

CHAPTER II

LITERATURE REVIEW

2.1. Theoretical Review

2.1.1. Perceived Value

Zeithaml (1988) defines perceived value as the entire consumer evaluation, based on the understanding about what is received and what is given, on the benefit of a product. Perceived value, as presented by Sweeney and Soutar (2001), consists of four dimensions such as emotional value, social value, and functional value. Functional value is divided into price value/value for money and performance/quality value.

Emotional value is defined as the benefits generated by a product from the emotional states (Sweeney & Soutar, 2001). In the context of online gaming, Yoo (2015) identifies emotional value as the pleasure obtained by the gamers from the games which leads to the willingness of the gamers to purchase items due to its ability to enhance the fun from playing games. Hsiao and Chen (2016), in their study, describe playfulness as an example of emotional value.

Social value is defined as the improvement of the social self-concept by the benefit obtained from the capability of a product (Sweeney & Soutar, 2001). In the context of online gaming, Yoo (2015) defines social value as the effect of owning the items on the improvement of the status of the gamers or the ability to brag. Hsiao and Chen (2016) mention connectedness as an example of social value.

Price value/value for money is defined as the benefit obtained from the decrease of the product's perceived costs of short and long term (Sweeney & Soutar, 2001). In the context of online gaming, Yoo (2015) describes value for money as the saving of time and money. Hsiao and Chen (2016) consider good price and reward as the examples of value for money.

Performance/quality value is the benefit obtained from the product's perceived quality and expected performance (Sweeney & Soutar, 2001). In the context of online gaming, Yoo (2015) explains functional value as the powerful effects of game items which leads to the willingness of the gamers to purchase the items to be more skilled than the others. If the items are considered as cost efficient, the players are willing to buy them. Hsiao and Chen (2016) mention access-flexibility as an example of performance/quality value.

2.1.2. Satisfaction

Satisfaction, as defined by Oliver (2010), is the opinion of the consumer about the fulfillment related to consumption at the pleasurable level, including under or over fulfillment level, served by a product or service or its feature (p. 8). Mittal and Frennea (2010) describe customer satisfaction as the post-consumption assessment of a consumer towards a product or service. As mentioned in Homburg, Koschate, and Hoyer's (2005) study, satisfaction is divided into two: "transaction-specific satisfaction" and "cumulative satisfaction". In terms of online gaming, Cheung *et al.* (2015) view satisfaction as "cumulative satisfaction" rather than transaction-specific

satisfaction”. Johnson, Anderson, and Fornell (1995) define “cumulative satisfaction” as the whole assessment of consumer towards the experience of purchasing and consuming. On the other side, Oliver (2010) mentions that dissatisfaction will occur if the fulfillment’s level is unpleasant (p. 15). This statement is supported by Ellyawati, Purwanto, and Dharmmesta (2012) who define dissatisfaction as the contrast of satisfaction.

2.1.3. Confirmation

Hsu and Lin (2015) mention that the “try-first” and “purchase-later” behavior tend to be adjusted by the majority of mobile app users due to the free versions provided. Hsu and Lin (2015) also state that pre-expectations might occur before the user uses the app and the evaluation of the performances occurs from the experiences after the use of the trial app. Confirmation or disconfirmation of the pre-purchase expectations are the outcomes of the user’s evaluation between the performances and the pre-purchase expectations. The user’s confirmation decides their satisfaction level towards the app (Hsu and Lin, 2015). According to the study on online banking division (OBD), Bhattacharjee (2001) confirmation is defined as the understanding of the users of the correspondence between the expectation and the actual performance of online banking division (OBD). Sarkar and Khare (2018), on the study of mobile shopping apps users, define confirmation as the awareness of expected results from mobile shopping apps usage and disconfirmation as the absence of meeting the primary expectations. Sarkar and Khare (2018), on the study of information system (IS)

continuance of mobile shopping apps, explained that the post-consumption expectations of the users tend to increase if there are confirmations on their expectations in the beginning. Otherwise, if there are no confirmation on their expectations in the beginning, the post-consumption expectations will decrease.

2.1.4. In-app Purchase Intention

Roma and Ragaglia (2016) mention freemium, in-app purchase, and advertising as the three types of revenue models for mobile application. Hsu and Lin (2015) state that a trial edition of apps is provided for free and then for premium facilities, a determined monthly subscription fee is charged by numerous app publishing companies in order to bring more users. On the other side, the other companies provide the full edition for free and the revenue is obtained from the advertising or in-app purchases which remove advertisement or provide value-added content (Hsu & Lin, 2015). Rutz, Aravindakshan, and Rubel (2019) claim that in-app purchase, by purchasing items to use them in the games or saving their times to reach particular accomplishment, enables users to enhance their gameplays.

Table 2.1. Review of Related Studies

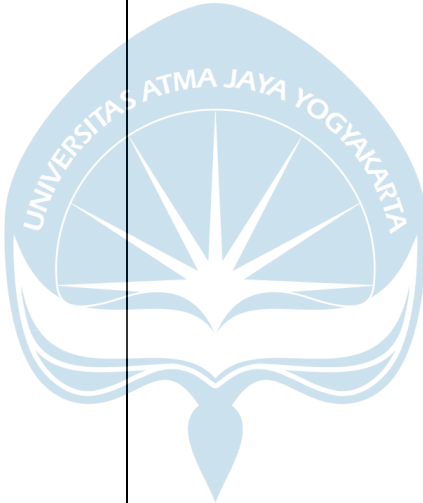
	Study	Variable	Methodology	Finding
1.	Hsu and Lin (2015): “What drives purchase intention for paid mobile apps? – An expectation confirmation model with perceived value”	<ol style="list-style-type: none"> 1. Performance value 2. Value-for-money 3. Emotional value 4. Social value 5. Satisfaction 6. Intention to purchase paid apps 7. Confirmation 8. App rating 9. Free alternative to paid apps 10. Habit 	<p>Analysis Tool:</p> <ol style="list-style-type: none"> 1. Structural Equation Modelling (SEM) using AMOS 21.0 2. Maximum Likelihood (ML), Generalized Least Squares (GLS), and Weighted Least Squares (WLS) to evaluate fitness in SEM <p>Analysis Unit: 507 users of smartphone app in Taiwan (156 actual users and 351 potential users).</p> <p>Data Collection: Posting survey on Sogi, Mobile01, and Facebook for 45 days.</p>	<p>Actual Users Group</p> <ol style="list-style-type: none"> 1. Confirmation influenced all perceived values and satisfaction. 2. Value-for money, satisfaction, and free alternative to paid apps influenced intention directly. 3. Performance/quality value, emotional value, social value, app rating, and habit did not have significant influence on intention. 4. Emotional value had indirect influence towards intention to purchase paid apps through satisfaction. 5. Performance/quality value and social value did not have direct influence towards satisfaction and intention. <p>Potential Users Group</p> <ol style="list-style-type: none"> 1. Confirmation influenced all perceived values and satisfaction. 2. Emotional value influenced satisfaction significantly. 3. Performance/quality value, value-for-money, and social value do not have direct influence on satisfaction. 4. Value-for-money, social value, app rating, and free alternative to paid apps influenced intention directly. 5. Performance/quality value, emotional value, and satisfaction have no significant influenced on intention.

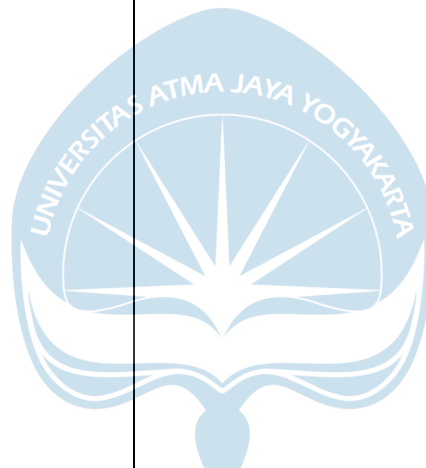
2.	Lu & Hsiao (2010): The influence of extro/introversion on the intention to pay for social networking sites	<ol style="list-style-type: none"> 1. Emotional value 2. Social value 3. Price/value for money 4. Performance/quality value 5. Overall satisfaction 6. Intention to pay 7. Control variables (age, gender, income) 	<p>Analysis Tool:</p> <ol style="list-style-type: none"> 1. Convergent and discriminant validity to examine construct validity 2. Theoretical model test using PLS-Graph Version 3.00 <p>Analysis Unit: 223 VIP members of iPartment who pay subscription fees</p> <p>Data Collection: Questionnaires consisting of 2 parts: for individual personality and for the variables</p>	<ol style="list-style-type: none"> 1. Social value, emotional value, quality value, and value for money had strong influences on overall perceived value. 2. Emotional value had strong indirect influence on intention. 3. Control variables did not have influence on intention to pay. 4. Perceived value influenced satisfaction. 5. Perceived value influenced intention. 6. Satisfaction did not have significant influence towards intention to pay. 7. Social value was more important for extroverts than introverts. 8. Emotional value was more important for introverts than extroverts. 9. Quality value was important for introverts and extroverts. 10. Value for money was more important for introverts than extroverts.
3.	Demirgüneş (2015): “Relative Importance of Perceived Value, Satisfaction and Perceived Risk on Willingness to Pay More”	<ol style="list-style-type: none"> 1. Functional value 2. Price value 3. Social value 4. Emotional value 5. Satisfaction with the product 6. Willingness to pay more 7. Perceived risk 	<p>Analysis Tool:</p> <ol style="list-style-type: none"> 1. Structural Equation Modeling (SEM) 2. Test of the measurement model, structural model, and mediation effects using AMOS 21.0 <p>Analysis Unit: 400 students of Başkent University in Ankara, Turkey</p>	<ol style="list-style-type: none"> 1. Functional value influenced satisfaction with the product. 2. Price value influenced satisfaction with the product. 3. Emotional value influenced satisfaction with the product. 4. Social value influenced satisfaction with the product. 5. Satisfaction with the product influenced willingness to pay more significantly. 6. Perceived risk did not have influence towards satisfaction with the product.

			<p>Data Collection: Survey method. Giving questionnaires to students who use a mobile phone brand</p>	<p>7. Perceived risk had negative influence towards willingness to pay more. 8. Satisfaction mediated the relationship between perceived value and willingness to pay more. 9. Emotional value influenced WTP positively. 10. All perceived value influenced satisfaction positively.</p>
4.	Hsiao & Chen (2016): “What drives in-app purchase intention for mobile games? An examination of perceived values and loyalty”	<ol style="list-style-type: none"> 1. Emotional value (playfulness) 2. Performance/quality value (access flexibility) 3. Social value (connectedness) 4. Value for money (good price) 5. Value for money (reward) 6. In-app purchase intention 7. Mobile game loyalty 8. Control variables (habit, platform, age, gender, income) 	<p>Analysis Tool: 1. SPSS 20.0 2. Structural Equation Modeling (SEM) using AMOS 21.0</p> <p>Analysis Unit: 3309 Tower of Savivors (ToS) players</p> <p>Data Collection: Distributing web-based questionnaires in virtual community of Tower of Savivors (ToS)</p>	<ol style="list-style-type: none"> 1. Loyalty influenced in-app purchase intention positively on both groups. 2. Playfulness, access flexibility, connectedness, reward influenced loyalty significantly on both groups. 3. Perceived playfulness, reward, and access flexibility influenced loyalty positively on both groups. 4. Playfulness, good price, and reward influenced in-app purchase intention on paying players. 5. Good price influenced in-app purchase intention on non-paying players. 6. Connectedness and reward influenced good price significantly but cannot stand alone to influence good price. 7. Habit influenced in-app purchase intention positively and significantly on both groups. 8. Playfulness and reward influenced the paying group stronger. 9. Good price had influence on nonpaying group stronger.

				<p>10. Gender and income influenced in-app purchase intention on paying players.</p> <p>11. Older players might not be more willing to pay.</p> <p>12. Higher income and experienced players will be more willing to pay.</p> <p>13. Age, gender, and income did not have significant influence towards in-app purchase intention.</p> <p>14. Android users were more willing to pay.</p> <p>15. Nonpaying players were more willing to pay through friends' recommendations.</p>
5.	Yoo (2015): "Perceived Value of Game Items and Purchase Intention"	<ol style="list-style-type: none"> 1. Functional value 2. Emotional value 3. Social value 4. Monetary value 5. Purchase intention of game 6. Intention of playing game 	<p>Analysis Tool: Regression</p> <p>Analysis Unit: 378 online gamers who, at least once, have purchased the items inside the game</p> <p>Data Collection: Online survey</p>	<ol style="list-style-type: none"> 1. All perceived values influenced purchase intention significantly. 2. Functional value had negative influence on purchase intention. 3. Purchase of game items influenced intention to play game positively and significantly.
6.	Sarkar & Khare (2018): "Influence of Expectation Confirmation, Network Externalities, and Flow on Use of Mobile Shopping Apps"	<ol style="list-style-type: none"> 1. Network externalities <ol style="list-style-type: none"> a. Referent network size b. Perceived complementary 2. Confirmation 3. Perceived usefulness 4. Satisfaction 	<p>Analysis Tool: IBM SPSS Statistics 23</p> <p>Analysis Unit: 363 mobile shopping apps users</p> <p>Data Collection: Online survey using email</p>	<ol style="list-style-type: none"> 1. Satisfaction had significant influence on continuance intention. 2. Satisfaction had significant influence on word-of-mouth. 3. Perceived usefulness had significant influence on satisfaction. 4. Perceived usefulness did not have significant influence on continuance intention.

		<ol style="list-style-type: none"> 5. Flow 6. Word-of-mouth 7. Continuance intention 		<ol style="list-style-type: none"> 5. Confirmation had significant influence on satisfaction. 6. Confirmation had significant influence on perceived usefulness. 7. Flow had significant influence on continuance intention. 8. Flow had significant influence on satisfaction. 9. Flow had significant influence on perceived usefulness. 10. Referent network size did not have significant influence on perceived usefulness. 11. Perceived complementary had significant influence on perceived usefulness.
7.	Hsiao (2013): “Android smartphone adoption and intention to pay for mobile internet: Perspectives from software, hardware, design, and value”.	<ol style="list-style-type: none"> 1. Software <ol style="list-style-type: none"> a. Interface convenience b. Perceived content 2. Hardware <ol style="list-style-type: none"> a. Perceived infrastructure 3. Appearance <ol style="list-style-type: none"> a. Design aesthetics 4. Attitude toward using smartphone 5. Intention to adopt Android smartphone 	<p>Analysis Tool: Structural Equation Modeling (SEM)</p> <p>Analysis Unit: 881 users of android smartphone in Taiwan</p> <p>Data Collection: Online questionnaires by posting on web sites and bulletin boards systems featuring smartphone-related activities in Taiwan</p>	<p>Never-use Group</p> <ol style="list-style-type: none"> 1. Interface convenience did not have significant influence on attitude. 2. Perceived content had significant influence on attitude. 3. Perceived infrastructure had significant influence on attitude. 4. Design aesthetics did not have significant influence on attitude. 5. Attitude toward using smartphone had significant influence on intention to adopt. 6. Intention to adopt android smartphone had significant influence on intention to pay. 7. Price/value for money had significant influence on intention to pay.

		<ul style="list-style-type: none"> 6. Intention to pay for mobile internet services 7. Emotional value 8. Social value 9. Price/value for money 10. Performance/quality value 		<ul style="list-style-type: none"> 8. Performance/quality value had significant influence on intention to pay. <p>Seldom-use Group</p> <ul style="list-style-type: none"> 1. Interface convenience did not have significant influence on attitude. 2. Perceived content had significant influence on attitude. 3. Perceived infrastructure had significant influence on attitude. 4. Design aesthetics did not have significant influence on attitude. 5. Attitude toward using smartphone had significant influence on intention to adopt. 6. Intention to adopt android smartphone did not have significant influence on intention to pay. 7. Emotional value had significant influence on intention to pay. 8. Social value had significant influence on intention to pay. 9. Price/value for money did not have significant influence on intention to pay. 10. Performance/quality value did not have significant influence on intention to pay. <p>Often-use Group</p> <ul style="list-style-type: none"> 1. Interface convenience had significant influence on attitude.
--	--	--	---	--



				<ol style="list-style-type: none"> 2. Perceived content had significant influence on attitude. 3. Perceived infrastructure did not have significant influence on attitude. 4. Design aesthetics did not have significant influence on attitude. 5. Attitude toward using smartphone had significant influence on intention to adopt. 6. Intention to adopt android smartphone did not has significant influence on intention to pay. 7. Emotional value had significant influence on intention to pay. 8. Social value had significant influence on intention to pay. 9. Price/value for money did not have significant influence on intention to pay. 10. Performance/quality value did not have significant influence on intention to pay.
8.	Baabdullah (2018): “Consumer adoption of Mobile Social Network Games (M-SNGs) in Saudi Arabia: The role of social influence, hedonic motivation and trust”	<ol style="list-style-type: none"> 1. Performance expectancy 2. Effort expectancy 3. Social influence 4. Facilitating conditions 5. Hedonic motivation 6. Price value 7. Trust 8. Behavioral intention 	<p>Analysis Tool:</p> <ol style="list-style-type: none"> 1. Structural Equation Modeling (SEM) 2. Confirmatory Factor Analysis (CFA) 3. AMOS 22.0 <p>Analysis Unit: 600 samples from Saudi Arabia</p>	<ol style="list-style-type: none"> 1. Performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and trust influenced behavioral intention. 2. Social influenced trust significantly. 3. Hedonic motivation influenced trust significantly.

			<p>Data Collection: Field survey using self-administered questionnaire</p>	
9.	<p>Wang, Lin, Wang, Shih, and Wang (2018): “What drives users’ intentions to purchase a GPS Navigation app: The moderating role of perceived availability of free substitutes”</p>	<ol style="list-style-type: none"> 1. Perceived benefits <ol style="list-style-type: none"> a. Compatibility b. Relative advantage c. Perceived enjoyment 2. Perceived sacrifices <ol style="list-style-type: none"> a. Complexity b. Perceived cost 3. Perceived value 4. Perceived availability of free substitutes 5. Purchase intention 	<p>Analysis Tool: Partial Least Squares (PLS) using SmartPLS software</p> <p>Analysis Unit: 219 respondents in Taiwan who have used mobile app</p> <p>Data Collection: Giving online questionnaires on a survey portal (www.my3q.com)</p>	<ol style="list-style-type: none"> 1. Perceived value influenced purchase intention positively. 2. Relative advantage influenced on perceived value significantly. 3. Compatibility, through perceived value, influenced perceived value positively. 4. Perceived enjoyment influenced perceived value positively. 5. Complexity had negative influence on perceived value. 6. Perceived cost had positive influence on perceived value (higher cost perceptions were related to higher value perceptions). 7. Perceived availability of free substitutes had negative moderating effect between perceived value and purchase intentions.
10.	<p>Cheung, Shen, Lee, and Chan (2015): “Promoting sales of online games through customer engagement”</p>	<ol style="list-style-type: none"> 1. Game satisfaction 2. Game customization 3. Social interaction 4. Psychological engagement (vigor, dedication, absorption) 5. Behavioral engagement 11. Online sales 	<p>Analysis Tool: Partial Least Squares (PLS)</p> <p>Analysis Unit: 377 players of MMOG video games</p> <p>Data Collection:</p>	<ol style="list-style-type: none"> 1. Psychological and behavioral engagements influenced the amount of money spent in online games (online sales). 2. Psychological engagement influenced behavioral engagement. 3. Game satisfaction, game customization, and social interaction influenced psychological engagement significantly.

			Using survey design (Online questionnaires) and collecting data from marketing research firm	<ol style="list-style-type: none"> 4. Game satisfaction, game customization, and social interaction influenced online sales significantly. 5. The relationship of game satisfaction, game customization, and social interaction with online sales were fully or partially mediated by psychological engagement.
--	--	--	--	---

Sources: International Journals (Downloaded in 2019)



2.2. Hypotheses Development

2.2.1. Perceived Value

Demirgüneş (2015) defines customer satisfaction as the outcome of the perception of a customer on the value obtained. In line with this statement, Hsu and Lin (2015) mention that there will be an enhancement in satisfaction and purchase intention when the value of product and service are felt by the customers. Moreover, Lu and Hsiao (2010) state that the increase of perceived value would increase the overall satisfaction as well. Hsu and Lin (2015) mention that a variety of apps from various categories provide the four types of perceived values for the users who download and use them. Hsu and Lin (2015) add that the perceived value may be developed when the customers use mobile-related applications and services.

The study conducted by Demirgüneş (2015) on mobile phone brand customers in Turkey, discovers that all perceived values (functional, performance, emotional, and social values) affect the customers' satisfaction towards the mobile phone brand significantly. Demirgüneş (2015) suggests that keeping positive perception of the customer provide both satisfaction and willingness to pay more (WTP more). Furthermore, the study by Lu and Hsiao (2010) on VIP members of a social network site (SNS), iPartment, showed that perceived value (emotional, social, price/value for money, and performance/quality) influenced the overall satisfaction of the members. Furthermore, the study by Hernandez-Ortega, Aldas-Manzano, Ruiz-Mafe, and Sanz-Blas (2017) on the Greek and Spanish users of advanced mobile messaging services

(AMMS) treated satisfaction as the consequence of perceived value (emotional value, social value, cost-benefit value, and quality-performance value). The study conducted by Hernandez-Ortega *et al.* (2017) showed that perceived value influenced satisfaction significantly on both Greek and Spanish AMMS users.

Therefore, based on those statements, the relationship between perceived value and satisfaction is stated into the following hypotheses:

H1a. Functional value influences satisfaction on M-SNGs.

H1b. Price value influences satisfaction on M-SNGs.

H1c. Social value influences satisfaction on M-SNGs.

H1d. Emotional value influences satisfaction on M-SNGs.

Lu and Hsiao (2010) mention that, based on the previous studies, the purchase decision of the consumers may be affected by one or all of the perceived value such as functional value, social value, epistemic value, and conditional value. Moreover, Hsu and Lin (2015), as mentioned before, state that when the consumers sense the value of product and service, their satisfaction and purchase intention will enhance.

Previous studies have linked perceived value with purchase intention. Those studies have shown that the dimensions of perceived value have significant effects on purchase intention. The study by Lu and Hsiao (2010), for example, showed that overall perceived value (emotional value, social value, price/value for money, and performance/quality value) experienced by mobile app users influenced their intention to pay for iPartment services. Lu and Hsiao (2010) concludes perceived value as the important determinant of intention to pay. Another example, the study by Hsiao (2013)

on android smartphone users in Taiwan showed that in different groups (never-use, seldom-use, and often-use), perceived values had different impacts on intention to pay for mobile internet services. Hsiao (2013) found out that social value and emotional value have significant impacts on intention to pay and concluded that more paying users will be brought if positive emotions are increased by mobile internet services. Moreover, the study by Hsu and Lin (2015) on smartphone app users in Taiwan, categorized into actual and potential users, provided several results. For actual users, value for money had direct influence on the users' intention to purchase paid apps and emotional value, through satisfaction, had indirect influence on the intention to purchase for paid apps. For potential users, value for money and social value had direct influence on the users' intention to purchase paid apps (Hsu and Lin, 2015). Lastly, the study by Hsiao and Chen (2016) Tower of Savivors (ToS) players, which were divided into paying and non-paying players, resulted that playfulness (emotional value), good price (value for money), and reward (value for money) influenced the paying players' in-app purchase intention. On the other side, good price (value for money) influenced the non-paying players' in-app purchase intention.

Therefore, based on those studies, some or all dimensions of perceived value are the determinants of purchase intention. Therefore, the relationship between perceived value (functional value, price value, social value, and emotional value) and in-app purchase intention is stated into the following hypotheses:

H2a. Functional value influences in-app purchase intention on M-SNGs.

H2b. Price value influences in-app purchase intention on M-SNGs.

H2c. Social value influences in-app purchase intention on M-SNGs.

H2d. Emotional value influences in-app purchase intention on M-SNGs.

2.2.2. Satisfaction

Bhattacharjee (2001) mentions that repurchase intention is the outcome of satisfied consumers, and on the other side, the discontinuance of use is the result of dissatisfied consumers. Hsu and Lin (2015) argue that high level of users' satisfaction with the apps leads to the intention to buy paid apps. Hamari and Keronen (2016) state that the level of people's satisfaction of using virtual goods and if they possess a positive behavior over the use of actual money in virtual environments drive purchase intention.

The study conducted by Demirgüneş (2015) discovers that the satisfaction of mobile phone brand consumers influenced their willingness to pay more (WTP more) for the product. Moreover, the experiment conducted by Tuu and Olsen (2012) on canned mackerel consumers showed that satisfaction had significant influence towards purchase intention. Tuu and Olsen (2012) conclude that an equal rise in customer satisfaction will create an equal rise in purchase intention. Lastly, the study by Hamari and Keronen (2016) on the previous conducted studies (on various types of games) resulted that how satisfied people are from using virtual goods and if they possess a positive attitude on the use of real money in virtual environments lead to purchase intention. Therefore, based on those studies, the relationship between satisfaction and in-app purchase intention is stated into the following hypothesis:

H3. Satisfaction influences in-app purchase intention on M-SNGs.

2.2.3. Confirmation

Hsu and Lin (2015), in the context of smartphone app users, describe that by using the apps, there is an understanding of its real efficiency. Sarkar and Khare (2018) explain confirmation, in the context of mobile shopping apps, as the understanding of the expected results or advantages from the usage of those apps and disconfirmation as the lack of fulfilling those expectations.

Several studies have shown the influence of confirmation on perceived value. The study by Hsu and Lin (2015) revealed that the confirmation of smartphone app users in Taiwan (both potential users and actual users) influenced their perceived value (functional value, price value, social value, and emotional value) for the smartphone apps. Based on the results, Hsu and Lin (2015) consider confirmation, in the app usage circumstance, as a significant variable. Based on those studies, the relationship between confirmation and perceived value is stated into the following hypothesis:

H4a. Confirmation influences functional value on M-SNGs.

H4b. Confirmation influences price value on M-SNGs.

H4c. Confirmation influences social value on M-SNGs.

H4d. Confirmation influences emotional value on M-SNGs.

On the other side, many studies have linked confirmation with satisfaction. For example, the study by Bhattacharjee (2001) showed that the online banking division (OBD) customers' confirmation from the prior use of IS contributed to their

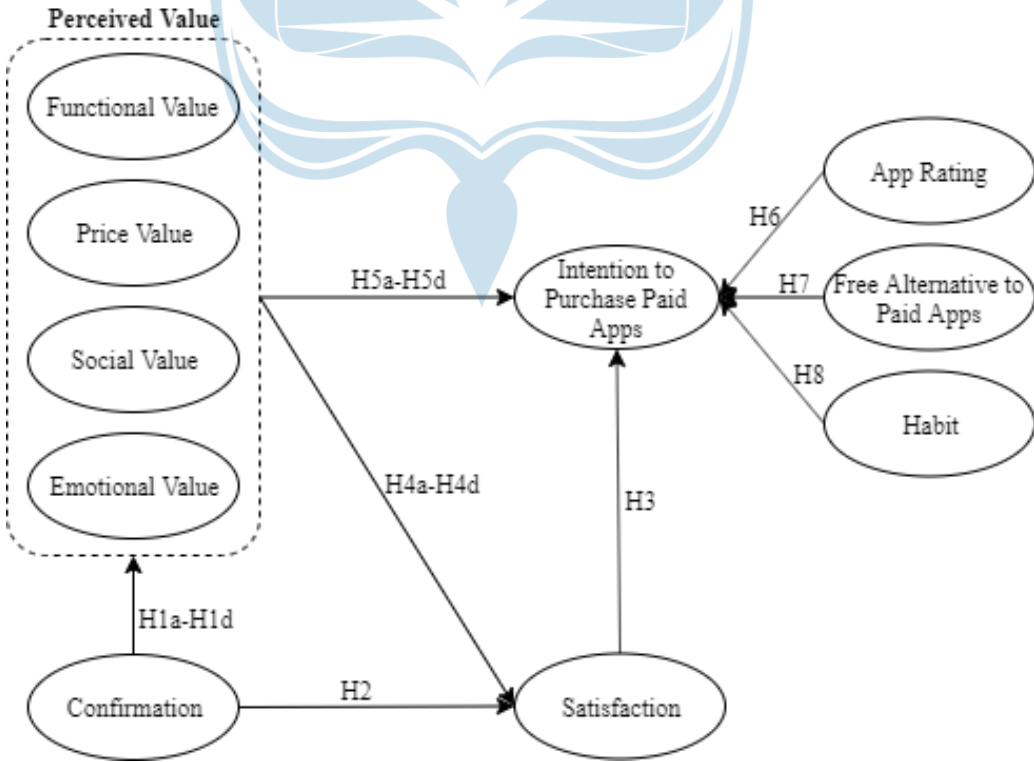
satisfaction. The study by Hsu and Lin (2015) also showed that the satisfaction of both potential and actual smartphone app users in Taiwan were influenced by their confirmation towards the smartphone apps. Based on the results that showed positive influences on perceived value and satisfaction of both potential and actual smartphone app users, Hsu and Lin (2015) conclude confirmation as an essential variable for app usage. Sarkar and Khare (2018), in the study on mobile shopping apps users, found out that satisfaction was influenced by confirmation of the users positively. Sarkar and Khare (2018) suggest that it is significant to focus on the satisfaction by investigating and carrying out the users' expectations. Therefore, based on those studies, the relationship between confirmation and satisfaction is formulated into the following hypothesis:

H5. Confirmation influences satisfaction on M-SNGs.

2.3. Research Model

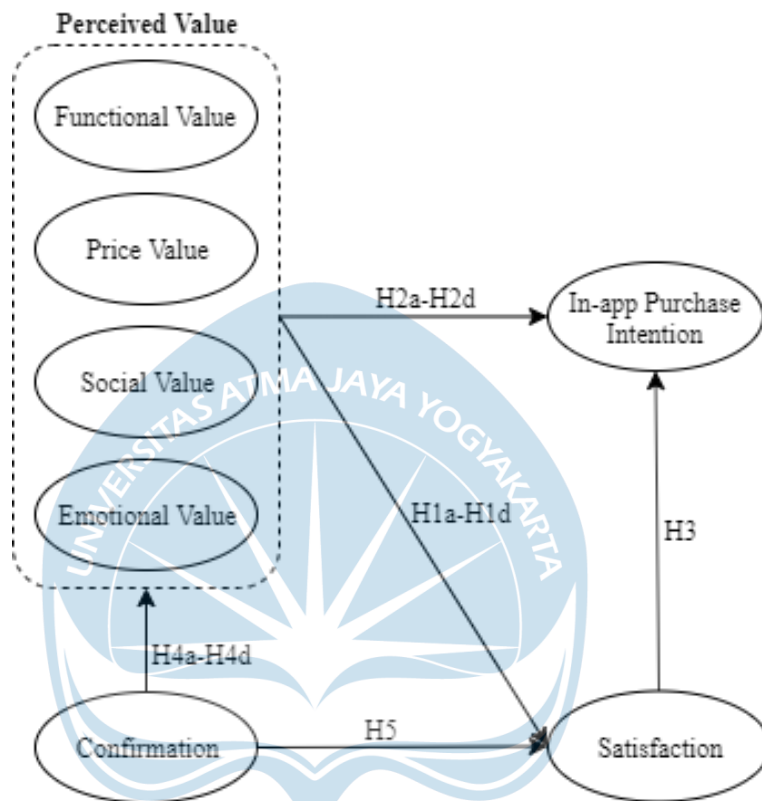
This study was adapted and modified from the study previously conducted by Hsu and Lin (2015) (Figure 2.1) which applied the Expectancy Confirmation Model (ECM). The study by Hsu and Lin (2015) analyzed factors that influence purchase intention on paid apps by applying Expectation Confirmation Model (ECM) and adding variables such as app rating, free alternative to paid apps, and habit. However, this study did not include app rating, free alternative to paid apps, and habit based on several considerations. First, the object of this study was a mobile game application called HAGO, which is a free to download app, while the objects of the study by Hsu and Lin

(2015) were paid mobile applications. Therefore, this study did not include app rating and free alternatives to paid apps since the users can download and play HAGO for free (except for particular in-game items or features). Second, the result of the study conducted by Hsu and Lin (2015) showed that habit does not have significant influence towards the intention to purchase paid apps. Based on the result, Hsu and Lin (2015) stated that habit does not appear to be an important determinant for purchase intention for paid apps. Therefore, this study applied the Expectancy Confirmation Model (ECM) modified by Hsu and Lin (2015) without including app rating, free alternative to paid apps, and habit. The research model of this study is figured into the following Figure 2.2.



Source: Hsu and Lin (2015)

Figure 2.1. Research model from Hsu and Lin (2015)



Source: Hsu and Lin (2015)

Figure 2.2. Research model of this study adapted and modified from Hsu and Lin (2015).