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**Adoption Of Mobile Payment Approach Extended The
UTAUT 2**

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Abstract

One of the most widely used mobile payment applications in Indonesia is LinkAja. This product has received official permission from Bank Indonesia as digital technology innovation in transactions. The purpose of this study was to determine the use of the LinkAja mobile payment with the UTAUT 2 approach. This type of research is explanatory research with a quantitative approach. This research analysis technique is descriptive and inferential using the Structural Equation Model-Partial Least Square (SEM-PLS). The population in this study was LinkAja users in Indonesia with a sample size of 249 respondents. The results showed that performance expectancy, facilitating conditions, hedonic motivation, price value, and habit have a positive and significant effect on behavior intention. Effort expectancy and social influence have a negative and significant effect on behavior intention. Behavioral Intention has a positive and significant effect on Actual Usage on the use of the LinkAja mobile payment..

Keywords: Adopt mobile payments, UTAUT 2, SEM-PLS

Introduction

Humans behave is determined by two factors, specifically the existence of reasons and the desire to behave. By understanding these two factors will be able to identify the direction of behavior change strategies and

explain aspects of some human behavior (Fishbein, & Ajzen, 1975). In behaving towards the adoption of information technology, various models are developed. The role of price value and hedonic motivation dominates as a determinant of behavioral intention. The price value effect is inversely related to behavioral intention while hedonic motivation is directly proportional to behavioral intention. The implications of the findings from the moderating variables, namely experience, age and gender also influence the type of application used (Budiarto, 2018).

The UTAUT model has been widely used for technology adoption research in the domains of e-banking, e-learning, e-commerce, and e-government (Jain, 2016). The UTAUT model was tested and used in many previous studies. The UTAUT model is a model that can describe whether a technology is accepted by its users (Venkatesh & Hall, 2003).

UTAUT is formed from eight technology acceptance models, including theory of reasoned action (TRA), 17 technology acceptance models (TAM), motivational model (MM), theory of planned behavior (TPB), combined TAM and TPB (C-TAM-TPB), model of PC utilization (MPCU), innovation diffusion theory (IDT) and social cognitive theory (SCT). The UTAUT 2 model developed by Venkatesh et al (2012) includes seven constructs - PE, EE, SI, FC, hedonic motivation (HM), PV and habit (HA) (Emma L.et. al, 2014; Dahlberg, et al, 2015; Goncalo, 2017; Morosan, et al 2016). Therefore, this study considers the UTAUT 2 model to understand the adoption and use of digital payment systems with six constructs: PE, EE, SI, FC, HM and HA, to discuss BI for using digital payment systems.

Advances in technology like today make all activities in the social and economic fields can be carried out more quickly and practically. People in Indonesia are accustomed to using the internet and can be said to be dependent on its practicality and the benefits it provides. The Internet has become a necessity for everyone because it can provide the information desired by its users.

Nowadays, technology-based companies that provide financial services are emerging, often referred to as Financial Technology or Fintech. Fintech is a financial services industry that utilizes technology to enable its users to perform various financial transactions digitally.

The new services offered by Fintech can be classified into the following four specific solutions (Ng & Kwok, 2017) is Efficient payment processing, Robo-adviser, P2P (peer to peer) Lending Platforms, and Deposits, and Crowdfunding. An efficient payment process or one of which is known as Mobile Payment has its market compared to the other three services offered by Fintech. Mobile payment is a transaction method where the money is transferred from one person to another via a mobile device without intermediaries. Mobile payments enable consumers to eliminate the need for cash, performance, and secure information transfer between devices, from single or individual transactions to environments with high payment volumes, such as large restaurants or retailers. (Leong, L. Y., Hew, T. S., Tan, G. W. H., & Ooi, 2013). This type of payment is an electronic payment that is currently being developed because it is expected to be a solution to the non-cash movements made by the Indonesian government in daily payment transactions. Mobile payments allow consumers to eliminate the need to use cash, making it faster and safer (Pham & Ho, 2015).

Telkomsel Cash (T-cash), now commonly known as LinkAja, emerged as a cashless instrument in Indonesia in 2007. LinkAja is a digital financial service from Telkomsel in the form of electronic money (e-money). LinkAja was officially launched on June 30, 2019, but it is not prevalent yet and far behind some of the e-money in Indonesia today. The urgency of this research is to find out the main reason for loyal LinkAja users to utilize this mobile payment. LinkAja is a platform managed by PT Fintek Karya Nusantara (which previously managed T-cash). LinkAja presents a holistic service with various payment features

such as bill payments (electricity, PDAM, BPJS, internet); transactions at merchants such as Pertamina, payment for transportation, and online purchases.

Based on the above, it is necessary to explain the behavior of accepting mobile payment technology with the UTAUT model. The use of mobile payments, especially QR Codes in banking business transactions, has not been accepted because people are still accustomed to using cash in transactions in traditional markets, stalls, and grocery stores, which do not yet provide non-cash facilities. The availability of the EDC or Electronic Data Capture machine is also still minimal and errors often occur when using the card and there are still many people who do not know how to operate it. (Arianti, Darma, & Mahyuni, 2019). Study conducted by Widyawati, D., & Winarno, W. W. (2020), identify determinants of acceptance and actual use of mobile payment services that adopt the Integrated Model on Mobile Payment Acceptance (IMMPA) technology service by Di Pietro et al. (2015) among young people in the campus environment by adding a construct that is relevant to the factors that influence the use of mobile payment services, namely Trust. Another new construct developed from the IMMPA model is Perceived Security which is linked to Trust. Meanwhile, according to Aljabbaru & Sari, 2020, the use of Mobile Payment Linkaja uses the Unified Theory of Acceptance and Use of Technology (UTAUT) model developed by Venkatesh et al in 2003 by focusing on the variables of performance expectancy, effort expectancy, social influence, facilitating conditions. regarding behavioral intention and use behavior, it has not been able to become a mobile payment with the most active users because LinkAja's transaction fees are still considered higher than other mobile payments and there is a need for increased social influence such as family, friends, celebrities/influencers, and management companies to influence user interest. So it is necessary to add variables to determine the acceptance model of technology adoption to identify the direction of behavior change strategies and explain the behavioral aspects of acceptance of mobile

payment technology.

Literature Review

Mobile payment is a type of transaction that uses cellular devices such as mobile phones, tablets, or PDAs (Personal Digital Assistants) as a means of exchanging financial value in exchange for goods and services (Taylor, 2016). This technology adoption model shows integrated innovation combined with appropriate context that arises from the first awareness of the need to apply technology to all activities (Fu, 2018). Information technology can improve performance if it can be accepted and used by its users. Previous research examined theories about technology acceptance by system users, including the theory of reasoned action (TRA), technology acceptance model (TAM), theory of planned behavior (TPB), and others. Based on these theories, Venkatesh, et al., (2003) proposed the theory of unification of acceptance and use of technology (UTAUT) as an alternative to the TAM model (Keong, Ramayah, Kurnia, & Chiun, 2012) using four constructs, namely; performance expectancy, effort expectancy, social influence and facilitating conditions which have a significant influence in determining user acceptance and user behavior. This study uses the UTAUT model to determine variables that have a significant influence on individual behavioral intentions in using mobile payments through the Linkaja payment application.

Performance expectancy

Individual belief in using the system can bring benefits in its activities called performance expectations. According to (Rezkyana, 2020) Performance expectations are that the the existence of information technology systems in the work environment will bring the perception that: work will become more effective and efficient so that generate interest in the use of information technology by users to improve their performance. The performance expectation variable reflects

the increase in efficiency and convenience of payment when using mobile banking so that the intention arises to adopt mobile banking (Gupta, Manrai, & Goel, 2019). Performance expectations have clarified as the extent to which an individual believes that using the system will assist in attaining gains in job performance and is the most potent predictor of intention, performance expectations have related to perceived ease of use of TAM, the extent to which individuals believe the system will help individuals do better (Dzulhaida, Rifaldi, & Giri, 2017).

Effort expectancy

Effort Expectancy is an individual assessment against the use of technology that is not requires more effort (Celik, 2016). (Gefen, 2003; Venkatesh and Davis, 2000) have found that individual behavior to learn and utilize information technology directly influenced by Behavioral Intention, especially in the period of exploration of the use of technology. From some of the descriptions above, it can be understood that Effort Expectancy is the level of ease in operating or using a system, so it does not require a large amount of effort to use it. According to(Lancelot Miltgen, Popovič, & Oliveira, 2013) contributes to the correct prediction of the intention to adopt new technology. The results of (Ghalandari, 2012) study found that effort expectancy has a positive and significant effect on user's behavioral intention as well as the results of (Jati & Laksito, 2012) study which found that effort expectancy affects an interest in the use, but it is different from the results of (Ivan & Karina M.R. Brahmana, 2018). This shows that effort expectancy does not affect behavioral intention in Indonesians who have used the marketplace.

Social Influence

Social influence is the level where an individual considers that people who are close to him or people whom he thinks are important, in this case, friends or family, believe that he should use a recent system/technology (Venkatesh et

al., 2012). Social influence is also described as a subjective norm, which means a person's perception where important people think that they should use a system or not. (Hill et al., 1975) (Taylor & Todd, 1995). (Venkatesh & Davis, 2000) The social environment has a major role in influencing individual behavior through three mechanisms, namely compliance, internalization, and identification. (Thompson, Higgins, & Howell, 1994) explained that social influence is the same as social factors, in which the subjective group's environment and culture and certain agreements encourage someone to use or not a system. Based on the above theories, social influence is the level where a person believes that the social environment, namely family or friends, influences him to use a system or technology. In (Gunawan & Flawrencia, 2019) social influence in the form of family, colleagues, mentors, and friends is a supporting reason for using the Hijabenka application.

Facilitating Condition

Facilitating Condition is the level of one's confidence in the presence of technical and organizational infrastructure to espouse the use of the system (Venkatesh & Hall, 2003). (Yang & Forney, 2013) in his research explained that facilitating condition is a system in a technological environment designed to reduce or eliminate difficulties in using a technology which then facilitates the use of functions and features of a technology. From some of the opinions above, the facilitating condition is how much someone believes in the availability of infrastructure, systems, and so on, which can help reduce one's difficulties in using technology. This agrees with the research of Sedana and (Sedana & Wijaya, 2012) which states that there is a positive and significant correlation between facilitating conditions and behavioral intention.

Hedonic Motivation

In the consumer context, hedonic motivation is a prominent determinant of technology adoption and use (Venkatesh et al., 2012). Hedonic motivation is a derivative of

the ease-of-use theory in the Technology Acceptance Model (TAM), namely perceived enjoyment, which has elucidated as the level of activity in using a system by someone who has felt to provide pleasure and comfort, this is a part of the performance consequences of using the system. (TA Brown, 2006). Based on some of the above theories, hedonic motivation is a person's motivation to use technology based on pleasure, comfort, and interest in using technology. In the consumer context, hedonic motivation has also been finding out to be a necessary determinant of technology acceptance and use (VV Brown, 2005). The results of research by (Cholifaturrosida, Mawardi, & Bafadhal, 2018) state that it has said that pleasure for other people seeing fashion trends and the fashion used is a pleasure.

Price Value

Price Value is how much the benefits are obtained from the use of technology compared to the costs used for using a technology (Venkatesh et al., 2012). From the above statement, it can be understood that price value is how much profit we get when using technology. In marketing research, monetary costs/prices are normally conceptualized together with the quality of the product or service to determine the perceived value of the product or service.(Zeithaml, 1988). It follows these ideas and defines price value as a consumer cognitive trade-off between the perceived benefits of an application and the monetary costs of using it (Dodds, Monroe, Grewal, Dodds, & Monroe, 2013). The explanation that price value affects the intention to use the LinkAja digital wallet application is that users feel the price for getting the LinkAja digital wallet application is reasonable, a service provided by the digital wallet application (Andrianto, 2020).

Habit

Habit is the level where someone tends to use the technology automatically because of learning (Venkatesh et al., 2012). (Murray, 2007) explained that someone with more experience in using technology affects one's habits in

accepting a technology or system. The habit has been defined as the degree to which people tend to perform behavior automatically due to learning (Limayem, Hirt, Cheung, & Hirt, 2007). Although conceptualized somewhat similarly, habits have been operationalized in two different ways: first, habits are viewed as prior behavior (Kim, Sung S, 2005); and second, habit is measured as the degree to which a person believes the behavior is automatic (Limayem et al., 2007). Habit is an activity that is carried out regularly, automatically, carrying out activities, not because of coercion, and someone feels unaccustomed to not doing these activities so this is a must. The habit variable mediated by behavioral intention has a significant positive effect on adoption with a T-table value of 5.397, the nature of the mediation given is part mediation (Septiana, Salim, & Daulay, 2020).

Behavioral Intention

Behavioral Intention is related to an individual's compliance to perform certain behaviors and Behavioral Intention is an antecedent of Actual Use (Sivathanu, 2019). According to (Venkatesh & Hall, 2003) intention to adopt can represent user acceptance. This is by research (Muntianah, Astuti, & Azizah, 2012) that the desire or interest in behavior in using technology can lead to or encourage respondents to carry out a behavior, in this case, student learning both in lectures and vacation time so that it can provide a sense of satisfaction because it can facilitate and speed up task completion.

Actual Usage

Usage or Actual Usage is a real response in the situation provided about a given target (Sivathanu, 2019). Actual Usage states that users use the application.

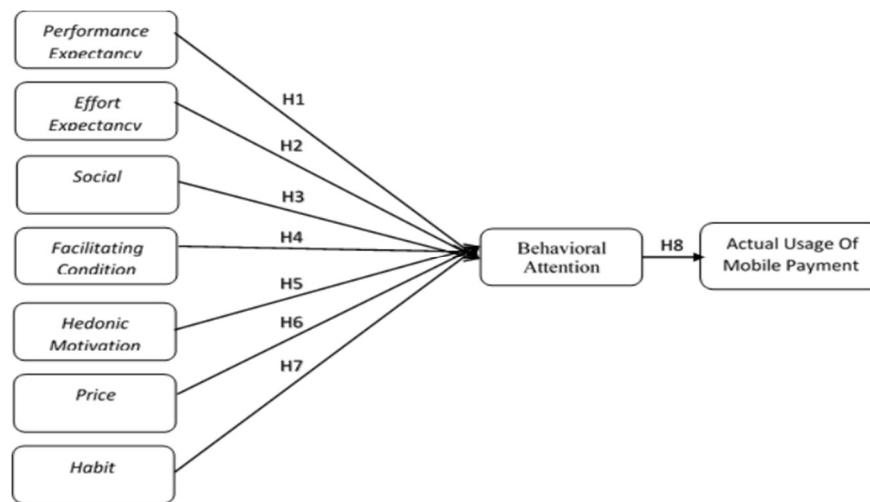


Figure 1. Research Framework

Research Method

This type of research uses a quantitative descriptive approach, because the data is realized in the form of numbers starting from data collection, interpretation of the data and the appearance of the results (Arikunto, 2013:27). The results of the analysis are used to show the adoption of Mobile Payment Users, especially LinkAja.

The sampling technique used was cluster sampling because it was determined randomly from a respondent area of 249 Mobile Payment device users who live throughout Indonesia. Data was collected by distributing questionnaires through Google Form consisting of 29 people in Cluster 1 (Sumatra), 2 (Bali and Maluku) 1 each, 3 (Banten and Kalimantan) 5 people each, 4 (DIY) 6 people. people, 5 (DKI) a total of 14 people, 6 (Gorontalo and NTT) a total of 2 people, 7 (East Java) a total of 154 people, 8 (West Java) a total of 9 people, 9 (Central Java) a total of 10 people, and (Sulawesi) a total of 8 person. The measurement scale uses a Likert scale, with the highest weight being 5 and the lowest being 1. Testing of research instruments was carried out using validity and reliability tests. The analysis technique used is descriptive and inferential analysis with the SEM-PLS method.

Results

Table 1 Result of R Square

	R Square	Information
AU	0.724	Moderate
BI	0.698	Moderate

Source: Primary data processed by researchers (2020)

Based on table 1, shows that the Actual Usage of mobile payment and Behavioral Intention variables have moderate construct strength because the R Square value for the Actual Usage of mobile payment variable is 0.724, while the Behavioral Intention variable has an R Square value of 0.698. The results of the research hypothesis test are shown in table 2 as follows:

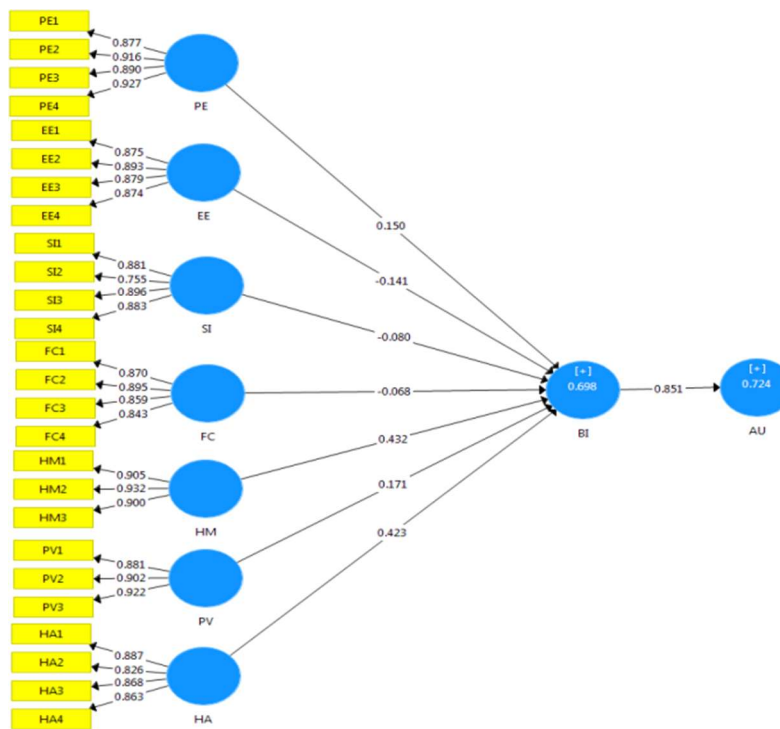


Figure 2 Results of the Structural Model (Inner Model)

Table 2. Path Analysis

Hypothesis	Influence	Effect Type	SRW	Result
H1	PE -> BI	Live Effects	0.150	Accepted
H2	EE -> BI	Live Effects	-0.141	Rejected
H3	SI -> BI	Live Effects	-0.080	Rejected

Hypothesis	Influence	Effect Type	SRW	Result
H4	FC -> BI	Live Effects	-0.068	Rejected
H5	HM -> BI	Live Effects	0.432	Accepted
H6	PV -> BI	Live Effects	0.171	Accepted
H7	HA -> BI	Live Effects	0.423	Accepted
H8	BI -> AU	Live Effects	0.851	Accepted

Source: Primary data processed by researchers (2020)

Discussion

H1 which tested the regression pathway between PE and BI had a positive and significant relationship, $p > 0.1$ and $b = 0.15$. This condition is consistent with (Venkatesh & Hall, 2003) that Performance Expectancy is the extent to which individuals believe that using technology will be useful for improving job performance.

H2 which tests the regression path between EE and BI shows an insignificant negative relationship ($p < 0.1$, $b = -0.141$), this hypothesis cannot be accepted. This variable is measured by the ease and perception of the user, as well as the complexity of the system when used. (Venkatesh & Hall, 2003) explained that with increasing age a person is proven to affect his ability to use or receive information that is usually required when using a system. This can happen because the system has complex features so that users cannot use the system easily. If the user feels the system is easy to use and learn, it is hoped that it will increase interest in using the system.

H3 which tested the regression path between SI and BI showed a negative and insignificant relationship, ($p < 0.1$, $b = -0.080$). So, this hypothesis is not accepted, because social influence is measured based on the user's opinion about how much other people can influence and the image obtained by using the system. This is according to research (Li et al., 2012) and (Baptista & Oliveira, 2015).

H4 testing the regression pathway between FC and BI showed a negative and insignificant relationship ($p < 0.1$, $b = -0.068$). This hypothesis is supported by user conditions such as knowledge and resources, facilities provided, and system compatibility. Provision of features or menus that facilitate users to easily contact someone/contact person when they have difficulty using the system.

H5 which tests the regression path between HM and BI shows a positive and significant relationship, ($p > 0.1$, $b = 0.432$). In the consumer context, hedonic motivation is an important determinant of technology adoption and use (Venkatesh et al., 2012). HM's influence on behavioral intentions implies that the factors of enjoyment, enjoyment of service, and feeling of being entertained encourage users to adopt mobile payment services. This is according to research (Baptista & Oliveira, 2015).

H6 which tests the regression path between PV and BI shows a positive and significant relationship, ($p > 0.1$, $b = 0.171$). The price value is how much profit we get when using technology. In marketing research, monetary costs/prices are usually conceptualized together with the quality of the product or service to determine the perceived value of the product or service. (Zeithaml, 1988). It follows these ideas and defines price value as a consumer cognitive trade-off between the perceived benefits of an application and the monetary costs of using it (Dodds et al., 2013).

H7 which tested the regression path between HA and BI showed a positive and significant relationship, ($p > 0.1$, $b = 0.423$). Habit is the level where someone tends to use the technology automatically because they learn (Venkatesh et al., 2012). The seventh hypothesis can be accepted, it means that the level of habits in using the system and the level of user requirements encourages the user to know more menus in the system.

H8 which tests the regression path between BI and AU shows a positive and significant relationship, ($p > 0.1$, $b =$

0.851). According to (Venkatesh & Hall, 2003) intention to adopt can represent user acceptance. Behavioral intention is defined (Mowen, John C & Minor, 2002) as the consumer's desire to behave in a certain way to own, dispose of, and use a product or service. This hypothesis is accepted because the high interest in use will not be much different from the frequency of its use. When high interest is achieved, after users use the system, the frequency of its use will not be much different from those of low-interest users because this system is only used when making transactions. With the increase in these seven variables, the variable user interest can also increase so that it has a significant effect on Actual Usage.

Conclusion

Mobile Payment is a concept that is well evolved and has high market potential but has a low acceptance rate. This study criticizes the acceptance of LinkAja Mobile payments in Indonesia applying the UTAUT2 model.

PLS-SEM has applied to a sample of 249 respondents. The results show it is a good model and confirm the acceptance of five of the eight hypotheses. Besides, all pathways indicate a significant positive relationship with behavioral intention, except Effort Expectancy, Social Influence, and Facilitating Condition.

From a practical perspective, this study shows that entire UTAUT2 variables, Effort Expectancy, Social Influence, and Facilitating Condition, have a significant effect on individual acceptance of LinkAja Mobile Payment.

Mobile Payment service providers must furnish different services according to user needs because users are more interested in usage fees while working professionals focus more on credible and convenient banking services. If service providers offer services according to individual needs, this will increase the adoption of mobile payments.

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