



Analyzing factors which drives mobile apps users' intention to purchase paid mobile apps

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ABSTRACT

Background: The study is aimed toward understanding the factors that lead to the intention to purchase to a certain paid mobile apps, this objective is influenced by the current phenomenon where there is an increase in mobile apps user spending toward mobile apps and the superb growth of the industry. **Method:** The research relies on the expectation-confirmation model (ECM) for its research model. It used an online survey to users who already have experience in purchasing mobile apps (N = 276). The research uses structural equation modeling (SEM) with the use of AMOS 24 software to examine the hypothesis. **Findings:** It is found that confirmation influences perceived value and satisfaction, while the rest of the perceived value, apart from performance value positively affect satisfaction. Then value-for-money value, satisfaction, apps rating, free alternative to the paid apps, and habit have a significant impact on user intention to purchase as only free alternatives to the paid apps have a negative one. **Conclusion:** The research finding could contribute the finding to understand the mobile apps industry better while for a more practical contribution, there are some suggestions for parties that are related or involved in the mobile apps industry.

KEYWORDS: digital products; expectation-confirmation model; mobile apps; satisfaction; paid apps.

1. Introduction

The mobile apps industry is gaining more traction in recent years, as more individuals could easily obtain smartphones along with the increasing demand of mobile apps as they provide a better feature and function that fulfills user needs and wants. Apart from the increasing smartphone user each year up until 3.2 billion smartphone users (Statista, 2018), the mobile apps surely is becoming a vital part in human lives with more and more user spending more time in mobile apps rather than web surfing, and the significant growth of consumer time spent in mobile apps (COMSCORE et al., 2017; Sydow, 2019).

It seems that as the mobile apps industry growing exponentially, the consumer spends a rather high amount of money on mobile apps, both to non-gaming apps and gaming apps. In 2018 itself, \$19.7 billion is the amount the worldwide consumer manages to spend in non-gaming mobile apps. While for gaming apps the amount of \$27 billion have been spent by mobile apps used for mobile games in China. (Sydow, 2019). With the average smartphone users in developed countries has over 100 mobile apps that have been installed on their smartphone (Sydow, 2019). This also becomes a phenomenon in Indonesia, which is the region the research is focusing on. With the increasing number of smartphone users

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and about the finding that 70% of unique users by platform and demographic, use only mobile devices rather than other devices such as laptop or desktop (COMSCORE et al., 2017).

The research adopted the Expectation-Confirmation Model (ECM) as the main model to conduct the research, while it is also believed that the ECM is a model that is used in various research that has a similar context, with the focus on Information System (IS). The model that is used comes from Hsu & Lin (2015) research, with some changes. The uses of the ECM model is because It is believed that most of the users have the experience of using the free or trial version of the respective mobile apps before purchasing it. The main variables are the Confirmation that could also be called the user initial expectation fulfilled towards the apps. Therefore, it suggests the difference between the user initial expectation toward the mobile apps and the actual experience of the usage of the mobile app (Bhattacharjee, 2001).

The perceived value multi-dimension holds various factors that are also utilized in the research. The perceived value multi-dimension consists of 4 sub-categories, which are performance value, value-for-money value, emotional value, and social value. Which each category focus on different kind of utility derived from the products and services and its weight for each users.. (Hsu & Lin, 2015; Turel et al., 2010).

The mobile apps industry is also impacted by other variety of factors that could not be controlled by the mobile apps, which could be called as external factors or outside factors. The research chose 3 external factors that are believed to be unique for the context, and have a higher chance to create an impact on the user behaviour. Those external factors are; apps rating, free alternative to the paid apps, and users' habit. With the apps rating, and free alternative to the paid apps are the factors that are unique to the context and also have an impact as the users' valuation may vary because of review or rating from prominent users or because there is a free or accessible alternative to the mobile apps (Chen & Xie, 2008; Hsu et al., 2013; Y. Y. Wang et al., 2018). While users' habit is a common understanding that the user behaviour may predict future behaviour.

Other than the more updated indicators and items variables compared to Hsu & Lin works, the intended individual to be included in the research have the requirement for them to already have the experience in purchasing or spending money in a mobile app. To understand the factors better in different demographics, past behaviour, with some restrictions like the current situation, maybe a better predictor for future behaviour that relates heavily to behavioural consistency as stated by Franklin (2013). The past behaviour also directly affect individuals' attitudes and behavioural decision that is different from the outcome-specific cognitions (Albarracin & S. Wyer Jr., 2000). Therefore, it is safe to assume the demographic will have a rather different outcome than the general population.

This research is made in the hope it could provide beneficial contributions, academic and practical. Academically, hopefully, the research have could contribute to other researchers and research with related context, may it help future research and may act as a reference for others. Practically, it is in the research's best interest for the research analysis result to help mobile apps developers and publishers in determining their core decision regarding their products.

The research is trying to answer some questions which relate heavily to the research's objectives, as the research trying to answer whether the perceived value multi-dimension and user confirmation or initial expectation have a positive impact to user purchase intention and user satisfaction, while also trying to answer whether the external factors have a positive impact toward user purchase intention to purchase. The research objectives relate to the research questions and trying to analyze the influence or effect of each variable to the user behaviour and satisfaction.

1.1 Expectation-Confirmation Model (ECM)

Expectation Confirmation Model or ECM is an adaptation of Expectation-Confirmation Theory (ECT), that explained that post-purchase satisfaction which also influences

repurchase intention is being influenced by expectations and perceived performances (Hsu & Lin, 2015). The Expectation-Confirmation Model follows Information Systems user's continuance decision, as its decision is similar to consumer's repurchase intention as both decisions follow an initial decision, influenced by the initial use of experience and can potentially lead to an ex-post reversal of the initial decision (Bhattacharjee, 2001). As ECM is an adaptation to the ECT, there is some difference that differentiate both models as ECT itself is used to study consumer behaviour and other marketing-related contexts, while the ECM is made to effectively measure those variable in the context that is strictly related to Information System (IS) user continuance rather than user repurchase intention in general.

1.2 Confirmation & satisfaction

Confirmation, also called user initial expectation is the extent of users perceive their initial expectation of apps as being confirmed during actual use (Bhattacharjee, 2001). While it also can be said as an individual's perception of an outcome that meets an already established expectation or pre-made expectation (Jiang & Klein, 2009). For Satisfaction, some definitions about satisfaction underline an affective state that normally result from and have a relation with a cognitive appraisal of the expectation-performance discrepancy or Confirmation (Bhattacharjee, 2001).

1.3 Perceived value

Perceived value have a variety of description of what it is about, a more general definition is that perceived value is a user's total evaluation of utility based on losses and benefits (Kim et al., 2007; Sweeney & Soutar, 2001; Zeithaml, 1988). Consumers perceive value is different among consumers, as some may perceived value when there is a balance between quality and price, while others only perceive value when there is a low price. In doing so, the component of perceived value might be differently weighted with different consumers (Zeithaml, 1988).

The perceived value dimensions include 4-sub category of perceived value, which are performance value which is The utility derived from the perceived quality and expected performance of the product, sometimes refer or included as Functional Value (Sweeney & Soutar, 2001). Value-for-money value which is the perceived utility derived from the products due to the reduction of its perceived costs, both short term and long term (Sweeney & Soutar, 2001). Emotional value which is a situational characteristic of the interaction between an individual and a situation, sometimes the trait of playfulness may also be treated as a motivational characteristic, while it basically an utility derived by emotional or affectionate feeling generated by the mobile apps (Sweeney & Soutar, 2001). Lastly, social value is an utility derived when the mobile apps able to produce utility that able to enhance customer social self-concept (Sweeney & Soutar, 2001).

1.4 Extended variables

Free alternative to the paid apps variable is focused on the availability of free mobile apps that offer a similar and comparable performance and quality value to the paid mobile apps (Hsu & Lin, 2015). Customers generally tend to attempt to compare similar apps or apps from competitor in order to attain a better understanding and information (Yang & Peterson, 2004).

Apps Rating refers to the score the apps received that normally identified as post-purchase satisfaction from the customer. Rating usually reflect an opinion about functionality or performance, although a few of customer also rely on rating to identify harmful or inappropriate mobile apps in the app store (Chia et al., 2012). Habit explained that it is a unique mindset that enhances the perceptual readiness for habit-related cues, prevents the individual from distraction, and utilizes less efficient action (Verplanken & Aarts, 1999).

2. Methods

2.1 Hypotheses development & research model

2.1.1 Confirmation

Lower expectations will lead to greater confirmation that in turn would positively influence customer satisfaction and the perceived value of the mobile apps. (Bhattacharjee, 2001; Hsu & Lin, 2015). While for confirmation effect to satisfaction it is found that confirmation has a major effect on customer satisfaction, with also an additional finding that user's various beliefs are affected by the level of confirmation (Thong et al., 2006).

H1a – H1d: Confirmation (user's expectation being delivered by apps) will positively affect User's (a) Performance Value; (b) Value-for-money; (c) Emotional value; and (d) Social value.

H2: Confirmation have a positive effect towards user satisfaction

2.1.2 Satisfaction

Satisfaction find that it can act as a reliable predictor of customer's repurchase intention, as it is also known that customer commonly change decision or products if the user do not have any satisfaction derived from the products (Anderson & Srinivasan, 2003; Y. Wang et al., 2001).

H3: Satisfaction have a positive impact toward user purchase intention

2.1.3 Perceived value multi-dimension

Perceived value is an important aspect in the marketing of products and services, additionally, it was known that perceived value has a significant impact on customer satisfaction and repurchase intention (Lin & Wang, 2006). , Apps who have a more complex way to operate or when consumer perceived that particular apps to have more complex usage it would lower the consumer perceived value and ultimately reduce purchase intention (Anderson & Srinivasan, 2003).

H4a: Performance value have a positive impact towards user satisfaction

H5a: Performance value have a positive impact towards user purchase intention

For value-for-money value, a research by Turel et al. (2010) considered that users who perceive the price of a product is inexpensive compared to its benefits are likely to adopt it, surely increase the customer perceived value.

H4b: Value-for-money have a positive impact towards user satisfaction

H5b: Value-for-money have a positive impact towards user purchase intention

For emotional value, a study revealed that the effect of enjoyment on behavioural usage intentions was mediated through two concepts: perceived playfulness value and overall value assessment (Turel et al., 2010). there is also a finding that show hedonic value, which include emotional value provide a positive influence to customer satisfaction, intention, and behaviour (Karjaluoto et al., 2019).

H4c: Emotional value have a positive impact towards user satisfaction

H5c: Emotional value have a positive impact towards user purchase intention

For social value, it is been known that individuals often affected by different and particular behaviours and attitudes from their social environment or circle, even though it's the individual decision nonetheless (Tang et al., 2019)

H4d: Social value have a positive impact towards user satisfaction

H5d: Social value have a positive impact towards user purchase intention

2.1.4 Apps rating

Apps rating is one of the unique external factor that is found to have a strong correlation between customer rating and the number of downloads the apps have (Finkelstein et al., 2017). With an additional research that found a positive relationship between intention to purchase behaviour and the positive user review (Clemons et al., 2006; Xue & Zhou, 2011).

H6: Apps positive rating has a positive impact towards user intention to purchase

2.1.5 Free alternative to the paid apps

A research reports state that when an acceptable alternative products or services are available, consumer become more prone to switch their decision. With an additional finding that customer purchase intention tend to increase if there are no free apps substitute (Campo et al., 2000; Jones et al., 2000).

H7: Free alternative to paid apps will negatively affect user intention to purchase

2.1.6 User' habit

Habit also is verified to have an impact on behavioural intention and continuance (Chiu et al., 2009). With other research said that Habit is a good predictor for repeat purchase intention or have a positive influence on it based on the context of online commerce (Chiu et al., 2012).

H8: Habit will positively affect user intention to purchase

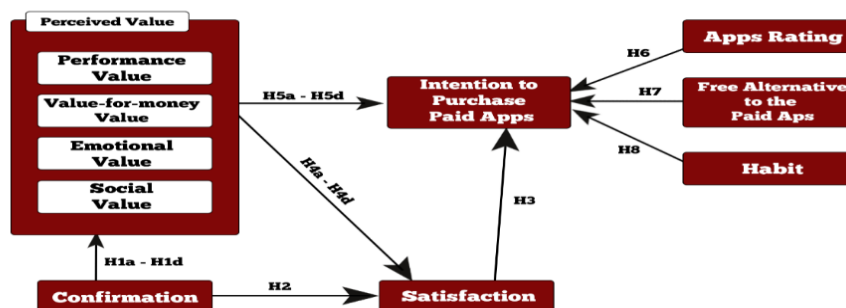


Figure 2 Research model

2.2 Methodology

2.2.1 Data collection

The research use a primary data that is gained by using online survey with the support of Google Form, the questionnaire for the survey use structured questions in order to gain a clear result of the research, while it used a scale questions for its core questions that utilize Likert Scale with a 5-point scale. The data collection used a convenience sampling, while the

collection process is aimed at the intended population. The data collection's procedure for the pre-test and main test used the same questionnaire for the survey with some changes, although the scope of the pre-test is much smaller than the main test. The survey is published in various social media and chatting applications with the addition of a survey poster which have the objective to attract the intended individual and avoid individual that does not fulfil the requirement to fill the questionnaire.

2.2.2 Sampling

The research only focusses on the smartphones users that already have the experience in purchasing or spending money on their respective mobile apps. In addition, while it does not focus on certain age, the research is believed to be more attracted to Gen Z individual or individual with the age of 16 to 24. For the geographic scope of the research, the research is focus on individual live in Indonesian. The research use a non-probability sampling as the population of the research is not known in detail, while for the technique it use a purposive judgement which is a non-probability sampling technique.

2.2.3 Data Analysis

Before the main test, the research conducted wording test and pre-test first in order to create an effective questionnaire for the main test. Wording test is conducted because even though the research is created with the use of English language and writing, the area in which the research is conducted is in Indonesia. Therefore, the wording test is done to create an accurate translation from English to Indonesian language in order to avoid error or misunderstanding that may come from the survey participant. The research also conducted the pre-test in order to test the reliability and validity of the test, to check whether the indicator is valid or reliable.

The research used the IBM AMOS 24 software to conduct the analysis, as AMOS is a known software to conduct an analysis for multivariate technique. The research used Structural Equation Model (SEM) for the analysis. SEM is a multivariate technique that combines multiple regression and the aspects of factor analysis that will make the researcher to simultaneously examine a series of interrelated dependence relationships among the measured variables and latent constructs (variates) as well as between several latent construct (Hair et al., 2010). The research also conducted measurement model analysis, that in this case, is called Confirmatory Factor Analysis (CFA). The measurement model analysis is used to analyze relationship between latent and observed variable, it used to find the validity and reliability of item. It used Standardized Loading Factors, Construct Reliability (CR) and Average Variance Extracted (AVE) to calculate it.

The research also conducted Goodness of Fit test or a model fit for both measurement model and structural model to find whether the model is a marginal fit, a good fit, or even a bad fit for the research. With the final of the causal relationship analysis to find whether the hypothesis the research proposed could be accepted or not, given the result received by this analysis or research.

3. Result and discussion

3.1 Confirmatory factor analysis

Tabel 1. Confirmatory factor analysis

Scales & Individual Items		SLF	AVE	CR
<i>Confirmation</i>				
CON1	My experience using the apps was better than I expected	0.80	0.59	0.81

CON2	The service level or function provided by apps was better than I expected	0.75		
CON3	Overall, most of my expectations from using the apps were confirmed (delivered)	0.75		
<i>Performance Value</i>				
PV1	Apps are well designed	0.79		
PV2	Apps have an acceptable standard of quality	0.76	0.59	0.85
PV3	Apps offer consistent quality	0.77		
PV4	Apps offer a stable system and quality	0.76		
<i>Value-for-money Value</i>				
VV1	Apps are reasonably priced	0.79		
VV2	Apps offer value-for-money	0.83		
VV3	Apps have a good economic value	0.79	0.64	0.88
VV4	The quality of apps are good relative to the price	0.78		
<i>Emotional Value</i>				
EV1	I enjoy using the apps	0.74		
EV2	Using the apps make me feel relaxed	0.76		
EV3	Overall, I believe that the apps usage is fun	0.78	0.57	0.87
EV4	The use of apps makes me want to use them	0.77		
EV5	Using the apps makes me feel good	0.74		
<i>Social Value</i>				
SV1	The use of the apps improves the way I am perceived	0.84		
SV2	The use of the apps creates a good impression on other people	0.95	0.77	0.91
SV3	The use of the apps gives me social approval	0.84		
<i>Satisfaction</i>				
SAT1	Using the apps makes me feel satisfied	0.83		
SAT2	Using the apps makes me feel contented	0.82	0.62	0.87
SAT3	Using the apps makes me feel delighted	0.75		
SAT4	Using the apps gives me a sense of enjoyment	0.74		
<i>Apps Rating</i>				
RAT1	The apps I used are highly rated	0.71		
RAT2	I feel that the apps I use have a good rating on the apps store	0.78	0.57	0.80
RAT3	I find there are a lot of people who rate the apps	0.77		
<i>Free Alternative to the Paid Apps</i>				
FRE1	I can find free alternative to the paid apps	0.62		
FRE2	There are free alternative to the paid apps fill the same need as the paid apps	0.84	0.65	0.88
FRE3	The free alternative to the paid apps meet my needs	0.89		
FRE4	The free alternative to the paid apps offer good quality	0.85		
<i>Habit</i>				

HAB1	I am addicted to using the apps	0.54		
HAB2	This is my preferred apps to used	0.71		
HAB3	When I need to buy paid apps, this apps would be my first choice	0.56	0.38	0.71
HAB4	I often use the apps to communicate with others (or for entertainment of work or for conducting transaction)	0.64		
<i>Intention to Purchase</i>				
INT1	I find purchasing paid apps to be worthwhile	0.76		
INT2	I will frequently purchase paid apps in the future	0.72	0.47	0.78
INT3	I strongly recommend others to purchase paid apps	0.64		
INT4	I intend to keep purchasing paid apps	0.61		

3.2 Respondent profile

This section explain more detail on the profile of the 276 respondent that is relevance to the specific criteria that the main test research define. The relevance of the indicator of the demographic question has been adjusted with the needs of this research study.

Tabel 2. Summary of respondent profile

Respondent Profile	Total	Percentage	Respondent Profile	Total	Percentage
Gender			Domicile		
Male	122	44%	Jakarta	98	35,5%
Female	154	56%	West Java	49	17,8%
Age			Others (Outside Java)	42	15,2%
16 – 20	79	29%	Banten	38	13,8%
21 – 24	125	45%	East Java	30	10,9%
25 – 30	54	20%	Central Java	19	6,9%
>30	18	6%	Monthly Expense		
Last Education			< Rp. 1.500.000	90	32,6%
Highschool	127	46%	Rp. 1.500.000 - 3.000.000	102	37%
Diploma (D1)	11	4,0%	Rp. 3.000.000 - Rp. 5.000.000	52	18,8%
Bachelor (S1)	123	44,6%	> Rp. 5.000.000	32	11,6%
Master (S2)	13	4,7%	Mobile Platform		
Doctorate (S3)	1	0,4%	Android	176	63,8%
Other	1	0,4%	IOS	99	35,9%
			Others	1	0,4%

Respondent Profile	Total	Percentage	Respondent Profile	Total	Percentage
Payment Option			Reason for Choosing the Apps		
Credit Card	77	27,9%	Satisfying Experience	158	57,2%
Phone Credit	90	32,6%	Affordable Price	33	12%
Convenience Store	12	4,3%	Well Designed Application	28	10,1%
E-Wallet Service (Gopay, etc)	63	22,8%	High Rating Score	2	0,7%
Others	34	12,3%	No Other Free Apps Alternative	20	7,2%

Experience in Trying the Free Version				A lot of people use this apps	18	6,5%
Yes	243	88%		Other	17	6,2%
No	33	12%		Apps Categories		
Apps Categories by usage				Games	46	17%
Entertainment	174	65%		Subscription	169	63%
Productivity, Utility, Other	93	35%		Non-Subscription	52	20%

3.3 Hypothesis analysis & testing

The analysis and hypothesis testing is intended to find the effect or significance of the independent variable to the dependent variable with the use of AMOS 24 software. This research use a one-tailed test as the condition of significance to be fulfilled, the t-value of each hypothesis need to exceed the minimum of ≥ 1.645 (and ≤ -1.645 to find negative effect) for the research to accept the hypothesis. The main measurement requirement for the hypothesis to be accepted is when the C.R or t-value fulfils the required amount. The standardized loading factor show the amount of impact the connection have, while the P-value act as the complementary value to the t-values.

Table 3. Hypothesis analysis result

Hypothesis	Hypothesis	SLF	C.R. (t-values)	P	Conclusion
H1a	Confirmation will positively affect user performance value	0.93	11,096	<0,001	Accepted
H1b	Confirmation will positively affect user value-for-money value	0.60	8,108	<0,001	Accepted
H1c	Confirmation will positively affect user emotional value	0.80	9,850	<0,001	Accepted
H1d	Confirmation will positively affect user social value	0.23	3,413	<0,001	Accepted
H2	Confirmation have a positive effect towards user satisfaction	0.65	2,054	0,040	Accepted
H3	Satisfaction have a positive effect towards user purchase intention	0.73	3,090	0,002	Accepted
H4a	Performance value have a positive impact towards user satisfaction	-0.20	-0,771	0,441	Rejected
H4b	Value-for-money have a positive impact towards user satisfaction	0.11	2,079	0,038	Accepted
H4c	Emotional value have a positive impact towards user satisfaction	0.43	4,648	<0,001	Accepted
H4d	Social value have a positive impact towards user satisfaction	0.07	1,855	0,064	Accepted
H5a	Performance value have a positive impact towards user purchase intention	-0.23	-1,795	0,073	Rejected
H5b	Value-for-money have a positive impact towards user purchase intention	0.18	2,081	0,037	Accepted
H5c	Emotional value have a positive impact towards user purchase intention	-0.35	-1,931	0,053	Rejected
H5d	Social value have a positive impact towards user purchase intention	0.06	1,003	0,316	Rejected
H6	Apps positive rating have a positive impact towards user intention to purchase	0.15	2,494	0,013	Accepted
H7	Free alternative to paid apps will negatively affect user intention to purchase	-0.17	-2,789	0,005	Accepted
H8	Habit will positively affect user intention to purchase	0.71	5,840	<0,001	Accepted

3.4 Discussion & managerial implications

The Hypothesis 1a to 1d (H1a – H1d) that is accepted suggest a positive effect that comes from confirmation variable or user initial expectation to each of the perceived value multi-dimension variables. It is then known that if there is a change in confirmation, the perceived value of user to a respective mobile apps will also change. It complements the finding made by Hsu & Lin (2015). For a more recent research it is supported by the finding that find that confirmation actually have a positive impact toward individual's perceived usefulness which is closely similar with perceived value, and in addition it also positively affect perceived ease of use and perceived enjoyment (Gupta et al., 2020; Park, 2020). Theoretically, this prove that user's will change the value they gain by using the apps if the mobile apps either fulfilled an extend of their expectation or not fulfil it at all. While practically or the managerial implication on this is that the mobile apps developer or publisher should understand the importance of fulfilling user expectation of the apps and create consistency between user expectation and the apps actual experience.

The hypothesis 2 can be accepted because the result shown supported the conclusion. That means a positive change in user confirmation will also lead to a positive change in user satisfaction. This result is supported by Hsu & Lin finding that also conclude the same result. For a more recent research, it is also supported by various research with similar model which is expectation-confirmation theory, that find that confirmation have similar result, which is a positive effect toward user satisfaction (Gupta et al., 2020; Huang, 2019). While for theoretical and practical implication is similar with the previous hypothesis. As it prove that user will enjoy and satisfied with the products if their expectation is fulfilled, and the mobile apps developer or publisher should create consistency between expectation and actual experience.

The result or data achieved for hypothesis 3 analysis support the hypothesis which the research accepted it. Theoretically, this prove that the positive change in user satisfaction will lead to a positive increase in user intention to purchase. This result contradicts the finding by Hsu & Lin (2015) for the general population, while for the same type of individual/demographic as this research, have the same conclusion. There is a more recent research that support this research finding with similar context like mobile communication applications in one of the research, also find that the user satisfaction have a positive effect toward user continuance usage, that have the same definition as this research intention to purchase (Ashfaq et al., 2020; Huang, 2019; Park, 2020; W. T. Wang et al., 2019). The practical implications is that developer or publisher should do whatever it takes for the mobile apps to increase user satisfaction.

The research rejected the hypothesis 4a, therefore theoretically, if there is a change in the user performance value perceived from the mobile apps usage, it will not change the user satisfaction. This finding actually supported by Hsu & Lin (2015) as their research also found similar result. While for other recent research, Ashfaq et al. (2020) that research about chatbot, found that perceived ease of use, which is a closely similar variable with performance value, did not have a positive impact toward user satisfaction. One suggestion from the result, it is becoming more required for the products to be perfectly functional to the customer, therefore it is becoming a basic requirement rather than a factor to increase purchase intention.

The research accepts the hypothesis 4b, 4c, and 4d. which suggest the positive effect from value-for-money value, emotional value, and social value to be present and affect the user satisfaction in a positive way. With that in mind, theoretically, if there is a positive change in either value-for-money value, emotional value, or social value utility derived from the mobile apps usage, it also positively affect the user satisfaction. Hsu & Lin (2015) found that only emotional value affect user satisfaction, while this research found that emotional value is the one have the highest impact toward user satisfaction compared to the other two. Some more recent reference with research about chatbot and smart wearable devices acceptance show that user perceived usefulness and perceived enjoyment, which are two very similar variable with a closely similar indicators or items to the perceived value, have

a positive effect toward user satisfaction (Ashfaq et al., 2020; Park, 2020). For practical discussion, as the emotional value is the ones with the most impact, it is suggested for apps developer or publisher to focus on bring enjoyment to the user using the mobile apps.

As for hypothesis 5, only hypothesis 5b is accepted by the data result from the analysis. Therefore, theoretically the research can conclude that when the user perceived the mobile apps to have a high value-for-money value, the user will have a higher intention to purchase the mobile apps as it affect positively. The research conclusion seems to be similar with Hsu & Lin (2015) and Turel et al. (2010) that find value-for-money value have a positive impact toward user purchase or continuance intention. Therefore, practical implications of this is that the developer or publisher should create an effective trade off that maximize the value that the mobile apps bring, while also minimize the purchase price. The objective is to create an image that the benefit the user gain will be comparable or higher than the cost needed.

The research rejected the hypothesis 5a, hypothesis 5c, and hypothesis 5d is rejected, as the analysis result given from the analysis did not support the hypothesis. Therefore, theoretically even either performance value, emotional value, or social value have an increase in value, it does not positively impact the user intention to purchase. For emotional value and social value, the result is supported by a finding from Han et al. (2017) explain that the non-functional value which include emotional value and social value did not have a direct influence toward user adoption intention. Although it contradicts with various research like Ashfaq et al. (2020) that found that perceived ease of use, perceived usefulness, and perceived enjoyment have positive effect toward user intention to purchase. Practically, developer or publisher could not put a priority in improving the value derived for these three variables, if the objective is to increase user intention to purchase the mobile apps.

The research accepted the hypothesis 6, that find the positive influence from the apps rating to user intention to purchase the mobile apps. That means that theoretically, a positive increase in the mobile apps products will also increase the user intention to purchase the said mobile apps. This finding support the Hsu & Lin (2015) finding that also find the positive influence from apps rating to customer intention to purchase. A more recent finding also suggest the connection although not directly, online rating positively moderate relationship between e-satisfaction with user continuance intention (Tran et al., 2019). The practical implication is that developer or publisher of the mobile apps should create a way to encourage user to provide a positive review or rating for the mobile apps. One of the way is to giving rewards for user that would provide a rating for the apps.

The data result from the hypothesis analysis supported hypothesis 7. Therefore, theoretically if there are free alternative to the respective mobile apps, the higher the amount of the free apps and the higher the free apps able to fulfils the customer need, the lower the user intention to purchase paid mobile apps is. This finding is supported by Hsu & Lin (2015) which found the same connection. While it can also refer to Campo et al. (2000) that find customer are prone to switch products if the other products is an acceptable alternative. A more recent research is from Y. Y. Wang et al. (2018) that find a negative moderating effect for a positive relationship between perceived value and customer intention to purchase. Practical or managerial implication that relate to this finding is that the mobile apps developer or publisher should made that their products or mobile apps more stand out, create a unique feature that is hard to find in other mobile apps.

The research accepted the hypothesis 8 as refer to the result from the hypothesis analysis. This mean that theoretically, the increase of user's habit that revolve around the mobile apps will also increase the user intention to purchase the said mobile apps. This finding is supported by a recent research about IT continuance usage that also find that habitual behaviour positively affect continuance usage of a customer (Dai et al., 2020). For practical or managerial implication, the mobile apps' developer or publisher should strive to fulfils the needs or solve the problem the customer may have, this in turn create a dependencies from the customer toward the mobile apps which make habitual behaviour relate to the said mobile apps.

4. Conclusion

According to the research result and the data analysis which has been done, the following is the concise conclusion based on the research question and from the test result. First, from performance, value-for-money, emotional, and social value that is included in the multi-dimension variable of perceived value, only value-for-money value is found to have a positive effect toward user purchase intention of paid apps. Therefore, it indicates that if the user perceived value-for-money value increase it leads to the increase of the user intention to purchase the paid apps.

Second, from performance, value-for-money, emotional, and social value that is included in the multi-dimension variable of perceived value, there are three (3) value variable that is found to have positively affect user satisfaction, which is value-for-money, emotional, and social value. Therefore, it indicates that if there is an increase of value in those three variables, it will lead to an increase in user satisfaction. Third, from the research, it is found that the Confirmation variable or the user initial expectation of the apps have a positive effect on all variables included in the multi-dimension perceived value and user satisfaction. Therefore, it indicates that the more the user feels that their initial expectation is fulfilled or confirm, the more the user feels satisfied, and the more the perceived value the user perceived increases.

All the extended ECM variables, which are apps rating, the availability of free, and the user's habit are found to be significant to user intention to purchase. The variables apps rating and habit are found to have a positive effect towards user intention to purchase. This indicates that the better apps rating leads to an increase in user intention to purchase, similar effect with habit with the more it increases, it will also increase the user intention to purchase. On the other hand, the free alternative to the paid apps is found to have a negative effect toward user intention to purchase. Therefore, it indicates that if the apps have a free alternative and the alternative provides a comparable value to the paid apps, it will decrease the user intention to purchase the paid apps.

4.1 Limitation and future research suggestion

The research conducted also have some limitation to keep in mind. There are 4 limitation that the research might have and should be addressed or keep in mind. The first one is the perceived value variables is a multi-dimension variable and has a broad meaning based on context. therefore, some indicator might not be a good fit in representing the respective variables. The second limitation is there might be a chance that there are other similar variables that can be categorize as extended variables that may have an effect toward user purchase intention in which the research did not provide or put. The third one is that there is a lack of research toward app rating, although there is various research about user review that is very closely similar, but it is difficult to provide a good representative indicator with the current research available for apps rating. The intention to purchase variable might not entirely suitable for analysing a certain type of mobile apps, for example mobile apps with different kind of monetization, like subscription might have different understanding from other apps with different monetization method.

The following are some of the core suggestions that further research could do that might explore more of the topic involved that might improve the (1) give more research toward intention to purchase variable and habit to become more reliable, while it is also suggested to look into whether the extended variables might have an effect with one or two dimensions of perceived value for the future research. (2) Utilize control variables like gender, to understand the difference that may present with male or female gender in the context. While also mind the respondent balance, to avoid bias that may present in the research. (3) It is suggested to conduct the research in different environment or region that may present different result for the research, it is also suggested to conducted the research

with the same model but with different context. (4) The further research might focus on either different categories in term of usage or different monetization method.

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References

- Albarracin, D., & S. Wyer Jr., R. (2000). The Cognitive Impact of Past Behavior: Influences on Beliefs, Attitudes, and Future Behavioral Decisions Dolores. *Department of Psychology, Univerty of Florida*, 79(1), 5–22. <https://doi.org/10.1007/128>
- Anderson, R. E., & Srinivasan, S. S. (2003). E-Satisfaction and E-Loyalty: A Contingency Framework. *Psychology and Marketing*, 20(2), 123-138. <https://doi.org/10.1002/mar.10063>
- Ashfaq, M., Yun, J., Yu, S., Maria, S., & Loureiro, C. (2020). Chatbot: Modeling the determinants of users' satisfaction and continuance intention of AI-powered service agents. *Telematics and Informatics*, 53. <https://doi.org/10.1016/j.tele.2020.101473>
- Bhattacharjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. *MIS Quarterly: Management Information Systems*. <https://doi.org/10.2307/3250921>
- Campo, K., Gijbrecchts, E., & Nisol, P. (2000). Towards understanding consumer response to stock-outs. *Journal of Retailing*, 76(2), 219–242. [https://doi.org/10.1016/S0022-4359\(00\)00026-9](https://doi.org/10.1016/S0022-4359(00)00026-9)
- Chen, Y., & Xie, J. (2008). Online consumer review: Word-of-mouth as a new element of marketing communication mix. *Management Science*. <https://doi.org/10.1287/mnsc.1070.0810>

- Chia, P. H., Yamamoto, Y., & Asokan, N. (2012). Is this app safe? A large scale study on application permissions and risk signals. *WWW'12 - Proceedings of the 21st Annual Conference on World Wide Web*. <https://doi.org/10.1145/2187836.2187879>
- Chiu, C. M., Chang, C. C., Cheng, H. L., & Fang, Y. H. (2009). Determinants of customer repurchase intention in online shopping. *Online Information Review*. <https://doi.org/10.1108/14684520910985710>
- Chiu, C. M., Hsu, M. H., Lai, H., & Chang, C. M. (2012). Re-examining the influence of trust on online repeat purchase intention: The moderating role of habit and its antecedents. *Decision Support Systems*, 53(4), 835–845. <https://doi.org/10.1016/j.dss.2012.05.021>
- Clemons, E. K., Gao, G., & Hitt, L. M. (2006). When online reviews meet hyperdifferentiation: A study of the craft beer industry. *In Journal of Management Information Systems*. <https://doi.org/10.2753/MIS0742-1222230207>
- COMSCORE, Lella, A., Lipsman, A., Chen, V., Pedotto, K., & McElyea, J. P. (2017). The 2017 U.S. Mobile App Report - comScore, Inc. *In Comscore*.
- Dai, H. M., Teo, T., & Rappa, N. A. (2020). Understanding continuance intention among MOOC participants: The role of habit and MOOC performance. *Computers in Human Behavior*, 112(May), 106455. <https://doi.org/10.1016/j.chb.2020.106455>
- Finkelstein, A., Harman, M., Jia, Y., Martin, W., Sarro, F., & Zhang, Y. (2017). Investigating the relationship between price, rating, and popularity in the Blackberry World App Store. *Information and Software Technology*, 87, 119–139. <https://doi.org/10.1016/j.infsof.2017.03.002>
- Franklin, K. (2013). *The Best Predictor of Future Behavior Is ... Past Behavior*. Psychology Today. <https://www.psychologytoday.com/us/blog/witness/201301/the-best-predictor-future-behavior-is-past-behavior>
- Gupta, A., Yousaf, A., & Mishra, A. (2020). How pre-adoption expectancies shape post-adoption continuance intentions: An extended expectation-confirmation model. *International Journal of Information Management*, 52(February), 102094. <https://doi.org/10.1016/j.ijinfomgt.2020.102094>
- Hair, J. F., Anderson, R. E., Tatham, R. L. and, & Black, W. C. (2010). *Multivariate Data Analysis: A Global Perspective (7th Edition)*. In Pearson Prentice Hall, New Jersey.
- Han, L., Wang, S., Zhao, D., & Li, J. (2017). The intention to adopt electric vehicles: Driven by functional and non-functional values. *Transportation Research Part A: Policy and Practice*, 103, 185–197. <https://doi.org/10.1016/j.tra.2017.05.033>
- Hsu, C. L., & Lin, J. C. C. (2015). What drives purchase intention for paid mobile apps?-An expectation confirmation model with perceived value. *Electronic Commerce Research and Applications*. <https://doi.org/10.1016/j.eierap.2014.11.003>
- Hsu, C. L., Lin, J. C. C., & Chiang, H. Sen. (2013). The effects of blogger recommendations on customers' online shopping intentions. *Internet Research*, 23(1), 69–88. <https://doi.org/10.1108/10662241311295782>
- Huang, Y. M. (2019). Examining students' continued use of desktop services: Perspectives from expectation-confirmation and social influence. *Computers in Human Behavior*, 96(January), 23–31. <https://doi.org/10.1016/j.chb.2019.02.010>
- Jiang, J. J., & Klein, G. (2009). *Expectation-confirmation theory: Capitalizing on descriptive power*. *Handbook of Research on Contemporary Theoretical Models in Information Systems*, 384–401. <https://doi.org/10.4018/978-1-60566-659-4.ch022>
- Jones, M. A., Mothersbaugh, D. L., & Beatty, S. E. (2000). Switching barriers and repurchase intentions in services. *Journal of Retailing*, 76(2), 259–274. [https://doi.org/10.1016/S0022-4359\(00\)00024-5](https://doi.org/10.1016/S0022-4359(00)00024-5)
- Karjaluoto, H., Shaikh, A. A., Saarijärvi, H., & Saraniemi, S. (2019). How perceived value drives the use of mobile financial services apps. *International Journal of Information Management*, 47(September 2017), 252–261. <https://doi.org/10.1016/j.ijinfomgt.2018.08.014>

- Kim, H. W., Chan, H. C., & Gupta, S. (2007). Value-based Adoption of Mobile Internet: An empirical investigation. *Decision Support Systems*. <https://doi.org/10.1016/j.dss.2005.05.009>
- Lin, H. H., & Wang, Y. S. (2006). An examination of the determinants of customer loyalty in mobile commerce contexts. *Information and Management*, 43(3), 271–282. <https://doi.org/10.1016/j.im.2005.08.001>
- Park, E. (2020). User acceptance of smart wearable devices: An expectation-confirmation model approach. *Telematics and Informatics*, 47(December 2019). <https://doi.org/10.1016/j.tele.2019.101318>
- Statista. (2018). Number of mobile phone users worldwide from 2015 to 2020 (in billions). Number of Mobile Phone Users Worldwide from 2015 to 2020 (in Billions).
- Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of Retailing*. [https://doi.org/10.1016/S0022-4359\(01\)00041-0](https://doi.org/10.1016/S0022-4359(01)00041-0)
- Sydow, L. (2019). The State of Mobile in 2019 – The Most Important Trends to Know. App Annie.
- Tang, J., Zhang, B., & Akram, U. (2019). User willingness to purchase applications on mobile intelligent devices: evidence from app store. *Asia Pacific Journal of Marketing and Logistics*. <https://doi.org/10.1108/APJML-06-2019-0411>
- Thong, J. Y. L., Hong, S. J., & Tam, K. Y. (2006). The effects of post-adoption beliefs on the expectation-confirmation model for information technology continuance. *International Journal of Human Computer Studies*, 64(9), 799–810. <https://doi.org/10.1016/j.ijhcs.2006.05.001>
- Tran, L. T. T., Pham, L. M. T., & Le, L. T. (2019). E-satisfaction and continuance intention: The moderator role of online ratings. *International Journal of Hospitality Management*, 77(July 2018), 311–322. <https://doi.org/10.1016/j.ijhm.2018.07.011>
- Turel, O., Serenko, A., & Bontis, N. (2010). User acceptance of hedonic digital artifacts: A theory of consumption values perspective. *Information and Management*, 47(1), 53–59. <https://doi.org/10.1016/j.im.2009.10.002>
- Verplanken, B., & Aarts, H. (1999). Habit, Attitude, and Planned Behaviour: Is Habit an Empty Construct or an Interesting Case of Goal-directed Automaticity?. *European Review of Social Psychology*. <https://doi.org/10.1080/14792779943000035>
- Wang, W. T., Ou, W. M., & Chen, W. Y. (2019). The impact of inertia and user satisfaction on the continuance intentions to use mobile communication applications: A mobile service quality perspective. *International Journal of Information Management*, 44, 178–193. <https://doi.org/10.1016/j.ijinfomgt.2018.10.011>
- Wang, Y., Tang, T.-I., & Tang, J. E. (2001). an Instrument for Measuring Customer Satisfaction Toward Web Sites That Market Digital Products and Services. *Journal of Electronic Commerce Research*.
- Wang, Y. Y., Lin, H. H., Wang, Y. S., Shih, Y. W., & Wang, S. T. (2018). What drives users' intentions to purchase a GPS Navigation app: The moderating role of perceived availability of free substitutes. *Internet Research*, 28(1), 251–274. <https://doi.org/10.1108/IntR-11-2016-0348>
- Xue, F., & Zhou, P. (2011). The effects of product involvement and prior experience on chinese consumers' responses to online word of mouth. *Journal of International Consumer Marketing*. <https://doi.org/10.1080/08961530.2011.524576>
- Yang, Z., & Peterson, R. T. (2004). Customer perceived value, satisfaction, and loyalty: The role of switching costs. *Psychology and Marketing*. <https://doi.org/10.1002/mar.20030>
- Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing*. <https://doi.org/10.2307/1251446>

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