacy Education Programs held (July 2020 – June 2021)

Financial Literacy Education Programs Held (July 2020 - June 2021)



Source: AFTECH members

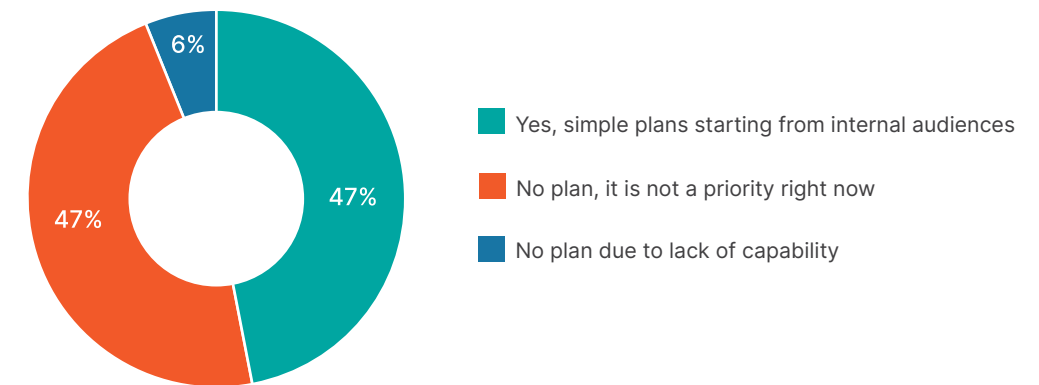
B. Action needed to Address Challenges in Financial Inclusion

Based on the survey, only 11% of 80 respondents reported having carried out government projects (e.g. CSR and Bansos) between July 2020 and June 2021.

Regarding the financial literacy education programs, out of 81 respondents, 57% of them claimed to have done seminars related to financial literacy. Out of those respondents who do not have any such programs, 47% plan to develop programs on financial literacy.

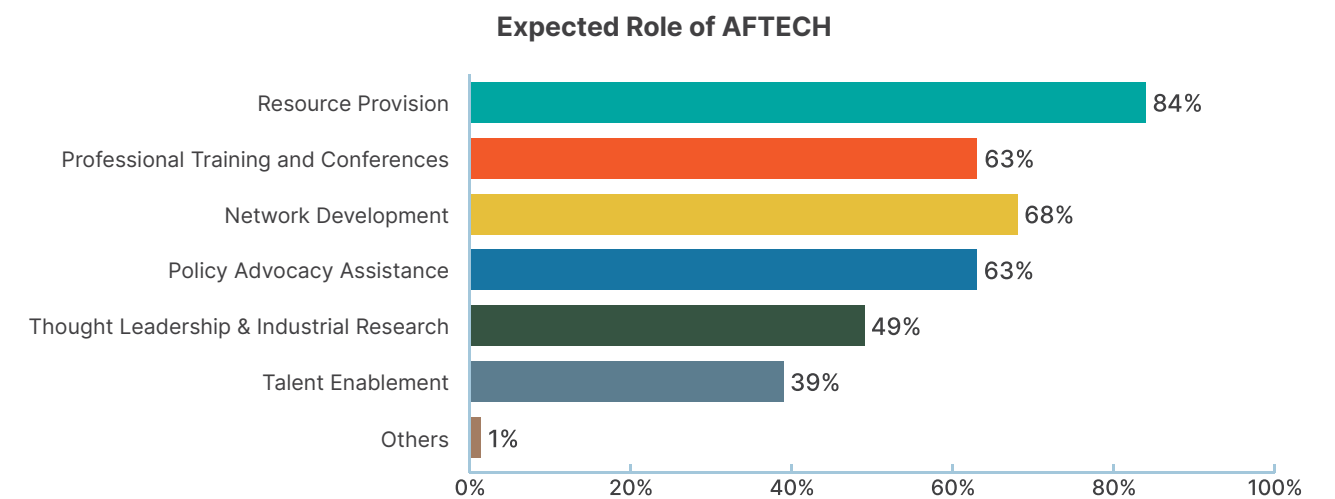
Figure 11.7: Plans for Financial Literacy Programs

Plans for Financial Literacy Education Programs



Source: AFTECH members

Figure 11.8: Expected Role of AFTECH in the Industry



Source: AFTECH members

To understand the expectations of Fintech companies towards AFTECH, respondents were asked about their views on the association. Out of the 79 AFTECH members that gave their answers regarding this matter, 95% of respondents believe that AFTECH has helped the Indonesian Fintech industry.

Regarding the expected role of AFTECH in the future, 84% of respondents answered provision of resources, 68% said it would be in-network development, and 63% chose professional training and conferences. These expectations of the role of AFTECH from all respondents and leading players in developing the Indonesian Fintech industry are in line with the functions that other countries' Fintech associations play.



12.

FINTECH DURING THE COVID-19 PANDEMIC

The COVID-19 pandemic that has occurred for the two past years has harmed the global economy, and business performance in various sectors, including the fintech industry. The pandemic has triggered not only the global health condition but also the economic and social crises. Based on the survey results, 35% of respondents stated that usage of their products/services was negatively affected by the COVID-19 pandemic. The ways that Fintech companies have been negatively affected include: (i) declining number of users in some Fintech business models, (ii) lower sales for some business models; (iii) operational challenges, including lower productivity and efficiency; (iv) difficulties in fundraising; and (v) delay in business expansion.

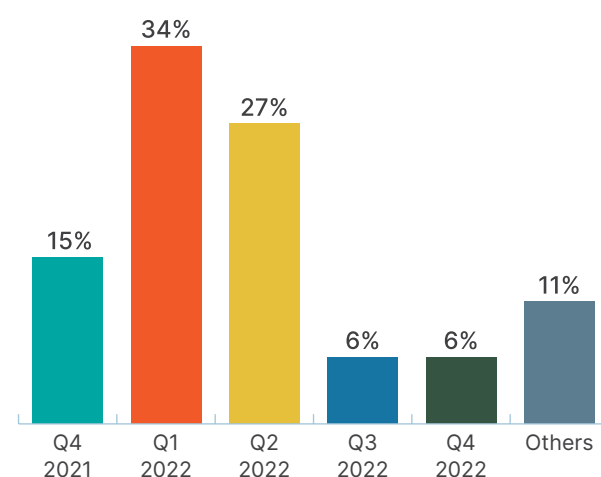
The pandemic has changed the overall world order that is not limited to customer behavior, but mainly by the use of cashless payments, working from home, and increased use of e-commerce, which are favorable for the Fintech industry. As a result, Fintech companies have opportunities to increase their customer base and product or services utilization from existing customers. Adding on to this, 81% of respondents also believe that these changes are permanent and that consumer behavior will not return to pre-pandemic conditions.

A. COVID-19 Pandemic Effect on Fintech Industry

The pandemic has brought opportunities and challenges to the Fintech sector. However, it is useful to note that a significant portion of respondents (76% of respondents) expect the Fintech sector to recover by Q2 2022 at the latest.

Figure 12.1: Recovery Prediction

Expected Recovery Time (All Respondents)



Source: AFTECH members

Based on the survey results, the following are the negative impacts that respondents experienced due to the pandemic:

1. Delay in business expansions (62%)
2. Lower sales for some business models (54%)
3. Operational challenges, including lower productivity and efficiency (43%)
4. A declining number of users in some Fintech business models (27%)
5. Difficulties in fundraising (26%)
6. Others (3%)

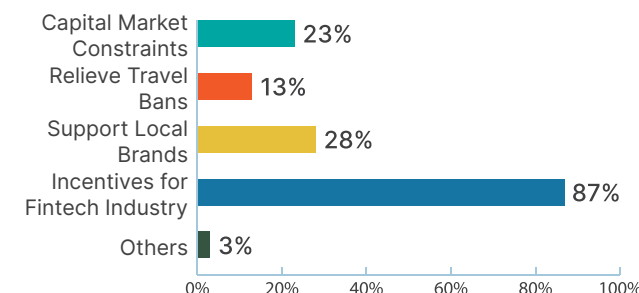
In terms of product usage, 35% of respondents reported that product usage has lowered due to the pandemic, while 39% of respondents reported that it has increased.

Regarding the support that the government has given due to the pandemic, 73% of the respondents confirmed that they received government support. They explained that the

main form of support were incentives for the Fintech industry (87%) and support for local brands (28%).

Figure 12.2: Government Support Needed

Government Support Needed



Source: AFTECH members

To minimize the impact of the pandemic on their business, several mitigation measures were implemented as follows:

- i. Strengthening cash management (61%)
- ii. Delaying business expansion (53%)
- iii. Lay-offs (18%)
- iv. Imposing unpaid leave and salary deductions (15%)
- v. Pivoting (15%)
- vi. Others (6%)

It is interesting to note that the responses of Fintech companies differ with the level of maturity that they have achieved since their establishment. When categorized by years of operation, older companies are more likely to respond to the pandemic by delaying business expansions while younger organizations are more likely to implement workforce lay-offs.



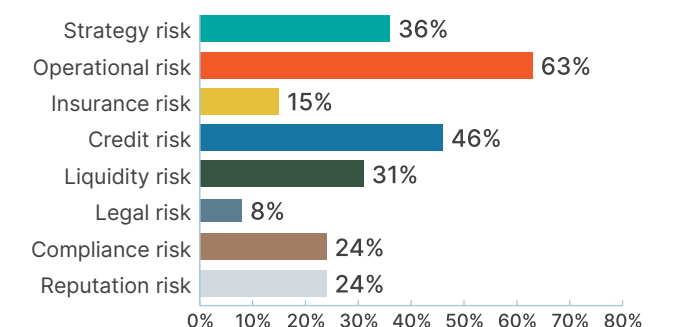
Figure 12.3: Most Popular Mitigation Method by Year of Establishment

Year Established	Most Popular Mitigation Method
2000	Strengthening Cash Management
2005	Delaying Business Expansions
2006	
2007	
2013	Strengthening Cash Management
2014	Strengthening Cash Management and Lay-offs
2015	Delaying Business Expansions
2016	Strengthening Cash Management
2017	Strengthening Cash Management
2018	Delaying Business Expansions
2019	Strengthening Cash Management
2020	
2021	

Throughout the pandemic, Fintech companies have experienced an increase in risks. The survey asked about the risks perceived during the pandemic. Based on the results, the top three most prevalent risks are operational risk (63%), strategy risk (36%), and credit risk (46%).

Figure 12.4: Top Risks Faced Due to COVID-19

Risk Faced Due to COVID-19

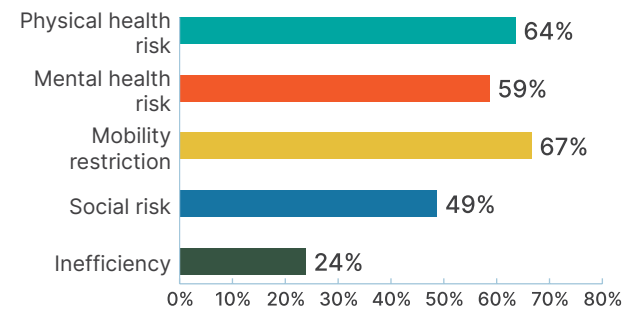


Source: AFTECH members

Outside of business risks, respondents also identified other risks that have affected them throughout the pandemic. Based on the results, the most prevalent risks are Mobility Risk (67%) and Physical Health Risk (64%).

Figure 12.5: Other Risks Faced Due to COVID-19

Other Risk Due to COVID-19

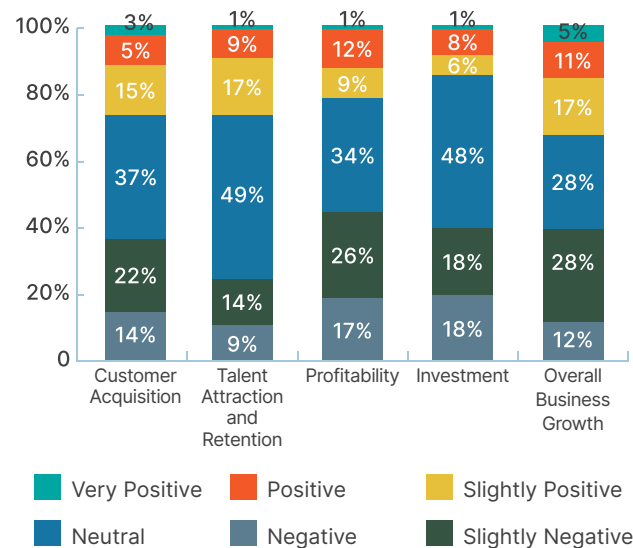


Source: AFTECH members

Looking at how the pandemic has affected business, 27% of respondents reported that customer acquisition has been positively impacted. Despite this, 35% of respondents reported that overall business growth had been negatively impacted.

Figure 12.6: Impact of Pandemic on Business Areas

Impact of Pandemic on Business Areas



Source: AFTECH members

The survey results indicate that 32% of respondents experienced a positive impact on overall business growth due to the pandemic and 39% of respondents experienced an increase in usage of their products/services. To sustain

and keep growing their businesses during the pandemic, 61% of respondents responded by strengthening their cash management, while 63% of respondents saw an increased operational risk.

The Cambridge Centre for Alternative Finance, the World Bank, and the World Economic Forum⁶² conducted a study into how the COVID-19 pandemic has affected the global Fintech industry. To do so, they surveyed 1,385 firms in 169 countries between June and August 2020. They found that Fintech companies in emerging and developing markets had higher transaction volume growth than those in advanced economies, but also experienced more operational challenges and costs.

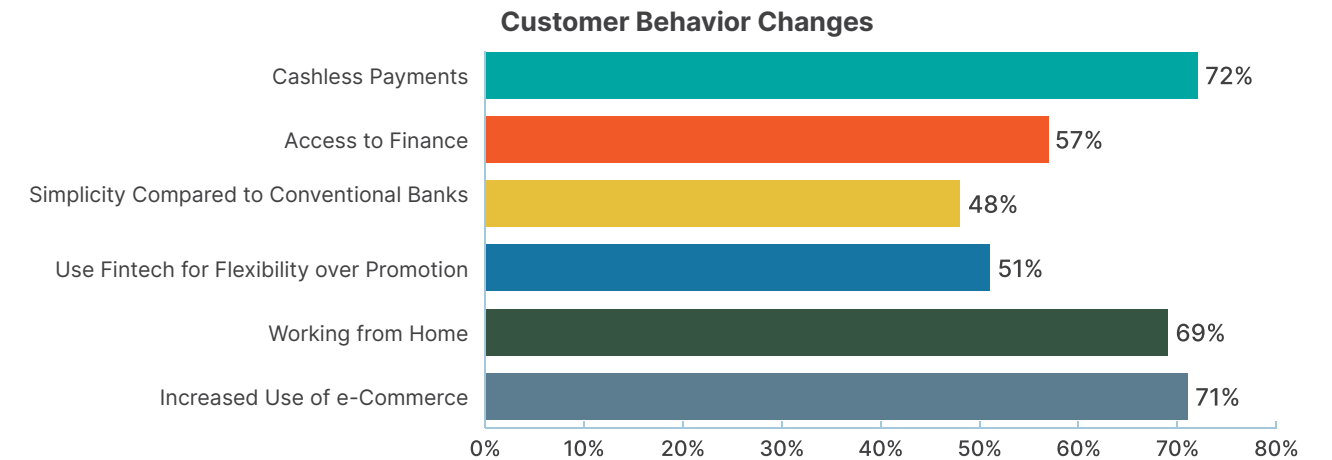
Overall, the Indonesian Government has played a major role by releasing regulations through OJK and the Bank of Indonesia to address the economic downturn caused by the pandemic. Looking forward, the Indonesian Government should continue to issue initiatives that support the development of Fintech industries in Indonesia, especially during an economic crisis.

B. Customer Behavior Changes

84% of respondents witnessed customer behavior to have changed during the pandemic, with the most popular changes being the shift to cashless payments, working from home, and increased use of e-commerce.



Figure 12.7: Customer Behavior Changes



Source: AFTECH members

A majority of respondents believe that changes to consumer behavior due to the pandemic are permanent, with 81% of respondents believing that they do not see any return to pre-pandemic situations. In the 2021 EY Future Consumer Index study⁶³, 43% of global respondents mentioned the way they banked has changed due to the pandemic. However, only 24% expect banks to be more digital in the next 1-2 years and just 16% said that the way they bank would change long-term.

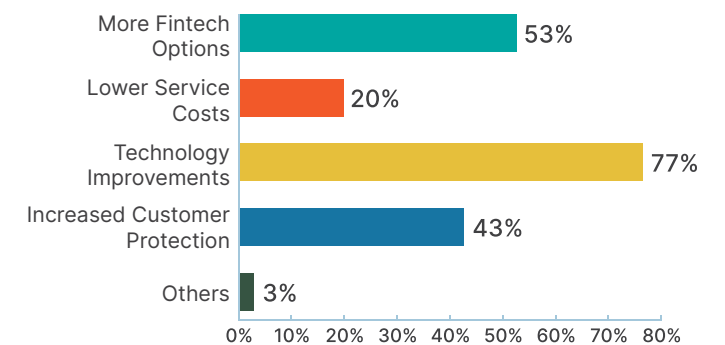
The way that consumers have completed payments has also changed, with a 57% fall in cash usage and a 14% net rise in online payment tools. Flexibility and security are also becoming increasingly important for consumers, with 27% agreeing that banks will be more flexible in the next 1-2 years.

C. Potential Changes Post-Pandemic

Regarding future perceptions of the Fintech industry, respondents envisioned technology improvements to Fintech platforms (77%), more Fintech options within the same company (53%), and increased customer protection (43%).

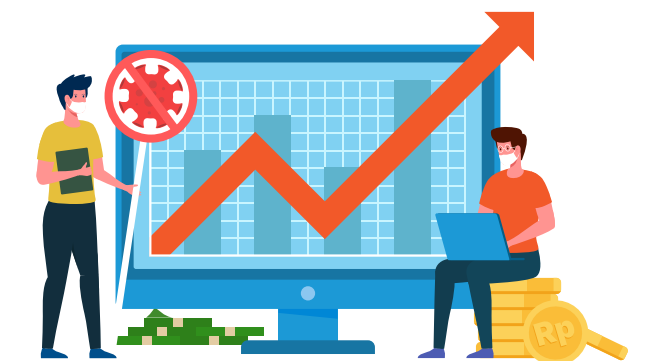
Figure 12.8: Potential Changes Post-Pandemic

Potential Changes Post-Pandemic (All Respondents)



Source: AFTECH members

The responses given are almost similar across all fintech verticals or business models. However, the response is slightly different when respondents are separated into DFI and non-DFI categories. The results are as follows, shown by Figures 12.9 and 12.10:

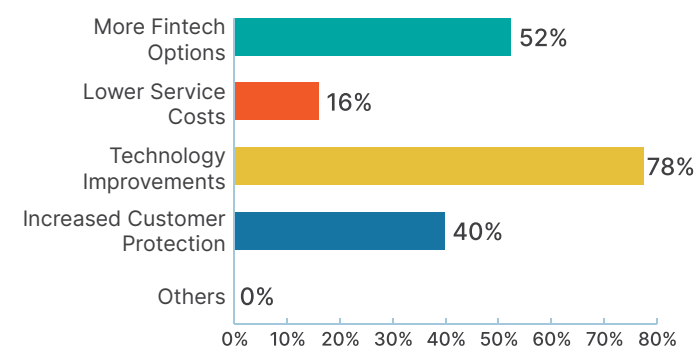


⁶² Cambridge Centre for Alternative Finance, World Bank Group, dan World Economic Forum. 2020. 'The Global COVID-19 Fintech Market Rapid Assessment Study'. <https://www.jbs.cam.ac.uk/faculty-research/centres/alternative-finance/publications/2020-global-COVID-19-Fintech-market-rapid-assessment-study/> (diakses pada 25 Oktober 2021)

⁶³ Bellens, J. 2020. 'Four ways COVID-19 is reshaping consumer banking behavior'. Ernst & Young. https://www.ey.com/en_gl/banking-capital-markets/four-ways-COVID-19-is-reshaping-consumer-banking-behavior (diakses pada 3 November 2021)

Figure 12.9: Potential Changes DFIs

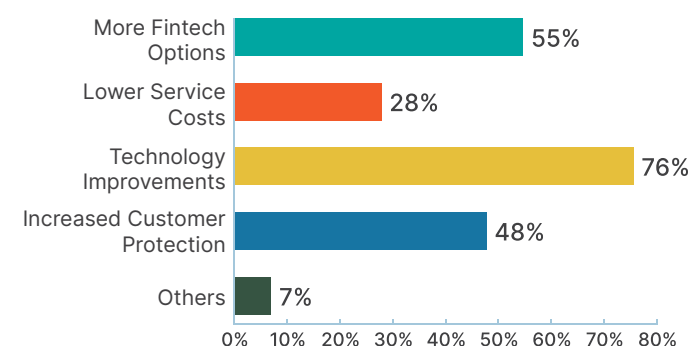
Potential Changes Post-Pandemic (DFI Respondents)



Source: AFTECH members

Figure 12.10: Potential Changes Non-DFIs

Potential Changes Post-Pandemic (Non-DFI Respondents)



Source: AFTECH members

The pandemic has changed the way Fintech players work and is expected to make a further adjustment after the pandemic ends. More Fintech options trigger tight competitions between players, which allows new players to enter the market with new products or services. As for technology improvements, we are expecting more technological improvements as a result of social restrictions during the pandemic.



GLOSSARY

ADB	Asian Development Bank
AFTECH	Indonesia Fintech Association / Asosiasi Fintech Indonesia
AMS	Annual Members Survey
APIX	Application Programming Interface Exchange
APJII	Indonesian Internet Service Providers Association / Asosiasi Penyelenggara Jasa Internet Indonesia
APN	Asian Payment Network
ASEAN	Association of Southeast Asian Nation
ASEAN-6	Singapore, Indonesia, Malaysia, Thailand, Philippines, Vietnam
AUM	Asset Under Management
B2B	Business-to-Business
BI	Central Bank of Indonesia / Bank Indonesia
Bn	Billion
CAGR	Compound Annual Growth Rate
COVID-19	Coronavirus SARS-CoV-2
CSIRT	Computer Security Incident Response Team
DFI / IKD	Digital Financial Innovation / Inovasi Keuangan Digital
DRP	Disaster Recovery Plan
ECF	Equity Crowdfunding
EY	Ernst & Young
Fintech	Financial Technology
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
HNWI	High Net Worth Individual
ICT	Information and communications technology
IDR	Indonesian Rupiah
IP	Internet Protocol
ISO	International Organization for Standardization
IT	Information Technology
Jabodetabek	Jakarta, Bogor, Depok, Tangerang, Bekasi
Kominfo	Ministry of Communications and Informatics of the Republic of Indonesia / Kementerian Komunikasi dan Informatika Republik Indonesia

MAS	Monetary Authority of Singapore
Mn	Million
MolInvestment-BKPM	Ministry of Investment / Indonesian Investment Coordinating Board (Kementerian Investasi Republik Indonesia / Badan Koordinasi Penanaman Modal)
MSME	Micro, Small and Medium Enterprises
NBFI	Non-Bank Financial Institution
Non-DFI / Non-IKD	Non-Digital Financial Innovation / Non-Inovasi Keuangan Digital
OECD	Organization for Economic Cooperation and Development
OJK	Indonesia Financial Services Authority / Otoritas Jasa Keuangan
P2P	Peer-to-peer Lending
PBI	Bank Indonesia Regulation/ Peraturan Bank Indonesia
PDP	Personal Data Protection
PE	Private Equity
PEN	National Economic Recovery / Pemulihan Ekonomi Nasional
POJK	Indonesia Financial Services Authority Regulation / Peraturan Otoritas Jasa Keuangan
Q1	First Quarter
Q2	Second Quarter
Q3	Third Quarter
QRIS	Quick Response Code Indonesian Standard
RegTech	Regulatory Technology
SFA	Singapore Fintech Association
SGD	Singapore Dollar
Tn	Trillion
TPAKD	Tim Percepatan Akses Keuangan Daerah
UK	United Kingdom
UOB	United Overseas Bank
USD	United States Dollar
VC	Venture Capital
WEF	World Economic Forum
YoY	Year on Year



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