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**Consumers' Intention to Use Mobile Payment Technology:
A Technology Acceptance Model Perspective**

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Abstract

In 2019, there are 42.98 million of mobile payment users, with a total transaction of US\$ 607.2 million. With more than 64% of Indonesia citizen connected to the internet and supported by more than 80 million of smartphone user in Indonesia mobile payment providers are predicted to have 75.87 million users with a total transaction of US\$ 2,438.5 million in 2023.

Currently, there are 42 mobile payment providers in Indonesia with GoPay and OVO as the market leader. GoPay has the biggest market share of 30% of e-money transaction in Indonesia, while OVO followed closely. Factors may influence consumers' intention to use mobile payments, as can be predicted by using Technology Acceptance Model 3. This model explains how the variables of Perceived Usefulness and Perceived Ease of Use can influence consumers' intention.

GoPay and OVO are considered as top of mind in mobile payment platform, with similar ecosystem but a little difference in strategy. GoPay is embedded inside Gojek super app, while OVO is a single mobile payment app. It is interesting to predict who can maintain consumers' loyalty to defend their market share.

Keywords: Technology Acceptance Model, Perceived Usefulness, Perceived Ease of Use, GoPay, OVO

INTRODUCTION

Technology is evolving, becoming more and more sophisticated. Every technology created in order to help people by simplifying complicated works, shortening duration, etc. Right now, every life aspect is affected by technology including financial industry, as known as financial technology (Fintech). Using Fintech, e-wallet is now available in our phone to be used as mobile payment.

Mobile payment technology in Indonesia has grown rapidly in two years. Currently there are 42 mobile payment providers exist in Indonesia (Bank Indonesia, 2020). This phenomenon happened since the huge number of internet and smartphone users in Indonesia. There are more than 64% of Indonesian citizen connected to the Internet (Asosiasi Penyelenggara Jasa Internet Indonesia, 2019), while there are more than 80 million of smartphone user in Indonesia (Muller, 2020). Using that potential, mobile payment providers have gained 42.98 million users in 2019, with a total transaction of US\$607.2 million. These numbers are predicted to be growing rapidly in nominal, estimated with 75.87 million users, followed with a total transaction of US\$ 2,438,5 million in 2023 (Statista, 2019).

Regarding this competition, GoPay and OVO are considered as the market leader from 42 mobile payment providers (Devita, 2019; Bank Indonesia, 2020). To be accepted by consumers, they affiliate with other service such as market places, online transportation, and retails are effective to gain consumers' interest. This strategy can be explained by Technology Acceptance Model 3, measuring perceived usefulness and perceived ease of use which can influence consumers' intention (Venkatesh & Bala, 2008; Lai, 2017).

GoPay: From transportation to become a multipurpose e-wallet

Gojek was established in Indonesia in 2009 by PT Aplikasi Karya Anak Bangsa, but as of now, Gojek operates in Southeast Asia including Vietnam, Singapore, Thailand and Philippines. Gojek is the first Indonesian unicorn company and the country's first decacorn company, the first and leading ride-sharing application for transport, food and package delivery, and some other services. On March 17, 2020, Gojek received \$1.2 billion, bringing total funding for its F-Series round to almost \$3 billion (Neo, 2020).

Having a big ecosystem, Gojek established its own payment method called GoPay. It has become one of Indonesia's leading e-wallet, entered the market and competing with existing country's largest lenders; Bank Mandiri's e-Money, Bank Central Asia's Flazz, and telecom firm Telkomsel's T-Cash. Whilst the others still maintain the existence of physical smart card, GoPay started its business by its own mobile platform. GoPay started as an e-wallet dedicated for all Gojek services, such as ride-hailing, food order, package delivery, and many more. In 2018, GoPay transactions constituted 30 percent of overall e-money transactions in Indonesia (Setyowati, 2019).

OVO: Affiliates with tech-giants

OVO is a digital payment service based in Jakarta, Indonesia which was established based on 2016 by Lippo Group under PT Visionet Internasional. It is a mobile payment platform that offers payment service, loyalty points, and smart financial services with affiliated merchants, business partners, and members in its ecosystem. One of the biggest partners of OVO is Grab and e-commerce platform Tokopedia. This makes OVO become the leading digital payment service in Indonesia based on transaction value. OVO is valued about \$2.9 billion as of

October 2019 and is the fifth unicorn in Indonesia after ride-hailing company Gojek, Traveloka, Bukalapak, and Tokopedia with over 110 million people used OVO (Setyowati, 2019).

TECHNOLOGY ACCEPTANCE MODEL

In 1970's, the needs of growing technology increase failures of system adaptations in organizations. This created a new area of interests, such as predicting system use. In 1985, Fred Davis proposed the Technology Acceptance Model (TAM) in his doctoral thesis. Davis stated that system use can be explained or predicted by user motivation (Figure 1), which in turn, directly influenced by external stimulus consisting the actual system's features and capabilities (Chuttur, 2009).

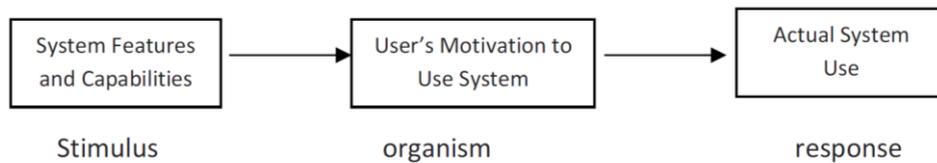


Figure 1. Conceptual model for technology acceptance (Davis, 1985)

Based on Figure 1, a stimulus is created by application developer. It consists of system features and capabilities, which should be developed to fulfill consumers' needs. These stimuluses will determine users' motivation to use the system or the application. The actual system use is the actual condition of market share achieved by OVO & GoPay.

However, by further research, Davis refined his proposal and suggested that users' motivation can be explained by three factors: *Perceived Ease of Use*, *Perceived Usefulness*, and *Attitude Toward Using* the system (Figure 2). The attitude of the user was a major determinant whether the user will actually use or reject the system, which driven by perceived usefulness and perceived ease of use. Davis defines perceived usefulness as the prospective users' subjective probability that using a specific application system will enhance his or her job or life performance. Perceive ease of use can be defined as the degree to which the prospective user expects the target system to be free of effort (Chuttur, 2009).

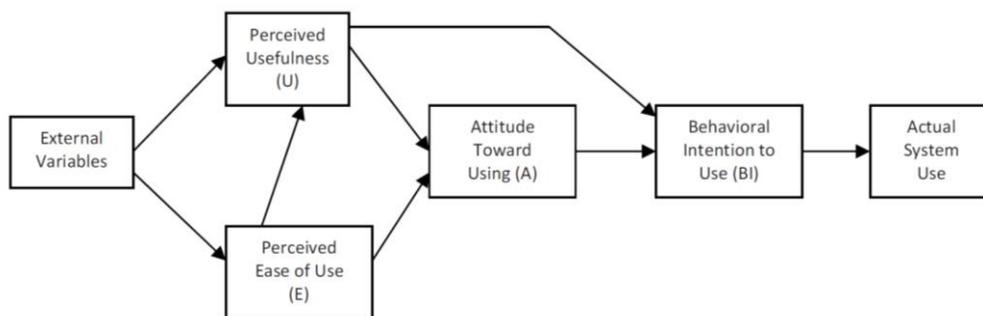


Figure 2. First modified version of Technology Acceptance Model (TAM) (Davis et al., 1989)

Based on Figure 2, both factors of Perceived Usefulness (U) and Perceived Ease of Use (E) are influenced by external variables, such as social factors, cultural factors, and political factors. Social factors include language, skill, and facilitating conditions, while political factors include impact of using technology in politics and political crisis (Chuttur, 2009). Cultural factors may also influence since not every single consumer is open to new technology introduced.

A research conducted by Davis et al. in 1989 showed that both Perceived Usefulness and Perceived Ease of Use are in correlation, with both of them influenced Attitude Toward Using (A). Perceived Usefulness was indicated to have a direct influence towards Behavioral

Intention to Use (BI). However, Perceived Ease of Use was found to have an influence towards Perceived Usefulness over time. It means that Perceived Ease of Use also determine how consumers measure an application's usefulness (Davis *et al.*, 1989).

In 1996, Venkatesh & Davis simplified Technology Acceptance Model (Figure 3). This research conducted to find the influence created by Perceived Usefulness and Perceived Ease of Use of Use.

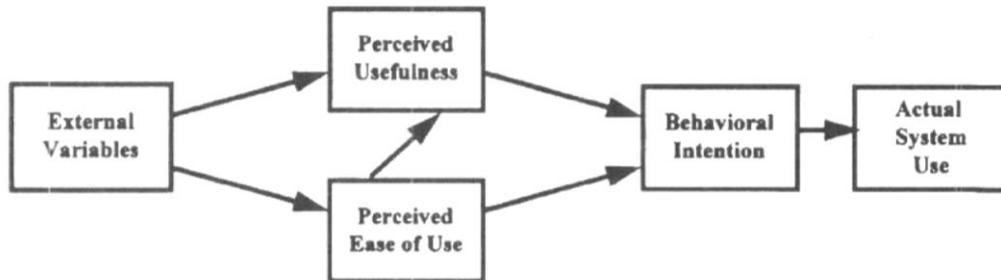


Figure 3. Final version of TAM (Venkatesh & Davis, 1996)

As seen in Figure 3, both Perceived Usefulness and Perceived Ease of Use both have direct influence toward Behavioral Intention thus eliminated Attitude Towards Use (Venkatesh & Davis, 1996). Based on the first conceptual framework, TAM was later modified to provide more detail explanations of how consumers found a system is useful. This later called as TAM 2 as shown in Figure 4.

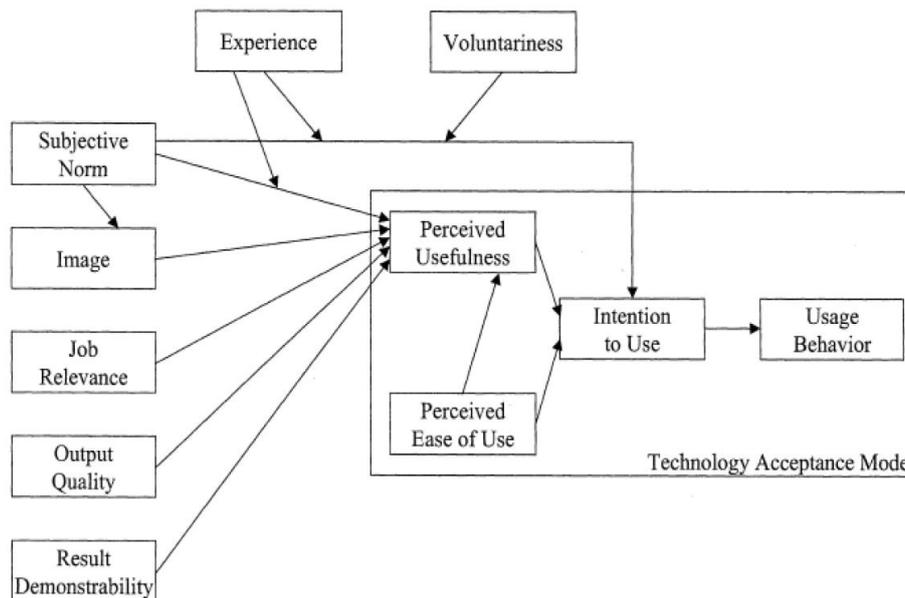


Figure 4. Technology Acceptance Model 2 (Venkatesh & Davis, 2000)

From Figure 4, it was indicated that some variables influenced Perceived Usefulness. Subjective norm was found that it had direct influence toward Intention to Use, which affected by experience and voluntariness. The other factors such as image, job relevance, output quality and result demonstrability were found to have influence toward Perceived Usefulness. Consistently with the first TAM, Perceived Ease of Use affected Perceived Usefulness (Venkatesh & Davis, 2000).

A notable refinement of the TAM model was proposed in 2006 by McFarland and Hamilton as shown in Figure 5. Their model assumes that 6 contextual variables (prior experience, other's use, computer anxiety, system quality, task structure, and organizational support) affect the dependent variable system usage through 3 mediating variables (computer efficacy, perceived ease of use and perceived usefulness).

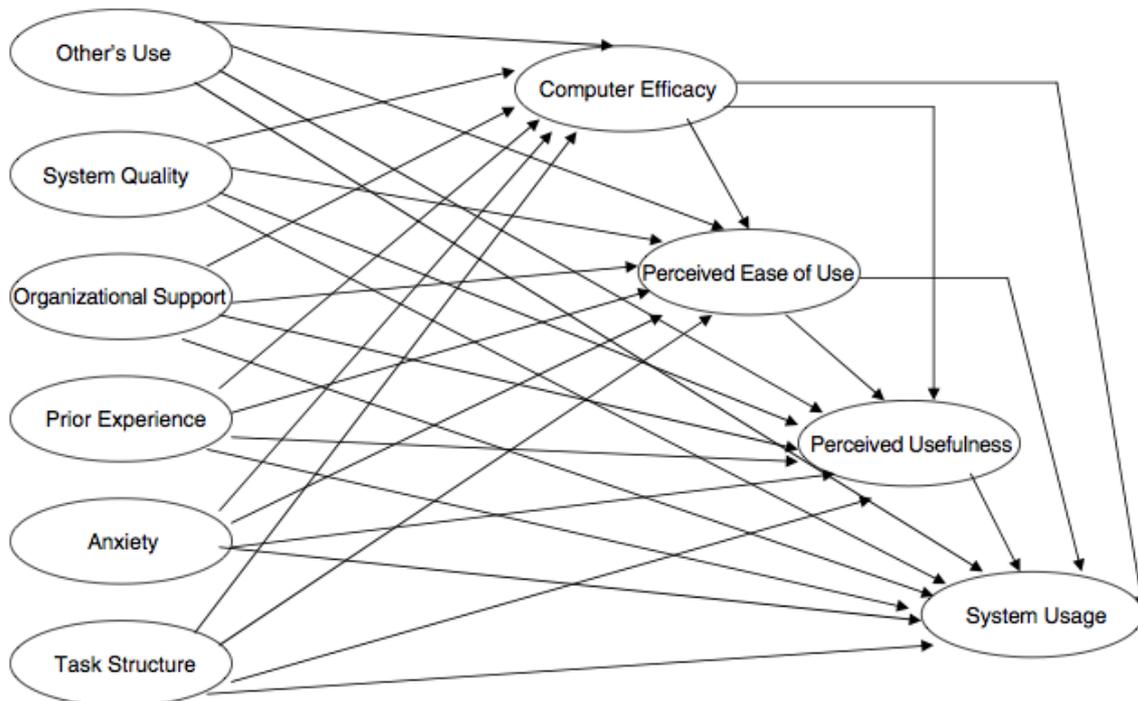


Figure 5. Adding contextual specificity to the TAM (McFarland & Hamilton, 2006)

This refined model shows direct relations between the external variables and system usage. The results comforted the research model, showing that system usage was directly and significantly affected by task structure, prior experience, other's use, organizational support, anxiety, and system quality (McFarland & Hamilton, 2006).

Computer efficacy became a factor in this model, because technology is tightly related with computer, or smartphones in mobile payment platform. All factors are translated as input, such as typing on the keyboard, voice input, or any other commands to execute any programs embedded. Smartphones will process all the inputs, and will provide some feedbacks in graphical user interface as seen in screen. For an example, input could be described as typing some number to be transferred. Thus, the output will be the same number in the screen, waiting confirmation to be transferred. This smoothness of process will create impression, or known as user experience. This will point directly to Perceived Ease of Use and Perceived Usefulness, the higher the number, the higher the system usage will be.

Technology Acceptance Model 3: The latest conceptual framework

The latest TAM, also called as TAM 3 was more comprehensive than its predecessors. Some factors were found to have influence towards Perceived Usefulness in TAM 2. While this model explained some factors believed to have some influence towards Perceived Ease of Use as shown in Figure 6.

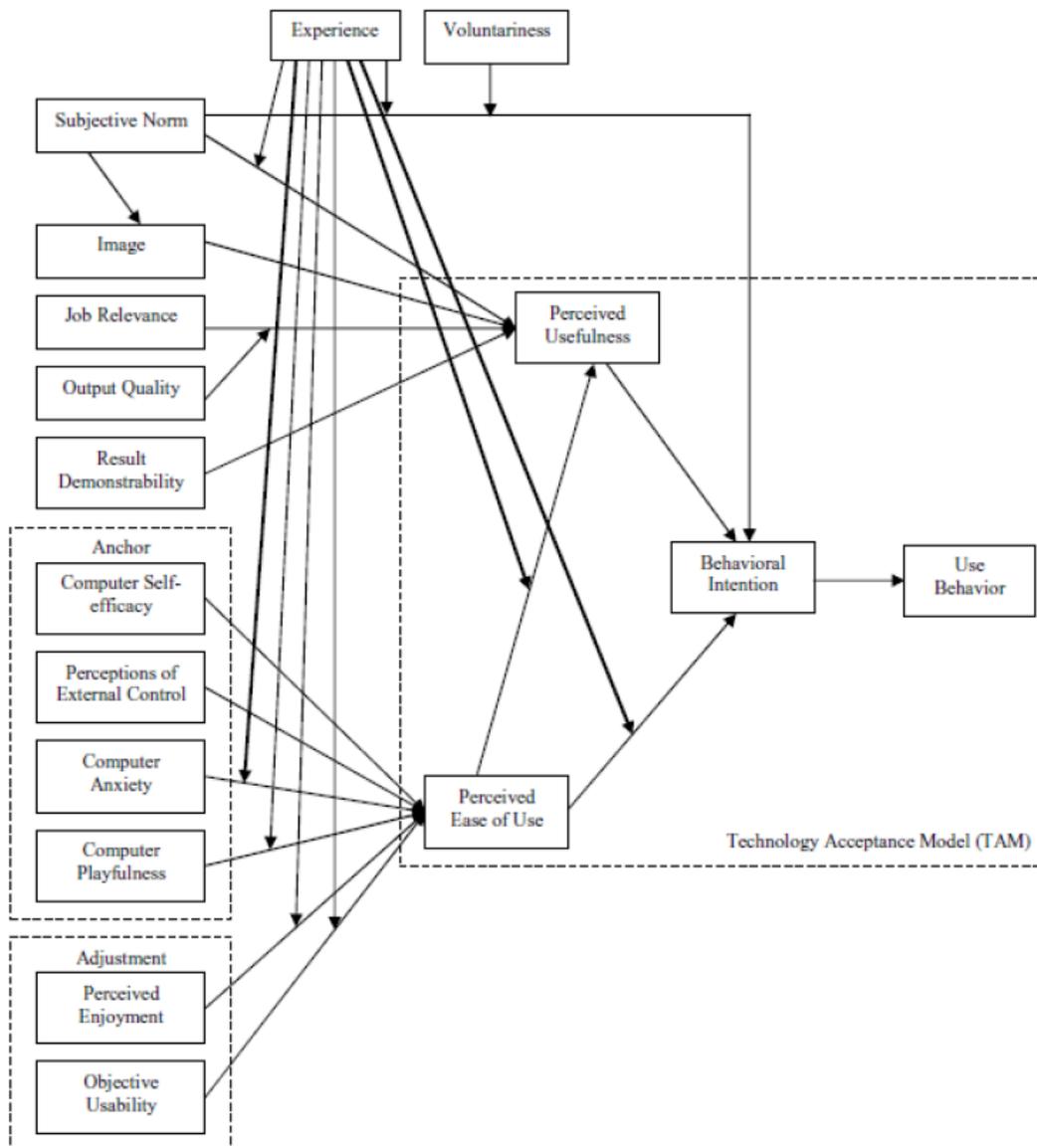


Figure 6. Technology Acceptance Model 3 (Venkatesh & Bala, 2008)

As seen in Figure 6, output quality is now affecting job relevance, while no longer has direct influence towards Perceived Usefulness. Some factors classified into two groups – Anchor and Adjustment – are found to influence Perceived Ease of Use. Computer self-efficacy, perception of external control are the anchor factors influence Perceived Ease of Use, while computer anxiety and computer playfulness are influenced by subjective experience in the process. Some factors called adjustment, including perceived enjoyment and objective usability are found to have influence towards Perceived Ease of Use with experience as moderator (Venkatesh & Bala, 2008).

TAM is a theory that has gone through a number of changes and is one of the most popular research models to predict use and acceptance of information systems and technology by individual users. Although the initial TAM model was empirically validated, it explained only a fraction of the variance of the outcome variable, IT usage. Therefore, many researchers have refined the initial model, trying to find the latent factors underlying perceived ease of use and perceived usefulness. Today, TAM has become a standard to determine and predict the usage of some applications, including mobile payment platforms.

TAM POINT OF VIEW: THE BATTLE BETWEEN GOPAY AND OVO

Recent findings showed that Perceived Usefulness and Perceived Ease of Use affected Consumers' Intention to Use, both for GoPay and OVO. Perceived Usefulness can be defined as the functions offered by both of mobile payment technology. The more useful the application, the more intention to use they get (Joan & Sitinjak, 2019; Jayaningrum, 2019). Whereas Perceived Ease of Use can be defined as how easy or simple a system to be used.

Basically, both GoPay and OVO offered the same features; mobile payment. Both of them also have the same strategy with promotional discounts in merchants to gain market share. If promotions are consistent and perceived as beneficial towards consumers, consumers will likely to use the service offered. Right now, GoPay as pioneer in Indonesia has covered all of Gojek users. Once consumers registered for Gojek account, they also have a Gopay account embedded. This way, Gojek can turn all of the customers into GoPay customers using the same ecosystem. This strategy was lately implemented by OVO, affiliated with Grab in Indonesia. The need of public transportation is high in Indonesia, therefore OVO actually have gained market share from an established ecosystem. Comparing both platforms, it seems both platforms are useful as transportation payment.

Both platforms are now competing in online marketplace payment. GoPay affiliates with some of big marketplace such as Blibli.com, JD.id, Bhinneka, and many more (GoJek, 2020). While OVO is exclusively the only mobile payment accepted by Tokopedia, followed by some smaller marketplace (OVO, 2020). Again, this is also a common strategy implemented by start-ups, in order to get into an established ecosystem. By implementing promotion inside the established ecosystem, start-ups may gain market share.

Not only online marketplaces, now offline merchants are targeted by GoPay and OVO as business comrades. 99 percent of business in Indonesia are classified as micro, small and medium enterprises or usually called as UMKM, which also absorb about 97 percent of Indonesian labor (Haryanti & Hidayah, 2018). Therefore, there are a big number of financial transactions happen in this segment. It is no wonder GoPay and OVO both incessant affiliate with UMKM. It is now really common to see some food or drink stalls (usually called as "pedagang kaki lima" or "angkringan" in local language) accept GoPay or OVO as payment system.

Online credit facility is also a point to be considered, since credit card is not that easy to get in Indonesia (Movanita, 2019). GoPay and OVO have pay-later feature, which mean consumers may pay at the end of every month. With both platforms offer the same features, consumers may not determine their choice by this feature.

In order to gain market share and maintain consumers' loyalty, promotion programs are rolled out by GoPay and OVO. GoPay implement cashback system, which some parts of payment conducted will be returned to consumers balance. While in OVO system, the cashback will become points which equal the same as in Rupiah. In this term, GoPay offers better cashback option since balance can be transferred to bank accounts, or other GoPay account, while OVO Points cannot be transferred and cannot be used in promotions.

Currently, OVO's ecosystem is considered bigger than GoPay since OVO affiliate with tech-giants while GoPay focuses more on UMKM. OVO is a dedicated application, so consumers will have to install a single application in smartphone. In the other hand, GoPay is embedded inside Gojek application where consumers will be able both services inside a single

application. This strategy is different between both platforms. While OVO creates its system as concise as it can, GoPay is embedded in a super app which able to provide consumers better. The drawback is GoPay access can be slowed down, since it consumes more resource in a smartphone.

Both platforms are racing to get bigger market share, utilizing every ecosystem they created. Some smaller mobile payment platforms have already fallen behind, such as Dana, LinkAja, Sakuku, Doku Wallet, Rekening Ponsel, Go Mobile and many more (Devita, 2019). GoPay and OVO are now fighting for the hill, leaving other competitors and creating a duopoly in mobile payment system in Indonesia. They are both equipped with similar ecosystems, starting from transportation, online marketplace, and offline merchants. It can be said that GoPay is perceived as useful and easy to use as OVO. It is really interesting to wait which one will win over another, who can maintain their consumers' loyalty well.

CONCLUSION

GoPay and OVO are both top of mind regarding to mobile payment platform in Indonesia. They have the same basic features, with little bit difference in strategy. Both of them have similar ecosystem, such as transportation, online marketplace and offline merchant payment. With their aggressiveness in the market, other competitors are already left behind. It still cannot be predicted who will conquer the land, or will both of them share the same place. The difference is while GoPay is built inside Gojek super app, OVO is a single application for mobile payment. An important point to be noticed is consumers' loyalty. It is really hard to maintain consumers' loyalty since consumers may use both of platforms freely, which one is more beneficial.

SUGGESTION

This review is seen from TAM point of view. While these factors can be considered by platforms in decision making, there are some factor which do not influence Perceived Usefulness and Perceived Ease of Use. Other factors can be examined through Theory of Planned Behavior (TPB) which is an extension of Theory of Reason Action (TRA). Both of the theories are based on individual capability to make logical, reasoned decision to perform in specific behavior by evaluating some information which is available to be accessed (Ryan & Carr, 2010).

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