

## AN OVERVIEW OF INDONESIAN FINTECH APPLICATION

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**Abstract:** *The development of information technology has penetrated into a number of fields including financial services. Economic growth and the convenience offered by information technology-based devices such as smartphones have changed the face of the Indonesian economy towards a digital economy and involved FinTech. This study aims to find out how much Sharia-based FinTech services exist in Indonesia as the largest muslim country in the world. The author uses data released by the Financial Services Authority (OJK) as of August 2019. From this data, it can be seen that FinTech companies registered and licensed in Indonesia are still dominated by FinTech which operates conventionally. But in terms of utilizing the latest technology, FinTech companies in Indonesia have mostly used information technology, both Android and IOS based. Last but not least, the most used social media by Indonesia Fintech is Facebook. By looking at this study, it is hoped that the authorities and interested parties can take a step forward in order to increase penetration of information technology-based FinTech in Indonesia.*

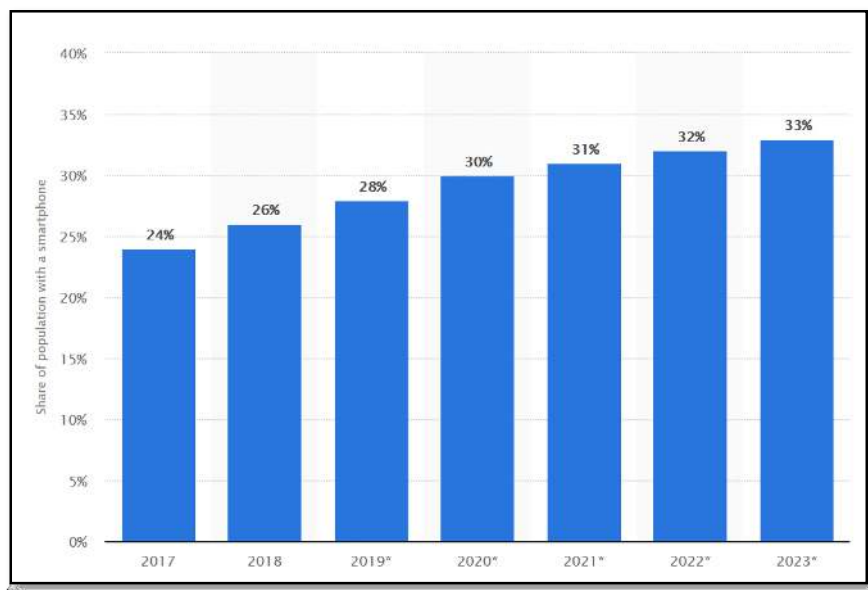
**Keywords:** *e-Commerce, Information and Internet Services, Computer Software, FinTech, Technological Innovation, Technological Change, Technological Innovation.*

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### Introduction

The development of information technology (IT) has opened up a number of opportunities and expansions. One of the rapidly developing IT technologies is the presence of smartphones. In 2018, 28 percent of Indonesia populations are smartphone users (see figure 1). With high speed, unlimited storage capacity, and various conveniences offered, IT has become a central trend of various aspects of life. A number of IT-based terms have been widely used. In the field of government the term e-Government is known. In the field of education the terms emerge as e-learning, blended learning or distance learning (Abdillah, 2016). Business and trade sectors are also rife with a number of the latest finals such as e-Commerce, online shopping, and market places. In the financial sector, the trend is now the term Financial Technology (FinTech).

Internet and smartphone have changed the behavior of people in shopping (Abdillah *et al.*, 2017). Furthermore, smartphones have formed a new digital market formation (Pitt *et al.*, 2011). E-commerce is a world phenomenon affecting business and social life throughout the globe (Laudon & Traver, 2017). The existence of a smartphone has a big influence on the growth of e-commerce today. Smartphones have added terminology and business models now known as mobile commerce or m-commerce (Choi *et al.*, 2014). In Indonesia the trend of the number of smartphone users continues to increase (Figure 1).

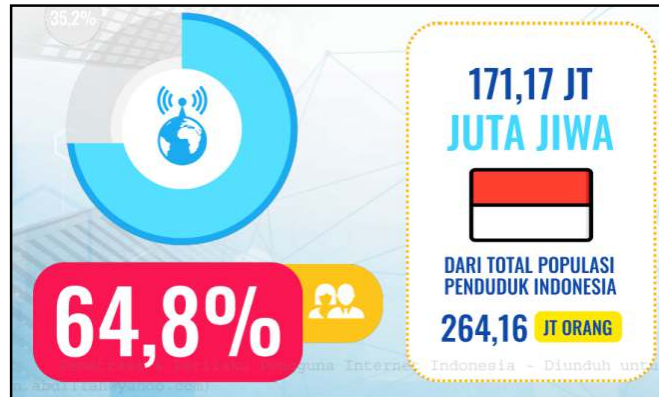


**Figure 1: Indonesia Smartphone Users 2018 (Statista, 2019)**

E-commerce is increasingly booming because of the level of public trust (Gefen, 2000) and in the security of transaction services via the internet. Online transaction services have been equipped with a number of technologies that enable transactions to be very secure. Security in online transactions is an absolute requirement so that business processes can run well and smoothly. It can increase the level of convenience and ease in making payments (Abdillah *et.al*, 2017). The more secure transactions that are carried out on online transactions, the level of convenience of the customers will increase.

Advances in information technology and communication devices have changed the business process of financial transactions. If previously many financial transactions were carried out directly or face to face, then shifted to transactions with systems that involved cables, and now the trend is shifting to online transactions. In online transactions, both customers and sellers will carry out transactions through a number of applications and devices that support the FinTech application. Transaction trends with FinTech have transformed the world economy and Indonesia into a digital economy.

Indonesia is the main country in ASEAN with a predominantly Muslim population. In 2019, Indonesia is the world's fourth most populous nation, the world's 10th largest economy in terms of purchasing power parity or PPP (The World Bank, 2019), and a member of the G-20. According to APJII, the penetration of internet users in Indonesia is equal to 171.17 millions people or reach 64.8% (Asosiasi Penyelenggara Jasa Internet Indonesia, 2019). It means that many Indonesians population will use internet for their daily activities including financial transactions.



**Figure 2: Indonesia Internet Users 2018 (APJII, 2019)**

The digital development in Indonesia is very rapid and encouraging. Until 2019 at least there have been 5 (five) startups that have entered the Unicorn category. Unicorn startups that already exist are: 1) Gojek, 2) Traveloka, 3) TokoPedia), and 4) BukaLapak.. And startups that have just joined the big five come from the financial technology sector, namely OVO (Abdillah, 2019).

This paper aims to find out the variety of FinTech services that are developing in Indonesia in general. This study also observes what kind of operating systems used in Indonesia FinTech. The rest of this article consist of 4 (four) more sections; literature review research methods, results and discussions, and conslussion.

## **Literature review**

### **Financial Technology (FinTech)**

The term of FinTech was introduced by (Bower & Christensen, 1995). FinTech itself is short for Financial Technology, which is an adoption of advances in information technology in financial services industry. In the FinTech era, all financial activities were digitalized with internet-based transaction modes and can be accessed with websites or smart devices known as smartphones.

The FinTech market is growing rapidly along with the growth of startups or information technology-based businesses that can directly transact with customers or suppliers without going through direct banking services. The evolution of financial technology has been developing for a long time and can be summarized with some examples as shown in table 1. The first generation is known as "FinTech 1.0" which began around the 1866s (Arner *et al.*, 2015; Wulan, 2017).

**Table 1: Financial Technology Evolution**

Generati on	Period	Notes	Products/Applications
FinTech 1.0	1866 – 1987	From analogue to digital	- Transatlantic cable - Cable Phone
FinTech 2.0	1987 – 2008	Development of Traditional Digital Financial Services	- Credit Cards - ATM - Electronic Stock Trading - Bank Mainframe Computer
FinTech 3.0 FinTech 3.5	2009 – Present	Democratizing Digital Financial Services Emerging Market	- StartUps - Payment Apps - Mobile Wallets - Blockchain - Cryptocurrency

The development of FinTech in Indonesia is still at early stages (Barata, 2019). In Southeast Asia itself, Indonesia is one of the countries whose FinTech market is growing rapidly. For daily retail payment transactions, Gopay and OVO are popular choices, especially among millennials.

The international watchdog and policy recommendations provider on the global financial system, the Financial Stability Board (FSB) divides FinTech into 4 (four) categories based on the type of innovation: 1) Payment, Settlement, and Clearing, 2) Market Aggregator, 3) Risk and Investment Management, and 4) Crowdfunding and Peer to Peer (p2p) Lending.

Financial technology startups will more easily develop in a country when the economy is well developed and venture capital is available. Furthermore, the number of secure Internet servers, cell phone subscription users, and available workforce has a positive impact on the development of new markets for this segment. Finally, it is more for companies to access loans, when the number of startups fintech in the country is still small (Haddad & Hornuf, 2019).

### Unicorn Start-up Companies

In Indonesia, until 2019 there have been at least 5 (five) unicorn startups. They are information technology based companies that are growing rapidly both users and capitalization. A list of the five startup unicorns can be seen in table 2.

**Table 2: The Top Five Unicorn-scale Startup**

No	Unicorn	Basic Category	Establish	Unicorn	Decacorn
1	Gojek	Ride Hailing	2010	2016	2019
2	Traveloka	Travel Agent	2012	2017	-
3	TokoPedia	Market Place	2009	2017	-
4	BukaLapak	Market Place	2010	2017	-
5	OVO	Financial Technology	2016	2019	-

The development of the use of digital media for transaction activities in Indonesia is strongly influenced by the five unicorns. All startup unicorns involve financial technology for their business transactions. For example, Gojek in addition to serving online transportation services also serves the online payment system, Gopay. Furthermore, Gopay which was earmarked for payment for services of Gojek has grown and can be used for payment for other services.

### Indonesia Digital Payment

There are 4 (four) types of FinTech transactions that are developing in Indonesia (Statista, 2019a), namely: 1) Digital Payments, 2) Personal Finance, 3) Alternative Lending, and 4) Alternative Financing (see Figure 3). Most financial technology services in the Indonesian market are digital payments with the number of transactions reached US\$32,442m in 2019.

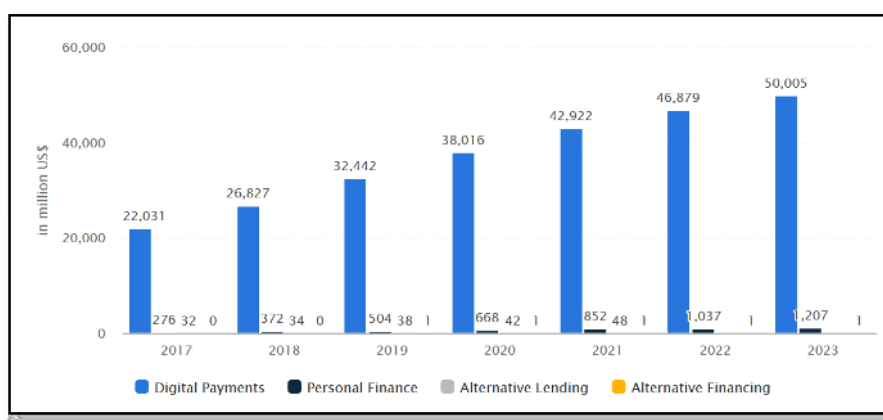


Figure 3: Indonesia FinTech Transaction Value (Statista, 2019a)

## Research Methods

### Research Data

In this study, the author will use FinTech data services registered with OJK. Based on information announced by the OJK as of August 7, 2019, there are 127 FinTech lending companies that are licensed and registered with OJK. The data announced is related to the Platform Name, Website, Company Name, Registered Certificate, Date, Type of Business, and Operating System. Some data also observed from the FinTech website.

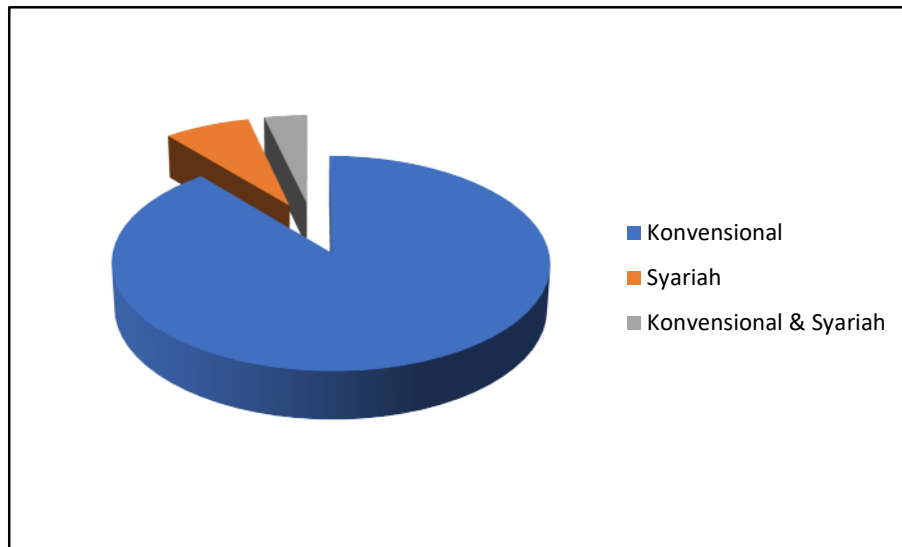
### Research Approach

The approach used in this research is a hybrid of quantitative and qualitative. In quantitative approach, author gathered information from previous report of OJK and FinTech website. The information is then analyzed using a qualitative approach. Author adds some additional resources to enrich the analysis and discussion.

## Results and Discussions

### Indonesia FinTech Business

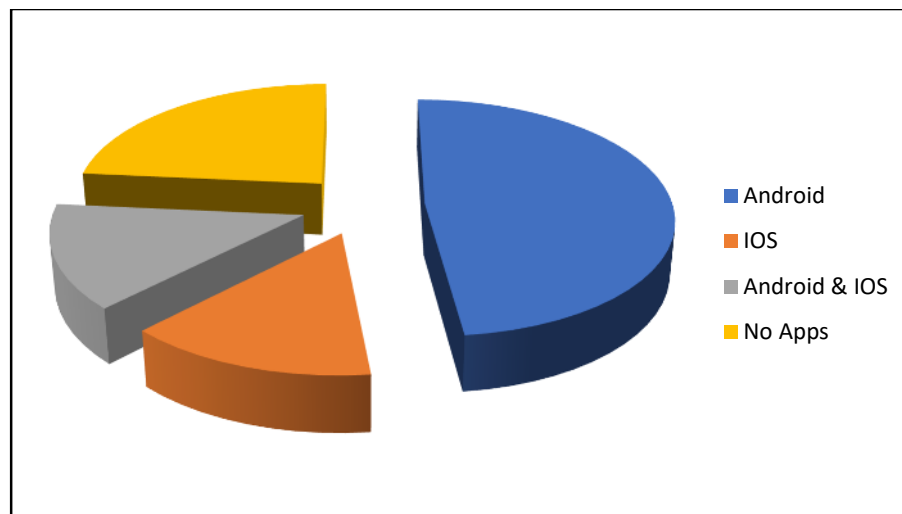
Overall as of August 2019, FinTech registered and licensed in the OJK numbered 127. Of that number moving conventionally amounted to 122 or 96.06%, operating conventionally & sharia totaling 4 or 3.94%, and those only moving by sharia totaling 9 or 7.87% (see figure 4).



**Figure 4: Indonesia FinTech Transaction Value**

### Overall FinTech Operating Systems

FinTech companies that use the Android operating system amounted to 82 or 64.57%, which used the IOS operating system amounted to 24 FinTechs or 18.90%, which used the Andoid & IOS operating system amounted to 24 FinTechs or 18.90%, while those which did not use the mobile operating system amounted to 40 FinTechs or 31.50% (see figure 5).



**Figure 5: Percentage of FinTech-based on Operating System**

### Indonesia FinTech HeadQuarters

Most of the headquarters of FinTech companies are in Java, especially in Jakarta (86,61%) and surrounding areas. There is only one Fintech company headquartered outside of Java, namely Lahan Sikam whose headquarters are in Bandar Lampung City (Sumatra Island). Table 3 shows the recapitulation of FinTech's headquarters location in Indonesia.

**Table 3: Indonesian FinTech Headquarter Location**

No	City	FinTech	Percentage (%)
1	Bandar Lampung	1	0,79
2	Bandung	1	0,79
3	Bekasi	2	1,57
4	Depok	1	0,79
5	Jakarta	110	86,61
6	Surabaya	2	1,57
7	Tangerang	10	7,87

### Indonesia FinTech Social Media Usage

Social media (SM) opens up many new potentials in a number of fields (Abdillah, 2016). Social media is still the choice for FinTech companies to share information about their products. All FinTech companies have websites, but not all FinTech uses social media. Among the existing social media, Facebook is the most widely used social media. The number of Fintech companies that use each social media can be seen in table 4.

**Table 4: Top Social Media used by Indonesia Fintech**

No	Social Media	Total	Percentage (%)
1	Facebook	83	65,35
2	Instagram	72	56,69
3	Twitter	58	45,67
4	LinkedIn	42	33,07
5	YouTube	34	26,77
6	WhatsApp	27	21,26
7	Google+	6	4,72

### Conclusion

From the above data it can be seen that the majority of FinTech companies in Indonesia are still dominated by companies engaged in the conventional field, using the Android operating system, and and still dominant in using Facebook as social media.

Based on the study, author encourages legal Indonesia authority to force the progression of FinTech-based applications in Indonesia. In the future, the existence of FinTech-based financial applications can contribute to the lucrative growth and welfare of the economy for Indonesia's digital economy.

As the largest Muslim population in the world, the Indonesian government should focus more



on encouraging the growth and development of FinTech companies that operate in sharia.

On the other hand, there are still around 18.90% of companies that do not use mobile apps. This needs to be suppressed as small as possible because the trend of smartphone users will be even greater in the future.

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