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THE EFFECT OF PERCEIVED VALUE AND MOBILE GAME LOYALTY ON IN-APP PURCHASE INTENTION IN MOBILE GAME IN INDONESIA (CASE STUDY: MOBILE LEGEND AND LOVE NIKKI)

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ABSTRACT

Manuscript type: *Empirical Research*

Research Aims: *Investigate the effect of perceived value and mobile game loyalty on in-app purchase intention using case study male dominated game and female dominated game*

Design/methodology/approach: *Conslusive descriptive research using Structural Equation Modelling Two-way approach*

Research Findings: *It is found that on male dominated game and female dominated game economic value, social value, and game loyalty significantly influence in-app purchase intention. While on male dominated game loyalty is influenced by emotional values, social values and economic values. On the other hand, loyalty in female dominated game is influenced by emotional value, quality value, social value, and economic*

Theoretical Contribution/Originality: *Provide insight regarding value that drive in-app purchase intention on freemium game in gender domination context*

Practitioner/Policy Implication: *Provide insight to improve freemium game and contribute to give understanding on consumer behaviour primary in gaming context*

Research limitation/Implications: *limited to particular game type (mobile game) and does not involved perceived risk in research framework*

Keywords: Perceived value, game loyalty, in-app purchase intention, mobile game, freemium game

INTRODUCTION

The ever-growing smartphone innovation and technology provides many benefits for businesses, especially for the development of the mobile game business (Kim & Lee, 2017). Mobile game is fast growing business and predicted to generate more than US$100 Billion revenue in 2021 (Kooistra, 2018). Mobile game represent 51% of global digital game market share and predicted to have CAGR 6,1% from year to year (Kooistra, 2018). The biggest contributor for mobile game revenue in global market is China with revenue US$ 21,444 juta in 2019 (Gough, 2020). Furthermore, Southeast Asia is the fastest growing market for mobile games with total revenue of $ 2.6 billion and year-on-year revenue growth of 17.4% in 2019. The rapid revenue growth in the mobile game market illustrates that the market for mobile games in Southeast Asia is a potential market for the mobile game business (Fernandes, 2019).

Behind the rapid growth of the mobile game market, mobile game developers are using monetization strategies to generate revenue from mobile game. As the mobile game market continues to grow with good prospects, mobile game monetization is also growing with promising prospects. Mobile game monetization is expected to grow 97% from 2014-2019. Furthermore, in-app purchase or freemium strategy is a strategy used by most mobile game developers to increase revenue (Irpan, Gohil, Rull, Russell, & Shetty, 2020). However, statistically speaking only 2.2% of the player spend money in the game (Zins, 2018).This issue becomes a serious matter for game developers who pursue for profit. Thus, research should be conducted to investigate what are the factors that encourage gamers to make a purchase in game

Many studies have examined mobile games from various aspects such as factors that influence the adoption of mobile games, factors that influence the loyalty of mobile game players, factors that cause addiction to playing games, and the relationship between gaming experience and in-game purchases. However, there are still few studies that examine the relationship between perceived value, game player loyalty, and in-app purchase intention simultaneously even though these three variables are important in predicting gamers purchase behavior (Hsiao & Chen, 2016). Proportion of gamers based on gender are almost equal, where 54% of total gamers are male and 46% of total gamers are female (Newzoo, 2019). In other sides, previous research found that there were differences in gaming behavior between male and female. It is observed that based on genre, experience, and money spent male and female gamers are different. Male gamers spend more money and time for gaming than female gamer and male gamer more experienced in playing game. In addition, based on the game genre, male gamers like to play games with the action and sport while female gamers like to play games with the puzzle, adventure and simulation game genres (Gómez-Gonzalvo, Molina, & Devís-Devís, 2020). It indicates that game behavior based on gender may result in difference purchase behavior and difference value that drive those purchase behaviors in game. So, in this study, researchers will observe the relationship between perceived value, gamer loyalty, in-app purchase intention in the context of gender by using Hsiao & Chen conceptual model (2016). This study also will use a case study of male dominated game Mobile Legend and female dominated game Love Nikki as case study in Indonesia (GooglePlay, 2020; SensorTower, 2020).

LITERATURE REVIEW

Perceived Value

Perceived value can be defined as a tradeoff between the benefits felt by consumers and the costs felt by consumers for a product (Lovelock & Wirtz, 2011; Oliver & Swan, 1989)including level of service provision, if any, available for children with (C. Sweeney & Soutar (2001) developed a model called PERVAL to assess consumers' perceived value towards a brand (Sweeney & Soutar, 2001). PERVAL is used to measure the value perceived by consumers based on four value dimensions consisting of four dimensions:

Emotional value

Emotional value by definition is a value that comes from feeling or affective state, which is generated by mobile game (Lu & Hsiao, 2010). The affective state of this research is represented by perceived playfulness, which is refer to excitement perceived by gamer in playing mobile game or in interacting with other gamer through the mobile game (Hsiao & Chen, 2016)little is known about what mo-

tivates game players to make such purchases. The purpose of this paper is to build a research model based on the loyalty literature and studies of value theory to identify the antecedents of in-app purchase intention in the context of mobile games. The proposed model was empirically evaluated using a web survey of 3309 mobile game players: 813 nonpaying players and 2496 paying players. Structural equation modeling was used to assess the research model. The results reveal that loyalty to the mobile game has significant influence on a player's intention to make an in-app purchase. The perceived values of the game (playfulness, connectedness, access flexibility, and reward. Previous research by Hsiao & Chen (2016) discover that perceived playfulness is the main reason why gamer loyal to play the game. Thus, we propose the following hypothesis.

H1. Perceived playfulness positively influence loyalty to the mobile game

H2. Perceived playfulness positively in-app purchase intention

Functional Value

Performance/quality value refers to value derived from perceived quality and expected performance of the mobile game (Lu & Hsiao, 2010). In this research performance/quality value is represented by perceived access flexibility which refers to feature on mobile game that enable player to play at any time and control the duration to play the mobile game (Wei & Lu, 2014). Moreover, previous research by Hsiao & Chen (2016) found that perceived access flexibility as an important factor that influence mobile game loyalty and. Therefore, enhance the performance and quality of the game is very important in order to increase game loyalty and game purchase intention. Thus, we propose the following hypothesis:

H3. Perceived access flexibility positively influence loyalty to the mobile game

H4. Perceived access flexibility positively influences in-app purchase intention

Social Value

Social value by definition is the value derived from a mobile game services in increasing one's social self-concept (Lu & Hsiao, 2010). In this study researcher use perceived connectedness as social value that player feels while playing mobile game. Perceived connectedness can be defined as individual's sense of being connected to others through playing mobile game (Zhao & Lu, 2012). Moreover, gamers who develop positive social relationship are willing to stay in the game and even make purchase in game (Hsiao & Chen, 2016)little is known about what motivates game players to make such purchases. The purpose of this paper is to build a research model based on the loyalty literature and studies of value theory to identify the antecedents of in-app purchase intention in the context of mobile games. The proposed model was empirically evaluated using a web survey of 3309 mobile game players: 813 nonpaying players and 2496 paying players. Structural equation modeling was used to assess the research model. The results reveal that loyalty to the mobile game has significant influence on a player's intention to make an in-app purchase. The perceived values of the game (playfulness, connectedness, access flexibility, and reward. Thus, we propose the following hypothesis.

H5. Perceived connectedness positively influence loyalty to the mobile game

H6. Perceived connectedness positively influences in-app purchase intention

Economic Value

Price refer to a value that derived from a mobile game because of a reduction on its perceived cost (Lu & Hsiao, 2010). This research use perceived good price as a mean to measure consumer sacrifice to possess product/services. Perceived good price can be defined as the degree consumer believe that the monetary cost they sacrifice is worth for mobile games service they obtain (Chu & Lu, 2007). Furthermore, previous research found that price perceived by consumer in online game in fact cultivate gamers loyalty toward the game (Liao, Tseng, Cheng, & Teng, 2020). Moreover, Wei & Lu (2014) found that interaction with other players or connectedness enhance perceived good price. Previous research also found that perceived good price also contribute in increasing gamer intention to make in-game purchase (Lu & Hsiao, 2010). Thus, the following hypothesis are proposed:

H7. Perceived good price positively influences loyalty to the mobile game.

H8. Perceived good price positively influences in-app purchase intention

H9. Perceived connectedness positively influences consumer's perception of a good price.

In this study reward also considered as important value for the price. Perceived reward refer to benefit that are acquired or felt while playing mobile game (Hsiao & Chen, 2016). Previous research revealed that acquired reward from product/services make consumer more engage to the product/services and reward also the reason why gamer keep playing the game (Hsiao & Chen, 2016; Rehnen, Bartsch, Kull, & Meyer, 2017). Moreover, previous research by Hsiao & Chen (2016) also reveal that reward is important determinant for player's purchase intention. Thus, we propose the following hypothesis.

H10. Perceived reward positively influences consumer's perception of a good price.

H11. Perceived reward positively influences loyalty to the mobile game.

H12. Perceived reward positively influences in-app purchase intention

Mobile Game Loyalty

Mobile game loyalty can be defined as the level where game players have an attitude of liking mobile games or have a preference for a mobile game that shows their intention to continue playing the mobile game (Lu & Wang, 2008). Consumer loyalty can be defined as a commitment to buy products or services consistently in the future, so that there will be repeat purchases for certain products, even though consumers face various marketing situations that can change their purchasing behavior (Oliver, 1999). According to Oliver (1999) there are four phases of loyalty. The first phase of loyalty is cognitive loyalty where consumers can feel that one brand can be better than other brands. The second stage of loyalty is affective loyalty, where liking for a brand has been formed. The third stage of loyalty is conative loyalty where consumers have a certain commitment to repurchase the brand. The last stage of loyalty is action loyalty where the intention previously formed in the conative loyalty stage is converted into action or product repurchase. Previous research found that loyal gamers tent to spend more money in game than a non-loyal gamer (Hsiao & Chen, 2016). Thus, we propose the following hypothesis.

H13. Mobile game loyalty positively influences in app purchase intention

RESEARCH METHOD

In this study, researchers adopted the research model of Hsiao & Chen (2016) which examined the effect of perceived value on game loyalty and in-app purchase intention. There are 13 hypotheses tested in this study and their relationship is described in Figure 1. In addition, this study uses 7 variables consisting of perceived playfulness, perceived access flexibility, perceived connectedness, perceived good price, and perceived reward, and uses 29 research indicators (Appendix A).

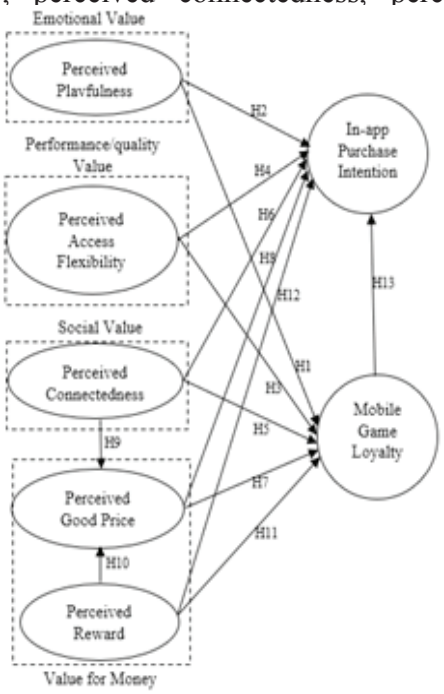

Figure 1. Research Framework

This study used a descriptive conclusive research design and using single cross sectional where the researcher plans to collect data and information from the study sample only once. Furthermore, the questionnaire in this study is self-administered and uses purposive sampling with the respondent's criteria: is a Mobile Legend and/or Love Nikki game player, aged 12 years and over, and is an Indonesian. The research questionnaire is divided into 3 parts, namely the introduction section and filter questions, respondent profiles, and core questions for research indicators and will be distributed

online. The researchers provide 3 different questioners based on game that respondent play that is Mobile Legend questioner, Love Nikki questionnaire, and Mobile Legend and Love Nikki questionnaire. The core questions on the research indicators use a Likert scale of 1-7, where a scale of 1 = strongly disagrees and 7 = strongly agrees. This study was divided into three stages, namely the wording test stage, where the researcher examined the sentence structure of the research questions. Furthermore, pretest where the researcher tests the validity and reliability of the indicators used in the study. And the main test stage where the researcher will analyze the research data using the Structured Equation Modeling two-way approach analysis technique using the Lisrel 8.8 software. Moreover, the first step in two-way approach is measurement test, where researcher will test the validity and reliability of the indicator used. Then, in the second step, researcher will conduct structural test to test the hypothesis using t-value 1.645 (one tail)

RESULT AND DISCUSSION

Pretest

After conducting the wording test and ensuring that the research questions did not have errors in sentence structure and their meanings, the researcher then conducted a pretest. Respondents in this pre-test totaled 98 respondents who had met the criteria for responding to the screening. The respondents consisted of 46 Mobile Legend game players, 46 Love Nikki game players, and 6 Mobile Legend and Love Nikki game players. Data collected from the pre-test results were processed using SPSS 23 to test the validity and reliability of the items used. The results of the validity and reliability test showed that all research indicators had a KMO value ≥ 0.50, matrix components ≥ 0.50 and Anti Image ≥ 0.50 so that all indicators in this study could be declared valid (Field, 2005). In addition, the indicators used in this study also meet the reliability requirements, namely having a Cronbach's Alpha value above 0.60 so (Malhotra, 2010).

Maintest

Furthermore, in the main test stage, data for the main test were collected from March 7, 2020 to April 4, 2020. The number of respondents who filled out the questionnaire was 613 respondents. Of the 613 respondents, 168 respondents were Mobile Legend game players, 351 respondents were Love Nikki game players, and 72 respondents were Mobile Legend and Love Nikki game players. Then there were 14 respondents who were not included in the respondent screening criteria and 8 respondents who did not fill out the questionnaire until the end.

For the respondent profile, most respondents for the Mobile Legend game were male, with percentage 64.58% and most respondents for the Love Nikki game were women with percentage of 95.74% in the gender category. As for the age category in the Mobile Legend game, the majority of respondents were 12-22 years old with a percentage of 62.92% and for the Love Nikki game the majority of respondents were also the age group with a range of 12-22 years with a percentage of 49.17%. In the Mobile Legend and Love Nikki games, it was found that most respondents were students with a percentage of 58.33% for the Mobile Legend game and 47.28% for the Love Nikki game. For the income category in in both game it was found that the majority of respondents for both games had an income of less than IDR 1,000,000 with a percentage of 52.92% for the Mobile Legend game and for the Love Nikki game it had a percentage of 59.81%. Furthermore, most respondents in both games have experience playing with a span of 1-3 years with the percentage for Mobile Legend is 53.33% and for the Love Nikki game is 57.45%. For the in-game purchase category, most respondents have made purchases in games both in the Mobile Legend game and the Love Nikki game with a percentage of 76.67% in the Mobile Legend game and 88.65% in the Love Nikki game.

At the main test stage, the researcher used the Structured equation modeling technique two way-approach. In the first approach, the researcher conducted a measurement test to check the validity and reliability of the indicators before carrying out the structural test to test the research hypothesis. In the structural test, it was found that all the research indicators met the validity requirements where the value of Standardized Loading Factor or SLF ≥ 0.5 and t-value ≥ 1.96. Furthermore, the variable is said to be reliable if the value of construct reliability (CR) is ≥ 0.7 and the value of variance extracted (VE) is ≥ 0.5 (Wijanto, 2015). From the results of this validity and reliability test, it can be concluded that all items meet the valid-

ity and reliability requirements except for the ACC variable which has a VE value of 48% on the reliability test in the context of Mobile Legend game research and has a VE = 34% value on the reliability test in the context of the game Love. Nikki. However, based on Fornell and Larcker (1981), the CR value alone is sufficient to determine the reliability of an indicator (Fornell & Larcker, 1981). So it can be concluded that all indicators in the main test in this study are valid and reliable.

Furthermore, to test the suitability of the model the researcher used 11 model fit indicators and in the Mobile Legend game it was found that the p-value (≥0.05) = 0.00019; RMSEA (≤0.08) = 0.065; NNFI (≥0.90) = 0.98; NFI (≥0.90) = 0.96; IFI (≥0.90) = 0.98; CFI (≥0.90) = 0.98; RFI (≥0.90) = 0.95; SRMR (≤0.05) = 0.061; GFI (≥0.90) = 0.83; AGFI (≥0.90) = 0.79; Critical "N" (> 200) = 140.07. Meanwhile, in the Love Nikki game it was found that the p-value (≥0.05) = 0.00; RMSEA (≤0.08) = 0.069; NNFI (≥0.90) = 0.97; NFI (≥0.90) = 0.96; IFI (≥0.90) = 0.97; CFI (≥0.90) = 0.97; RFI (≥0.90) = 0.95; SRMR (≤0.05) = 0.062; GFI (≥0.90) = 0.85; AGFI (≥0.90) = 0.82; Critical "N" (> 200) = 171.86. The result of the structural test is shown in the Figure. 2 and Figure.3. The hypothesis is accepted if the t-value of the structural model is ≥ 1.65 (one tail).

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Discussion

In the perspective of perceived value in exception of perceived access flexibility, all factor significantly influences game loyalty in the

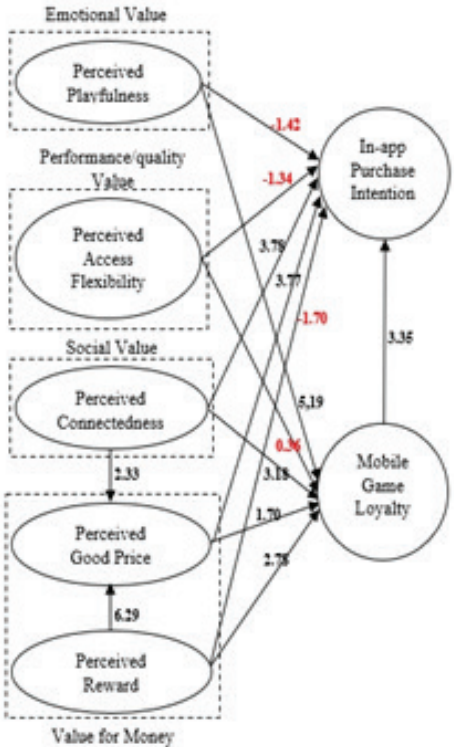

Figure 2. T-value Structural Model for Mobile Legend

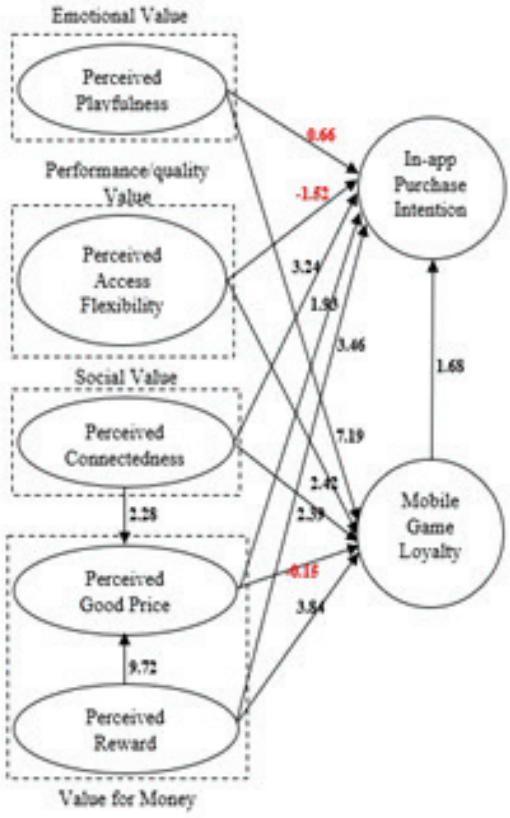

Figure 3. T-value Structural Model for Love Nikki

case of Mobile Legend. From the result playfulness of the game is the strongest factor that cause player loyal to the game. This means that the more gamers feel the game excite them the more they willing to play the game continuously. Moreover, past study by Hsiao & Chen (2016) also found that playfulness as the strongest factor to influence mobile game loyalty. Perceived connectedness found to be the second strongest indicator that influence game loyalty. It means that the more players feel connected to others while playing the game the more they loyal to play the game (Ghazali et al., 2019). In the Love Nikki side, it is found that all perceived value dimension significantly influences mobile game loyalty except for perceived good price. In the context of Love Nikki, the more the game give player excitement, connection to other, flexible access and reward the more likely player will continuously play the game. This finding in line with previous study that examine the effect of perceived value toward loyalty (Ghazali et al., 2019; Hamari, Hanner, & Koivisto, 2020). Moreover, in the case of Mobile Legend perceived connectedness and perceived reward were found to have positive significant influence on in-app purchase intention. In the context of Love Nikki, perceived connectedness, perceived reward, and perceived good price were found to have significance positive influence on in-app purchase intention. It can be concluded that economical value and social value is the main factor that influence purchase for both games. Moreover, in both game mobile game loyalty also found to have significant influence on in-app purchase intention. This finding in line with Hasio & Chen (2016) finding where it is found if player continuously play the game it will increase the in-game purchase.

CONCLUSION

Conclusion

This research aims to investigate effect of perceived value and game loyalty toward in-app purchase intention using gender dominated game as case study. From this research it can be concluded that in the context of perceived value in games dominated by male players, the emotional values, social values and economic values felt in games positively affect the loyalty of game players. While in the game with female dominated value positively affect the loyalty of gamers. In both game economic value, social value, and game loyalty is the factor that significantly influence in-app purchase intention. So that to increase in-game purchases, game developers can increase the economic and social value of the game and increase the loyalty of game players. So, in conclusion, it is observed that economic value and social value is the driver for male and female in making in-app purchase. However, the driver that make gamer loyal is difference between male gamers and female gamers.

Implication

As stated in the introduction, many game developers facing difficulties to increase in-game purchase. In this research, it is found that in-app purchase can be increased by increasing economic and social value of the game. Game developer may provide improvement in their game apps that enhance interaction between players. Moreover, pricing strategy can be applied so as gamer can perceived that the game enjoyed is equivalent to the sacrifice incurred.

In other side for academic research, this research contributes to provide insight regarding the relationship of perceived value, game loyalty, and purchase intention, where those variables are crucial to predict consumer behavior in game context. Furthermore, this study also contributes to consumer behavior in a way it involved gender in analyzing gaming behavior, which has previously been explained that gender differences can cause differences in purchasing behavior.

Limitation

This research is limited in terms of the variables used, where in this study is mainly involved perceived benefit in analyzing consumer behavior. Future research may include perceived risk, since perceived risk is crucial factor in measuring total benefit given by the game. Moreover, future research may include satisfaction, where consumer satisfaction is important stage before consumer become loyal to certain product/services. This study is limited in terms of game type which is mobile game. Future research may use other types of game such as PC game or console game to provide a broader insight regarding gaming behavior.

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APPENDIX

Appendix A: Indicators for Mobile Legend Questionnaire

Perceived Playfulness
1. PLA1: I think playing Mobile Legend is interesting
2. PLA2: I think playing Mobile Legend is enjoyable
3. PLA3 : I think playing Mobile Legend is exciting
4. PLA4: I think playing Mobile Legend is fun
Perceived Access Flexibility
1. ACC1: I have control toward time in playing Mobile Legend
2. ACC2: I can play Mobile Legend anytime
3. ACC3: I can play and stop playing Mobile Legend anytime
Perceived Connectedness
1. CON1: Through Mobile Legend I can share experience and emotion with other players
2. CON2: I think I obtain benefit from Mobile Legend's community
3. CON3: I think I have bond with other Mobile Legend's players
4. CON4: I think through Mobile Legend I can connect with other players
Perceived Good Price
4. PRI1: The virtual features sold in Mobile Legend fulfil my expectation
1. PRI2: The virtual features sold in Mobile Legend is suitable with the price
2. PRI3: I think virtual feature sold in Mobile Legend is economical
3. PRI4: The price of virtual features sold in Mobile Legend fulfil my expecta-tion
Perceived Reward
1. REW1: I think virtual feature sold in Mobile Legend have high cash value
2. REW2: It is very possible for me to get reward in Mobile Legen
3. REW3: I think reward offered in Mobile Legend is something I want
4. REW4: I think reward offered in Mobile Legend is varies
5. REW5: I think reward offered in Mobile Legend have reasonable value
Mobile Game Loyalty
1. LOY1: I think Mobile Legend is my first choice
2. LOY2: I will continuously play Mobile Legend
3. LOY3: I am willing to say positive things about Mobile Legend
4. LOY4: If others want to play mobile game, I will recommend Mobile Legend
5. LOY5: I am willing to encourage my friends to play Mobile Legend
In-App Purchase Intention
1. INT1: I intend to pay for Mobile Legend's virtual feature in the future
2. INT2: I predict I would pay for Mobile Legend's virtual feature in the future
3. INT3: I tend to be often purchase Mobile Legend's virtual feature in the future
4. INT4: I plan to spend more money to purchase Mobile Legend's virtual feature

Appendix B: Indicators for Love Nikki Questionnaire

Perceived Playfulness 1. PLA1: I think playing Love Nikki is interesting 2. PLA2: I think playing Love Nikki is enjoyable 3. PLA3 : I think playing Love Nikki is exciting 4. PLA4: I think playing Love Nikki is fun
Perceived Access Flexibility 1. ACC1: I have control toward time in playing Love Nikki 2. ACC2: I can play Love Nikki anytime 3. ACC3: I can play and stop playing Love Nikki anytime
Perceived Connectedness 1. CON1: Through Love Nikki I can share experience and emotion with other players 2. CON2: I think I obtain benefit from Love Nikki's community 3. CON3: I think I have bond with other Love Nikki's players 4. CON4: I think through Love Nikki I can connect with other players
Perceived Good Price 1. PRI1: The virtual features sold in Love Nikki fulfil my expectation 2. PRI2: The virtual features sold in Love Nikki is suitable with the price 3. PRI3: I think virtual feature sold in Love Nikki is economical 4. PRI4: The price of virtual features sold in Love Nikki fulfil my expectation
Perceived Reward 1. REW1: I think virtual feature sold in Love Nikki have high cash value 2. REW2: It is very possible for me to get reward in Mobile Legen 3. REW3: I think reward offered in Love Nikki is something I want 4. REW4: I think reward offered in Love Nikki is varies 5. REW5: I think reward offered in Love Nikki have reasonable value
Mobile Game Loyalty LOY1: I think Love Nikki is my first choice 2. LOY2: I will continuously play Love Nikki 3. LOY3: I am willing to say positive things about Love Nikki 4. LOY4: If others want to play mobile game, I will recommend Love Nikki 5. LOY5: I am willing to encourage my friends to play Love Nikki
In-App Purchase Intention 1. INT1: I intend to pay for Love Nikki's virtual feature in the future 2. INT2: I predict I would pay for Love Nikki's virtual feature in the future 3. INT3: I tend to be often purchase Love Nikki's virtual feature in the future 4. INT4: I plan to spend more money to purchase Love Nikki's virtual feature