

CHAPTER II

LITERATURE REVIEW

In this chapter, the topics for the literature review have been chosen to be given to the primary research questions, the sub-questions figured from the primary research questions and the objective of the research are discussed in detail below.

2.1 Mobile Payment

Mobile payment is categorized as an electronic wallet, which includes non-cash transaction, it does not use media such as cards, and it allows transaction through electronic channels (Amorso & Watanabe, 2012). Different from debit or credit cards, a transaction using digital wallet is not directly through the third parties or intermediaries (Amorso & Watanabe, 2012). According to Ernst & Young (2011), mobile payment grouped based on technology, mobile payments divided into three parts, namely Short Messaging Service (SMS), Near Field Communication (NFC), and Mobile Internet. For scenario based sharing, mobile payment is divided into six parts, namely payment type, use case, characteristics, examples, payment providers and enablers, and mobile operator participation.

Table 2.1**Mobile Payment technologies and Scenarios**

	SMS	NFC	Mobile Internet
Payment type	Person to Person Person to Business	Person to Business Business to Business	Person to Person Person to Business
Use case	Domestic remittance International remittance Branchless banking	Contactless payments Identification and marketing related services	In-app payments mobile wallet transaction
Characteristics	Payment services for the unbanked and underbanked	High levels of cross-industry collaboration	Extension of online payment services
Examples	Salary payments (Roshan, Afghanistan)	Transit payments (Mobile FeliCa, Japan)	Mobile wallet (PayPal)
Payment providers and enablers	Startups Mobile operators Money transfer Companies Handset Manufacturer	Card Issuers Mobile operators Handset Manufacturers Penjuals Startups	Web service players Startups Mobile operators Penjuals
Mobile operator participation	High	Medium	Low

Source: Ernst & Young, 2011

2.2 Digital Wallet

Digital wallet is a natural advance step concerning the development of payment methods. Digital wallet is an opportunity for financial development and is becoming a common tool for carrying out various financial transactions (Iman, 2018). Digital wallet has more functions, including person to person payment and other payment methods, balance inquiry and reporting functions, support of loyalty programs and other functions (Peterson & Wezel, 2016).

According to Tsys (2017), a digital wallet is stored inside the electronic mobile payment system that the consumer uses near-field communication (NFC) technology to allow devices to communicate. The payment data transferred between mobile and NFC-enabled terminal. The NFC receiver reads two signals, one from the device and one from the secure element microchip on the card inside the digital wallet.

Digital wallet is a personalized digital artifact that contains electronic payments instruments such as virtual currencies and payment method (Olsen, Vetrapu, and Hedman, 2011). Digital wallet is accessed through a mobile device that allows the consumer to make payment through handheld devices. According to Near et al. (2016) the payment process for online wallets is:

- a. User register by providing a phone number
- b. Digital wallet provider sends an SMS with a pin on a mobile phone and authenticates the number.
- c. After authentication, user inputs information and validating the information.
- d. For subsequent payments, the user re-enters pin to authenticate and validates payment.

The digital wallet can also be useful to the consumer if it is simple and faster, the digital wallet will be considered useful when available in situations where the consumer recognizes its advantages over cash (Sahut, 2018). Mobile payment is reasonable for offline micropayments and also for online buys. A digital wallet can support various transaction including

consumer to consumer, consumer to business, consumer to machine, and consumer to online (Shin, 2009). Also, the consumer has greater flexibility for setting transaction at the point of sale with mobile phone payment (Shin, 2009).

2.3 OVO

OVO is a software application where all the instructions the user do will come from a mobile application or online. OVO can be operated via Android phones (OS 4.2 and above) and also iPhone (iOS 8.0 and above) through the Google Play Store or Apple Store. It will ask the user to authorize instructions by using different types of security information (Security Code, user name, password) if needed. After authorizing, OVO will carry out the instructions according to the user order. The user is required to ensure that the user does not share his/her security information with other parties. OVO ensures well-maintained confidentiality and security of the personal information from the user. OVO will use the user's data under applicable regulations. A user can ask or enter OVO through the OVO User Service Contact Center (1 500 696). The OVO Application offers 2 (two) types of customer classification with different types of OVO services or service features. These customer classifications are OVO Club and OVO Premier.

OVO Club is a classification of OVO membership that allows the user to enjoy the facilities of electronic money (unregistered) and OVO Points. For OVO Club, the maximum balance of OVO Cash is IDR2,000,000 (Two

million Rupiah). If the user wants to get more services from OVO, the user can upgrade their OVO Club to OVO Premier, with more diverse OVO service features. OVO Premier is a classification of OVO membership that allows the user to enjoy “registered” electronic money, OVO Points, Budgeting service features, and other service features that the users can add from time to time. For OVO Premier, the maximum balance of OVO Cash is IDR10,000,000.

Also, OVO offered several components that are divided into:

1. “*OVO Application*” is the downloaded application so that the user enters this page or these Terms and Conditions, which are currently known by the brand, name, logo and/or sign known as “OVO” or brand, name, logos and/or other marks.
2. “*Account*” or “Your Account” means a specific identification made in OVO based on user’s registration request.
3. “*Data*” means any data, information and/or information in any form from time to time (including when a user downloads the Application) a user submits to the Service Provider or user’s specify or submit in, on or through Application.
4. “*Us*” means PT. Visionet Internasional (VI)
5. “*Services*” means any services, programs, services, products, features, systems, facilities and/or services provided and/or offered in or through the Application.

6. “*Customer Service (OVO Call Center)*” is the function of the customer service center for customers who can be contacted via telephone calls and/or email.
7. “*OVO*” is an electronic system (platform) created by PT. Visionet Internasional (VI)
8. “*OVO Users*” are users of OVO Applications and Cards (HiCard and Sub Card Reward-OVO Cards).
9. “*Terms and Conditions*” means these Terms and Conditions and any changes, additions, changes, adjustments and/or modifications made from time to time.
10. “*Transaction*” means all transactions, activities, and/or actions carried out in or through the Application, Account and/or Security Code including the use of the Service or certain features in the Service or Application.
11. “*VI*” is PT. Visionet Internasional, a limited liability company established under the laws of the Republic of Indonesia.

2.4 Technology Acceptance Model

One of the most adopted technologies toward an individual is the technology acceptance model (TAM). Davis (1989) introduced TAM to explain about the behavior of technology user. The most famous study is models to predict and acknowledgment of data system and innovation by the singular user. Technology Acceptance Model (TAM) is an information system theory that explains and predicts the behavior of technology users in accepting and using the technology in their work. The goal of TAM explains accurate

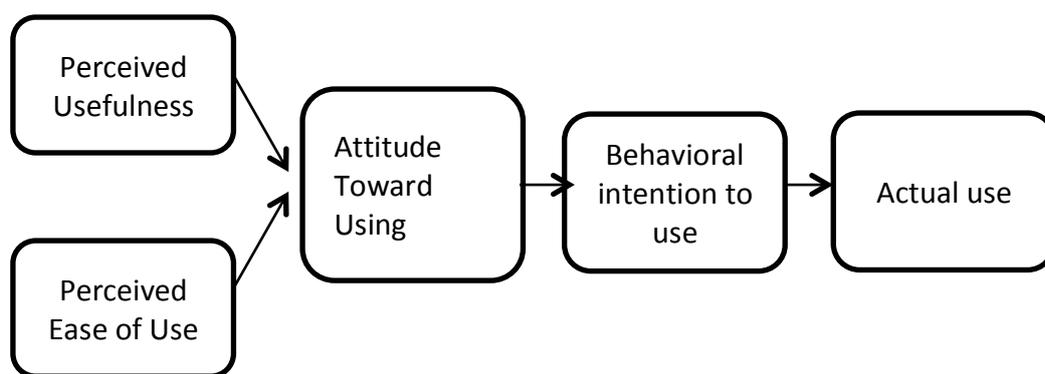
user behavior across a broad range of end-user computing technologies and user populations (Davis *et al.*, 1989). Ideally, a helpful model does not only predict but also explain, so that the researchers can identify why a particular system cannot be accepted, and they can make corrective measures. TAM is one of the most popular and widely tested models in various studies concerning user technology acceptance and usage (Yousafzai *et al.*, 2007; Venkatesh, 2000).

This model has been subjected to modification by the researcher. TAM has been broadly contemplated and checked by various studies that check at the individual technology acceptance behavior in various data frameworks develops. TAM is formulated with end-user technology applications in mind (Lemay, 2018). According to Lemay (2018). TAM is enabling conditions to improve performance and modality of expectancy or conditional reasoning. The technology acceptance model (TAM) determined the user acceptance of the technology information, technology acceptance model (TAM) to determine the behavioral intention of technology (Davis in 1989). The models consist of perceived usefulness (PU) and perceived ease of use (PEOU) to forecast behavioral intention attitude, and use of information technology. Except for TAM, there are many methods relating intention to use such as theory planned behavior and unified theory of acceptance and use of technology, but for a digital wallet, TAM is capable for behavioral intention because it can be modified following factors such as perceived usefulness, and perceived ease of used that needed in acceptance model (Shin, 2009). TAM has influenced on behavioral intention to use that, in the

end, influencing actual system use that illustrated in Figure 2.1. The main variables in TAM that influence the user for acceptance models are perceived usefulness and perceived ease of use (Davis, 1993).

Figure 2.1

Technology Acceptance Model



Source: Davis *et al.*, 1989

2.5 Perceived Value

Perceived value is a recognized construct in consumer behavior. According to Fu *et al.* (2018), perceived value has conceptual affective components and aspects. According to Hutt and Speh (2007), customer value is the customer's perception and evaluation of how useful the relationship with a supplier is in terms of benefits received and sacrifices made. Furthermore, Hutt and Speh (2007) distinguished two types of benefits: "core benefits" that are core requirements for a customer-supplier relationship and "add-on benefits" reflecting attributes that are typically not required but create added value in a customer-supplier relationship. In line with previous definitions, other authors define customer value as a

comparison of weighted “get” and “give” attributes or as a ratio of perceived benefits received and perceived sacrifices. Authors highlight the word “perceived” because both benefits and sacrifices are subjective to a certain level (Christopher, Payne, & Ballantyne, 2008; Heskett, Iones, Loveman, & Sasser, 1994). According to all the definitions above, it is evident that customer perceived value could be described as the difference between customers’ perception of the benefits they believe and they will derive from a purchase compared to the costs they will have to pay

According to Smith and Colgate (2007) has proposed the following four customer value dimensions:

1. Functional/ instrumental value reflects how much a product is useful has characteristics or functions that were expected.
2. Symbolic/ expressive value describes the degree to which customers give the product some psychological meaning (e.g., self-concept or self-worth)
3. Experiential/ hedonistic value is associated with the extent to which a product evokes some particular emotions, feelings, and experiences for the customer.
4. Cost/ sacrifice value is concerned with the expenses and other sacrifices that might be associated with buying or using a product

Also, according to Sumaedi (2014), three factors are determining perceived value such as valuable, acceptable, and worth. According to Sumaedi (2014), perceived value is constructed that represent customer perceptions based on the evaluation.

The current research findings will find out intention to use of digital wallet in Malang. By understanding these clues, it will help the corporations to implement these methods to enhance their customer behavioral intention to use.

2.6 Behavioral Intention to Use

Intention is defined as a person's intention or a motivational factor that captured how much effort a person is willing to dedicate to perform a behavior (Ajzen & Fishbein, 1991). Such behavior or activities can be based on positive or negative feelings (Ajzen & Fishbein, 1991). Intention to use is a psychological express that speaks to a promise to do an activity or activities, later on, includes mental exercises, arranging and planning. It is a demonstration of deciding rationally upon some activity or result or the end or protest expected. According to Arahaita and Hatammimi (2015), intention to use could be influenced by the usage of technology. Intention to use is how likely it is the users intended to use the system (Alford *et al.*, 2011). Behavioral intention serves as an indicator of a person to perform specific behavior. It measures a person's relative strength of intention to personal behavior (Ariff *et al.*, 2012).

Behavioral intention is defined as a person's perceived likelihood or subjective probability that he or she will engage in a given behavior. According to Peter and Olson (1999:137), behavioral intention is the single best predictor of actual behavior. Under the theory of reasoned action, behavioral intention is created through a choice/decision process in which a belief about the consequences of that behavior, mainly social

norms and attitude towards that behavior, are considered and integrated, to evaluate alternative behavior and select among them. Behavioral intention varies in strength, which can be measured by having customer rate the probability that they will perform the behavior of interest.

2.7 Previous Research

Alalwan *et al.* (2017) investigated the factors influencing the adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. The research found that over the Jordanian context, the adoption rate of mobile banking is meager and quite a few studies that have examined the related issues of mobile banking. Thus, the purpose of this research is to investigate the factors influencing behavioral intention and adoption of Mobile banking by customers of Jordanian banks. The proposed model has assimilated factors from the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) along with trust. Data collected by conducting a survey questionnaire as much as 343 participants. The results mainly showed that behavioral intention is significantly and positively influenced by performance expectancy, effort expectancy, hedonic motivation, price value, and trust.

Prieto *et al.* (2016) investigated Mlearning and pre-service: an assessment of the behavior intention of using an expanded TAM model. This paper presents the result of a study conducted at the University of Salamanca, on the behavioral intention of using mobile devices within the future teaching practice of pre-service primary education teachers. To this end, the researcher elaborated a technology adoption model based on the

Technology Acceptance Model (TAM), to that incorporated the constructs of self-efficacy and mobile anxiety. The study consisted of 678 participants from the Primary Education Teacher Bachelor's Degree at said university. The model was examined with the PLS-SEM technique. The analysis supported all the relational hypotheses proposed and suggested that the stronger relationships were those established between perceived usefulness and behavioral intention, perceived ease of use and perceived usefulness, and self-efficacy and perceived ease of use.

Natarajan *et al.* (2018) investigated the moderating role of device type and age of users on the intention of using mobile shopping applications. This work was performed to understand the characteristics of the antecedents of m-shopping adoption using mobile applications, concerning the age of the consumer and the type of device used. The Technology Acceptance Model (TAM) and Theory of Diffusion of Innovations (DOI) were used for the purpose. The antecedents for shopping-through-mobile-apps were perceived risk, perceived usefulness, perceived ease-of-use, and perceived enjoyment. Satisfaction in using an information system and personal innovativeness were also considered to have significant influences on the intention to use mobile shopping applications. In this work, devices were classified into large and small based on the screen size and respondents were classified into young and old based on age. An online questionnaire with 32 items, administered through Survey Monkey, was circulated through email to the respondents and a data set of 675 responses was taken for analysis.

Ariff et al. (2012) investigated the effects of computer self-efficiency and technology acceptance model on behavioral intention in internet banking systems. The paper aimed to determine the acceptance of internet banking system amongst potential young users in internet banking. Specifically, it has been attempted to examine the effects of Computer Self-Efficacy (CSE) and extended Technology Acceptance Model (TAM) on the Behavioral Intention (BI) to use the internet banking systems. Data were obtained from 222 undergraduate marketing students in Malaysia's public university. The finding showed that Perceived Usefulness (PU), Perceived Ease of use (PE) and Perceived Credibility (PC) of extended TAM had a significant relationship with BI. It was found that PC exerting a stronger influence than PU and PE on respondents' BI to use the internet banking systems. This research validated the critical role of CSE in predicting individual responses to information technology systems. The finding also unveiled that indirect relationship existed between CSE and BI through PU, PE, and PC of TAM.

Venkates *et al.* (2018) investigated information technology acceptance research which has yielded many competing models, each with different sets of acceptance determinants. A model is combining the technology acceptance model and the theory of planned behavior, the model of PC utilization, the innovation diffusion theory, and the social cognitive theory. Using data from four organizations over six months with three points of measurement, the eight models explained between 17

percent and 53 percent of the variance in user intentions to use information technology.

Davis (1989) investigated the user acceptance of computer technology, a comparison of two theoretical models. This research revealed to better predict, explain, and increase computer acceptance from measurement of their intentions, and the ability to explain their intention in terms of their attitude, subjective norms, perceived usefulness, perceived ease of use, and relate variables in longitudinal research of 107 users, intentions to use a specific system, measured after a one hour introductions, explaining more than half of the variance in intentions at the end of 14 weeks. These results suggest the possibility of simple but powerful models of the determinants of user acceptance, with practical value for evaluating systems and guiding managerial interventions aimed at reducing the problem of underutilized computer technology.

Bajs (2015) investigated the Tourist Perceived Value, Relationship to Satisfaction, and Behavioral Intentions: The Example of the Croatian Tourist Destination Dubrovnik. The research has shown that perceived value, satisfaction, and loyalty are essential concepts for running a successful and profitable modern company, and therefore defining a model of perceived value and value dimensions are a primary goal of marketing management. The theoretical propositions in this article are tested to the tourist destination of Dubrovnik, Croatia. The author has defined a model of tourist perceived value, satisfaction, and behavior intentions. The model was tested using the structural equation modeling. The results show a

significant effect of perceived value on the satisfaction and intended future behavior of tourists. Besides, tourists' perceived value associated with Dubrovnik was affected primarily by destination appearance, followed by the emotional experience, while the impact of cost was significantly lower.

Amarso & Watanabe (2012) conducted research to build a research model for mobile wallet consumer adoption: the case study of mobile Suica in Japan. The research found that the growth of mobile commerce, or the purchase of services or goods using mobile technology, heavily depends on the availability, reliability, and acceptance of mobile wallet systems. On the acceptance of such mobile payment systems, no single comprehensive framework has yet emerged. Based upon a broad literature review of mobile technology adoption, a comprehensive model integrating eleven key consumer-related variables affecting the adoption of mobile payment systems is proposed.

2.8 Research Hypothesis

According to Sekaran (2010), hypothesis is a tentative, yet testable, statement predicting what the researcher expects to find his empirical data. Moreover, a hypothesis can be proven and corrected if supported by empirical data (fact on the field). The hypothesis concept is as follows:

2.8.1 The effect of Perceived Usefulness to Behavioral intention

Introduced by Davis in 1989, perceived usefulness (PU) is one of the constructs of Technology Acceptance Model (TAM). Within the framework of TAM, perceived usefulness is a significant factor affecting

the acceptance of information systems. Perceived usefulness is defined as “the prospective user subjective probability that using a specific application system which will increase his or her job performance within an organizational context (Davis *et al.*, 1989).

Perceived ease of used is the activities of usefulness in customer perception can be defined as the reason why customer use technology and commit to use the technology through technology acceptance models. Perceived usefulness is explained as the feel that using particular systems to increase performances (Davis, 1993). Perceived usefulness in the adoption of mobile services is defined in a broader context to include how well consumers believe mobile services can be integrated into their daily activities (Kleijnen 2004). Perceived usefulness is seen as an important factor that influencing behavioral intention to use.

Many information systems researchers have empirically validated the positive influence of perceived usefulness on the behavioral intention of using information systems. Research by Arif *et al.* (2012) explained that perceived usefulness is significantly influencing the customer’s behavioral intention. Wang *et al.* (2003) also found that perceived usefulness has a significant effect on behavioral intention to use Internet banking in Taiwan. Gu *et al.* (2009) also verified that there is a significant effect of perceived usefulness on behavioral intention. Additionally, Thakur & Srivastava (2013) also mentioned that perceived usefulness is found to be significant dimensions of behavioral intention to adopt mobile commerce in India. Another research finding by Makanyeza (2017) indicates that perceived usefulness has a positive effect on behavioral intention to adopt. Mortimer *et*

al. (2015) also found similar results that confirmed the positive influence of perceived usefulness on behavioral intention to use information technology. Bashir & Madhavaiah (2015), were showing the result that there is a significant effect of perceived usefulness on behavioral intention. Last but not least, Carlos & Oliveira (2017), also found that perceived usefulness is one of the significant indicators for the behavioral intention to use.

However, the result of the research is not the same as the research undertaken by Akturan & Tezcan (2012). They stated that there is no direct relationship between perceived usefulness and behavioral intention to use.

Based on some studies mentioned above, the researcher wants to examine the influence of perceived usefulness towards customer's behavioral intention to use a digital wallet. To that end, the researcher formulates the alternative hypothesis as follows:

H1: Perceived usefulness has a positive influence on behavioral intention to use a digital wallet

2.8.2 The effect of Perceived Ease of Use to Behavioral Intention

The second construct developed by Davis (1989) in Technology Acceptance Model (TAM) is perceived ease of use (PEOU). Perceived ease of use is defined “as the degree to which the prospective user expects the target system to be free of effort” (Davis *et al.*, 1989). In this perception, if the user believes that digital wallet is easy to use, then they will want to use it. However, if the user believes that technology is difficult to use, then they will not want to use the technology. The easier to use the technology, the

more useful it is perceived to be and more likely to be accepted by users (Bashir & Madhavaiah, 2015).

Perceived ease of use refers to a feeling that a person has on the amount of effort that consumer can apply to use a particular system (Matemba, 2017). Perceived ease of use is the degree to which a person believes an innovation would be free of effort (Prieto, 2016). Technology users perceive technology as easy to use if it is simple to learn, flexible and compatible with the user's needs. It is a construct based on a person's assessment of the effort involved in the process of using a particular innovation (Natarajan, 2018).

There is much empirical evidence that has validated the positive influence of perceived ease of use on the behavioral intention of using information systems. Research by Alalwan *et al.* (2016) explained that perceived ease of use is significantly influencing the Jordanian customer's intention to adopt mobile banking. Arif *et al.* (2012) also explained that perceived ease of use is significantly influencing the customer's behavioral intention. Similar results are obtained by Dasgupta *et al.* (2011) that found perceived ease of use significantly affects behavioral Intention. Thakur & Srivastava (2013) also mentioned that perceived ease of use is found be significant dimensions of behavioral intention to adopt mobile payment. Another research finding by Mortimer *et al.* (2015) indicates that perceived ease of use is one of the primary determinants of the behavioral intention to use.

However, the result of the research is not the same as the research was undertaken by Al-Jabri (2015) that stated perceived ease of use did not have a significant effect on intention to use mobile banking in Saudi Arabia. Research by Ernovianti *et al.* (2012) also showed that perceived ease of use

did not significantly influence behavioral intention to adopt mobile banking services among the students in Malaysia

Based on some studies mentioned above, the researcher wants to examine the influence of perceived ease of use towards customer's behavioral intention to use digital wallet. To that end, the researcher formulates the alternative hypothesis as follows:

H2: Perceived ease of use has a positive influence on behavioral intention to use a digital wallet

2.8.3 The effect of Perceived Value to Behavioral Intention

Perceived value refers to the value that customers perceive in exchange for the price that they pay to avail any product or services. Perceived value may be explained as a trade-off between what customers are receiving in the form of quality, benefits, and utilities (Madan *et al.*, 2016). Thus, perceived value is the consumers overall assessment of the utility of a product or services based on perceptions of what is received and what is given (Wang *et al.*, 2012). Meanwhile, according to Bessie (2005), the perceived value is the consumer's perception of maintaining a business relationship and the relative benefits of transaction.

Research is conducted by Wang *et al.* (2017) proved that perceived value is significantly and positively influencing behavioral intention. In line with that, a finding by Zeithmal *et al.* (1998) showed that perceived value had influenced the behavioral intention to use. Furthermore, research by Amoroso & Watanabe (2012) shown that perceived value has a positive effect on behavioral intention to use. In the study of Fu *et al.* (2018), perceived value has a positive

effect on behavioral intention to use and directly increase.

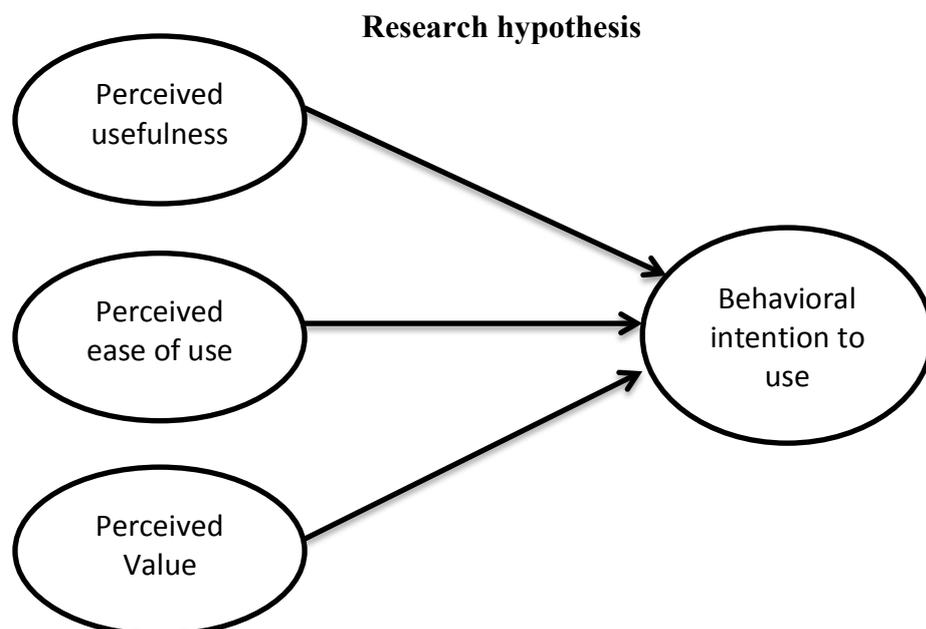
Other similar results that confirmed the positive influence of perceived value on behavioral intention to use of technology are obtained by Slade *et al.* (2015) and Vankatesh *et al.* (2012). It is different according to Sumaedi *et al.* (2016) that explained there is no effect between the perceived values to behavioral intention.

Based on some studies mentioned above, the researcher wants to examine the effect of perceived value toward a customer's behavioral intention to use a digital wallet. To that end, the researcher formulates the alternative hypothesis as follows:

H3: *Perceived value has a positive influence on behavioral intention to use a digital wallet*

Based on the theory, the previous research, and chosen variable, the researcher proposed research hypothesis that shown in **Figure 2.2**. This model is made based on the proposed hypothesis.

Figure 2.2



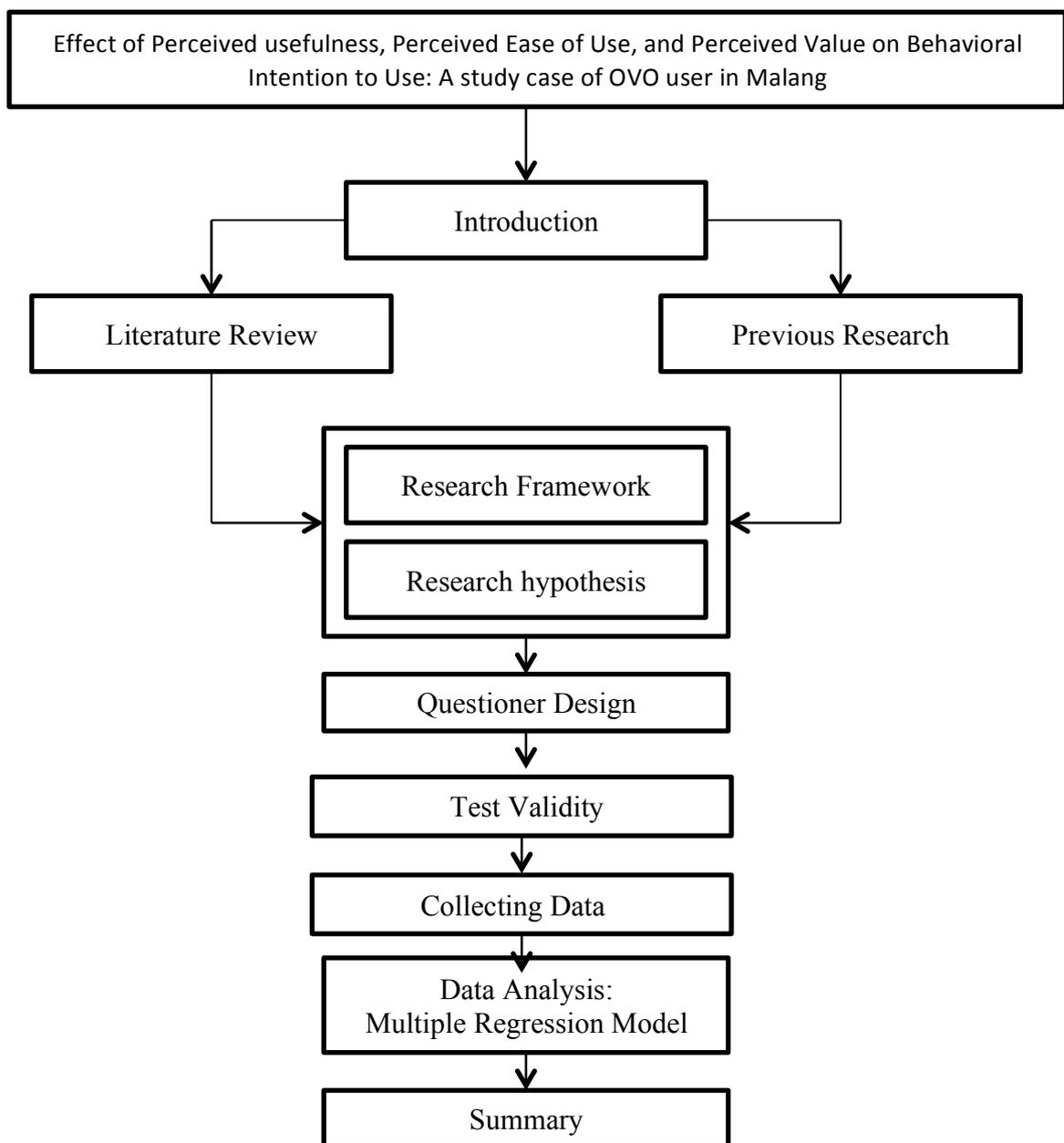
Source: Primary Data, Processed in 2019

2.9 Research Framework

The conceptual framework for this research was developed and based on combination models and constructs derived from the literature as **Figure 2.3**.

Figure 2.3

Research Framework



Source: Primary Data, Processed in 2019