

**AN INVESTIGATION OF FACTORS INFLUENCING USER
LOYALTY AND USER INTENTION TO PLAY MOBILE GAMES**



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**AN INVESTIGATION OF FACTORS INFLUENCING USER
LOYALTY AND USER INTENTION TO PLAY MOBILE GAMES**

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ABSTRACT

Looking into the mobile gaming statistics globally, regionally and within the country of Thailand, it is undeniable that mobile gaming market is very attractive. However in reality it is more difficult than it seems, where in Thailand there is a very high competition, resulting in deaths of mobile game applications within few months after the first launch. Besides the fact that local game developers need to fight against each one another, as well they also need to compete with game developers outside the country.

The purpose of this paper is to understand the behaviour of mobile gaming consumers, specifically on their intention to play and loyalty, which are likely to contribute to the success of mobile games within Thailand. Two frameworks are drawn to determine what factors influence mobile gamer's playing intention and loyalty, where factors such as perceived enjoyment, flow, norms, perceived co-presence, perceived cohesion, customer preference, attitude, usefulness and trust are studied. The study only focuses on people who have experience with mobile games, where online questionnaires were distributed randomly through emails, social network communication channels, as well as being shared on social network pages.

The results indicates that perceived trust, flow, perceived enjoyment, and usefulness significantly influence user's intention to play. Moreover, it also shows that flow, customer preference, perceived enjoyment, and norm significantly influence user's loyalty towards playing mobile games.

This research is expected to benefit game developers and game related business investors to understand more about mobile gamer's behaviours within Thailand.

KEYWORDS: Mobile games / Intention to play / Gaming loyalty

62 pages

CONTENTS

	Page
ACKNOWLEDGEMENTS	ii
ABSTRACT	iii
LIST OF TABLES	vi
LIST OF FIGURES	viii
CHAPTER I INTRODUCTION	1
1.1 Background	1
1.2 Problem Statement	6
1.3 Research Questions	7
1.4 Research Objective	7
1.5 Research Scope	8
1.6 Expected Benefits	8
CHAPTER II LITERATURE REVIEW	9
2.1 Theoretical Framework	9
2.1.1 Framework 1	9
2.1.1.1 Purchase Intention/Intention to play	9
2.1.1.2 Technology Acceptance Model	10
2.1.1.3 Theory of Reasoned Action	11
2.1.1.4 Perceived Enjoyment/Satisfaction	12
2.1.1.5 Flow	12
2.1.1.6 Perceived Co-presence	13
2.1.1.7 Trust	13
2.1.2 Framework 2	13
2.1.2.1 Customer Loyalty	13
2.1.2.2 Customer Preference	14

CONTENTS (cont.)

	Page
2.1.2.3 Perceived Cohesion	15
2.1.2.4 Social Norm	15
2.2 Previous Empirical Studies	16
2.3 Conceptual Framework	19
CHAPTER III RESEARCH METHODOLOGY	21
3.1 Research Design	21
3.2 Sample Population and Sample Size	21
3.3 Research Instrument	22
3.3.1 Construct Measurements	22
3.3.2 Questionnaire Design	22
3.4 Data Analysis	23
CHAPTER IV FINDINGS AND DATA ANALYSIS	25
4.1 Respondent Profiles	26
4.1.1 Demographic profile of the respondents	26
4.1.2 General gaming behaviours of the respondents	27
4.2 Descriptive Analysis	28
4.3 Reliability Test	35
4.4 Correlation Analysis	36
4.5 Linear Regression Analysis	39
4.6 Discussion	45
CHAPTER V CONCLUSION AND RECOMMENDATIONS	51
5.1 Conclusion	51
5.2 Recommendation	55
5.3 Limitation	56
5.4 Future Research	56

CONTENTS (cont.)

	Page
REFERENCES	57
BIOGRAPHY	62



LIST OF TABLES

Table	Page
3.1 Questions in survey	24
4.1 Demographic profile of respondents	26
4.2 General behaviours of respondents	27
4.3 Mean response of perceived enjoyment	28
4.4 Mean response of flow	29
4.5 Mean response of norm	29
4.6 Mean response of perceived co-presence	30
4.7 Mean response of attitude	30
4.8 Mean response of perceived usefulness	31
4.9 Mean response of trust	31
4.10 Mean response of customer preference	32
4.11 Mean response of perceived cohesion	32
4.12 Mean response of intention to play	33
4.13 Mean response of loyalty	33
4.14 Grand mean response in each of the factors	34
4.15 Cronbach's alpha score	35
4.16 Correlation analysis	36
4.17 Linear regression analysis: model summary (intention to play)	39
4.18 Regression coefficient (intention to play)	39
4.19 Linear regression analysis: model summary stepwise (intention to play)	40
4.20 Regression coefficients stepwise: final model (intention to play)	41
4.21 Linear regression analysis: model summary (Loyalty)	42

LIST OF TABLES (cont.)

Table	Page
4.22 Regression coefficient (Loyalty)	42
4.23 Linear regression analysis: model summary stepwise (Loyalty)	43
4.24 Regression coefficients stepwise: final model (Loyalty)	44
5.1 Hypothesis Result	53



LIST OF FIGURES

Figure	Page
1.1 Global games market revenue per segment	3
1.2 Global games market revenue per region in 2016	4
1.3 Popularity of Social Networks in each country in SEA	4
1.4 Mobile Games revenue in South East Asia	5
2.1 Technological Acceptance Model	10
2.2 Theory of Reasoned Action Model	11
2.3 The Relation between Degree of Challenge and Skill Level	12
2.4 Proposed Research Model by Nhi H. X. Dang and Phuong V. Nguyen	16
2.5 Proposed Research Model by Dong-Hee Shin and Youn-Joo Shin	17
2.6 Proposed Research Model by Jimming Wu and De Liu	17
2.7 Proposed Research Model by Chin-Lung Hsu and His-Peng Lu	18
2.8 Proposed Research Model by Lan-Ying Huang	18

CHAPTER I

INTRODUCTION

In this social era, it is not deniable that everyone is being constantly connected by smartphones. They have become a staple of our society, where social applications have made our lives a lot easier. On the other hand, it is being said that smartphones have already integrated into our everyday lives. People who are not using social networking application, such as Facebook, Instagram, WeChat or Line can be hardly seen. When looking into the number of applications downloaded worldwide, it has been shown that those numbers have been increasing with a terrific amount year by year. Mobile games have been a large contributor to the following phenomenon. This reflects that there is a market opportunity for mobile games, for both side of supply and demand. However, it is known in common that most mobile games have a very short product life cycle. On average it takes just two months for the gaming apps' monthly users to decline to 50 percent of their lifetime peak (Flurry, 2014). Therefore, it is still risky to jump into this business without considering different success factors.

1.1 Background - The historical and current position of mobile gaming industry

Gaming industry has not been this attractive in the past, it was not a multi-billion industry as it is today. There were only small groups of people who perceived the joy of playing video games. Until in the early 1970s, the industry has popularly emerged to public and has grown from niche markets to mainstream. This results from arcade games which were released one after another in those early years. The response from the users were surprisingly good, where the first generation game

called “Pong” were sold over 19,000 arcade cabinets. At the time, more and more interests were given into the market until it lost momentum in 1977 and was rejuvenated in 1978 by another successful game called “Space Invaders”. With this, it confirmed and directed where the industry would head towards, and it paved a great path for the golden age of video arcade games. It also inspired arcade machines to appear in mainstream public spaces such as, shopping malls, stores and restaurants. Space Invaders went on to make \$2 billion in 1982. In the late 1970s, personal computer gaming also took off and the development of computing led to a simultaneous advancement in gaming technology as well. (Martin, 2015).

When it comes to the birth of mobile games, it can be hardly traced back to what games were created first. However, what we actually know is that it became much more popular and gained public interests when the game called “Snake” was first appeared on the Nokia 6610 in 1997. It was so popular and addictive that the game was downloaded on more than 350 million devices worldwide. Through improvements and technological advancements, it has become the first two-player mobile game which were connected through infrared ports. (Chris Wright, 2016).

Throughout the years, there have been a lot of major developments which contribute to the games we have today. One of the things that we have seen is the change in technology, from 1990s we have witnessed massive improvements in mobile phone technology which give them capability to handle more powerful applications. One of the critical events was the Apple’s introduction of iPhone in 2007, which empowered and revolutionized the definition of mobile gaming. (Valerie Lynn Waldron, 2014). The benefit to the mobile gaming industry was not only the iPhone device itself which presented strong specifications that can cope with high performance applications, but it triggered competitors to come up with better ones too. This stimulated game developers’ idea generations to generate better games, as there are higher performance platforms to support them.

Mobile marketplace platforms such as App Store and Google Play, is another factor that make the mobile gaming industry becomes much more attractive. This is because they revolutionized the distribution of applications for mobile devices. (Romel Ayalew, 2011). Having those platforms, it lowers the barriers of entry into this

market as the game developers do not have to seek for game publishers or game distributors like old times.

Global Games Market

When looking at the global statistic, we can see that at the end of year 2016 the global gaming market is expected to approach \$100 billion, and the mobile games are expected to account for 37% of the total revenues. (Newzoo, 2016)

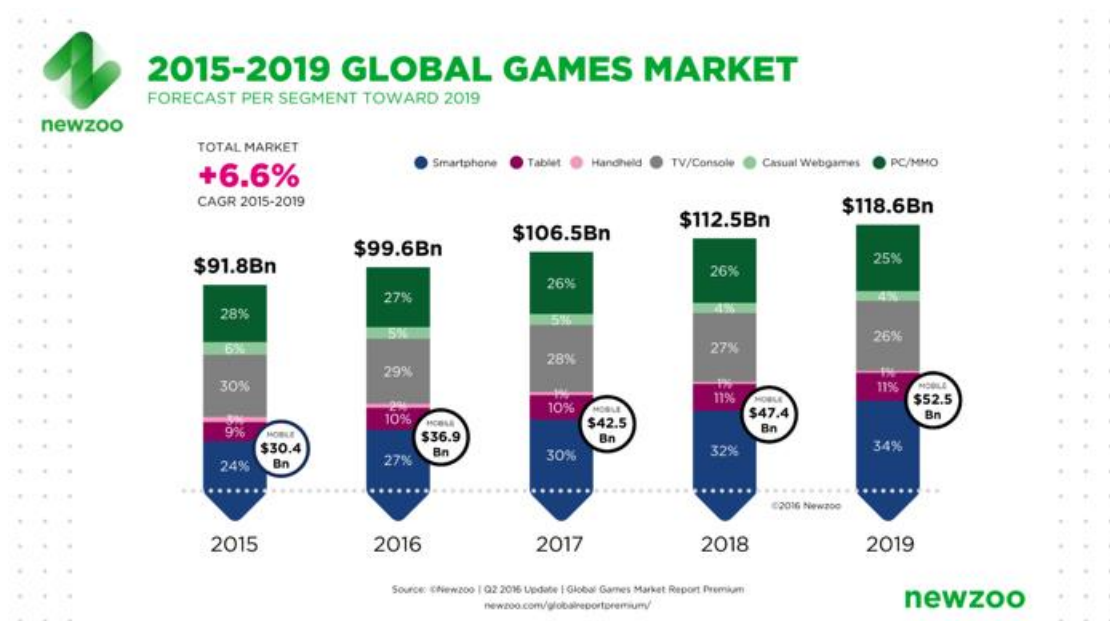


Figure 1.1 Global games market revenue per segment (Newzoo, 2016)

Moreover, it is expected that by 2019 around 45 percent of the total revenue will come from mobile games. This is where it can be seen that mobile gaming industry is getting larger and larger every single day. (Newzoo, 2016)

By getting more focused, in 2016 the major share of global games revenues are coming from Asia-Pacific markets (includes Thai market). As the current state, Asia-Pacific accounts for 47% of the market, and is expected to reach 58% of the market by the end of 2016. (Newzoo, 2016)

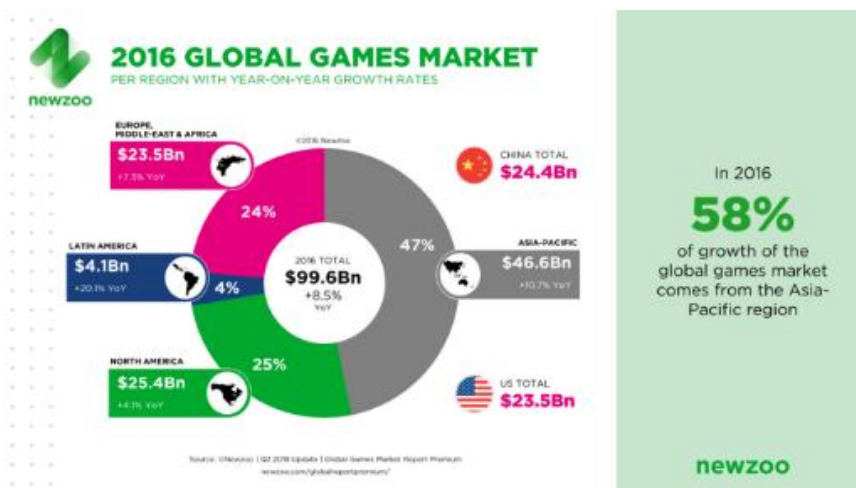


Figure 1.2 Global games market revenue per region in 2016 (Newzoo, 2016)

South East Asia and Thai Mobile Games Market

To generalize the overall idea on Thai mobile gaming market, it would be a good idea to raise specific facts on South East Asia (SEA) region first, before going into details why Thai mobile gaming market is also attractive and challenging to get into. There are several reasons to why SEA mobile gaming market is getting attractions and interests from investors all over the world. First of all, it is because it is the world's fastest growing region, it has been shown that there is an underlying growth from year to year, this includes economic growth (GDP) and online connectivity growth. For example, there is a huge increase in online population in SEA region. In year 2014 where there was an online population of around 30 percent, but at the end of year 2015 there was an online population of 40 percent. Those underlying growth could turn into an opportunity of launching mobile games. Secondly, it is also believed SEA market is a better option than China's market that has the greatest games revenues. (Newzoo, 2016)

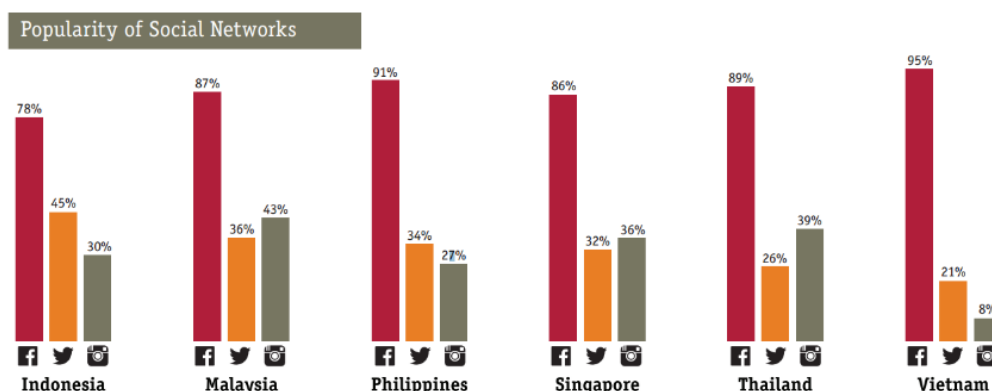


Figure 1.3 Popularity of Social Networks in each country in SEA (Newzoo, 2015)

The reason to this is that SEA may be easier to enter than China due to the familiarity with English as a language of international business. In Singapore and Philippines, English is an official language. Or in Malaysia, English is an active second language. Moreover Southeast Asia also shares many of the same preferences for social networks as well as games. Thirdly, SEA gamers do spend. From the statistics it is shown that 43 percent of mobile gamers spend their money on mobile games and in-game items. This increases the potential of executing profitable mobile gaming business. As a result, the expected mobile game revenues at the end of 2016 is \$2.1 billion which is doubled from 2014. (Newzoo, 2016). More surprisingly, some of the researcher has forecasted that the mobile games revenue in South East Asia could exceed \$7 billion in 2019. (Frost & Sullivan & Dean Takahashi, 2015)

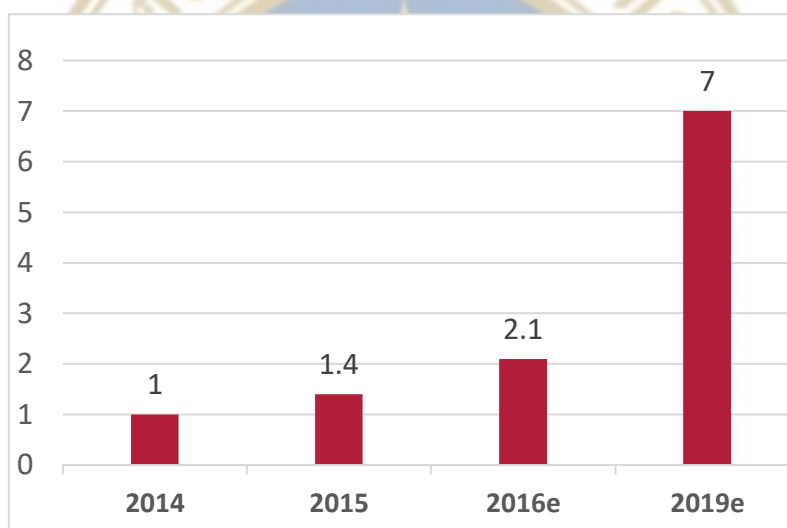


Figure 1.4 Mobile Games revenue in South East Asia

From the global and regional past data collections and statistics, we can see that in general mobile gaming business is very attractive. However, when discussing about the attractiveness of mobile gaming market in Asia-Pacific, the main focuses usually fall on big players with large revenues like China, South Korea, and Japan. This is an unrejectable argument, but it is also believed that Thai market as well has a great opportunity for mobile gaming business, and cannot be overlooked especially from us Thai people.

First of all, Thailand has a relatively strong economy compared to the rest of the region. Thailand's game (PC, console, and mobile) revenue has been the largest

in South East Asia in the past two years. In 2015, the total game revenue was \$336 million which went from \$230 million in 2014. (“Will 2016 be the year”, 2016). Not only the total game revenue has been increasing year by year but, the mobile game revenue percentage that makes up the total revenues has also simultaneously increased. It went from 40 percent in 2014, to 50 percent in 2015, and expected to have 60 percent at the end of 2016. (“Will 2016 be the year”, 2016) (Newzoo, 2016). Moreover, at the current state Thailand now has over 40 percent online population. (VMAX, 2016) The increase in the number is also very promising, due to the consistent extensions and improvement of the wireless network technology in Thai mobile carriers (4G spectrum). (Frank, 2016). However of those population, 13-14 million are active mobile gamers which 49 percent of them spend money on mobile games, relatively higher than the 45 percent global average. (VMAX, 2016) The annual spend per player or average revenue per user is around 28 dollars. (Statista, 2016). The most popular game in Thailand which ranks the first on the top grossing list is “Seven Knights”. By the definition of top grossing list, it means that it generates the most revenue, which includes all the revenue generated from the purchase of the app and in-app purchases. (AppTweak, 2016). From these statistics together with the fact that Thailand ranks 9th on the Google Play Store in terms of app downloads, there is a lot of potential here for us to jump into this field of business. (VMAX, 2016)

1.2 Problem Statement

Although, looking from the statistics and data collected in the past few years, it is very tempting for investors to make some cash out of the mobile gaming business. However in reality, there are more losers than winners. When you look closely into Thai mobile gaming industry, there are over 60,000 local game developers who compete and fight for every single player. (Frank, 2016). On top of that, they also need to compete with investors and game developers outside the country, such as those from the West, where 35 percent of the top downloads comes from. (VMAX, 2016). Moreover, the very true fact is that all the mobile applications including mobile games takes few months to reach its half-life, meaning that it takes

few months for the applications to lose half of its customers. In terms of mobile games, on average takes two months (Flurry, 2014). Furthermore, only 25 percent of the applications are only opened a single time and, 34 percent are used over 11 times. (Shane O'Neill & VMAX, 2015).

From these statistics, it clearly states that there is a great difficulty of being successful in mobile gaming business even though there is a market opportunity. The first problem is that we do not know exactly how Thai people choose to purchase or download the game, as different gaming business models are needed in different locations and culture to satisfy specific group of needs. The second problem is that, we do not clearly know what influences the efficiency users' engagements throughout the application's lifecycle in order to maintain constant revenue and stay in the business. This paper will investigate and study mainly the factors that influence customer intention and loyalty, which contribute to the success of mobile games within Thailand. The goal is to help Thai game developers to create games that suit Thai market, as well as to help gaming companies to have a better idea on which kinds of games to invest and bring into Thai market.

1.3 Research Questions

In order to answer the problems addressed, these are questions which this paper will attempt to answer:

- 1) What factors influence mobile gamer's playing intention within Thailand?
- 2) What factors influence Thai mobile gamer's loyalty?

1.4 Research Objective

From the problem statement, we can see that in order to stay successful in mobile gaming business, we need to identify and truly understand factors that influence customer choice of purchase and customer loyalty. The main objective of this study are "to study factors that influence mobile gamer's playing intention and their loyalty". The results can benefit game developers and gaming companies who enter Thai market.

1.5 Research Scope

The study will focus on people who used to or are playing any kind of mobile games. The people who have never played mobile games will be excluded through screening questions in the survey.

1.6 Expected Benefit

The expected benefits of this study is to help game developers and game related business investors to understand more about mobile gamer's behavior within Thailand. Having the knowledge, it can give them more or less ideas about what factors that must be put into considerations, when developing or importing mobile games, that will likely to be successful in Thai market.



CHAPTER II

LITERATURE REVIEW

Mobile game industry is very competitive globally and within the country, there are varieties of mobile game applications popping up every day in Apple App Store and Google Play Store. Due to high competition, it is not easy for any mobile games to be successful. It is essential to understand customer intention to play or purchase, as to recognize specific points of the game needed to attract the customers. However, having only the knowledge of their intention is not enough as they may not continue to play the games in the future due to high daily occurrence of new games. This is where loyalty becomes crucial, it is the intention of the customers to keep using the game, or we can say that it is a degree to which the game players believe that they will continue to play the game. Having said that both intention and loyalty of the customers are important for the success, two frameworks will be proposed in this section based on previous explored literatures.

2.1 Theoretical Framework

2.1.1 Framework 1

Dependent Variables

2.1.1.1 Purchase Intention/Intention to play

Purchase intention is a consumer's preference to buy a product or service based on cognitive decision making on his/her needs. Even attitude towards a product and perception of product can give influences. In other words, purchase intention means consumer will buy a product after he/she evaluates a product and finds out that the product is worth buying. While the consumer may have chosen another product, the final decision on accepting a product to buy or rejecting depends on the consumer purchase intention. (Abdolrazagh Madahi & Inda Sukati, 2012).

Independent Variables

2.1.1.2 Technology Acceptance Model

Technological Acceptance Model or TAM was proposed by Fred Davis in his doctoral thesis at the MIT Sloan School of Management (Davis, 1989). Basically it is an information systems theory that models how users come to accept and use a technology. Davis came up with a model which suggests factors that influence user's decision when presented to a new technology. In this proposal, Davis suggested that user's motivation can be explained by three factors: Perceived Ease of Use, Perceived Usefulness, and Attitude toward using the system. (Mohammad Chuttur, 2009).

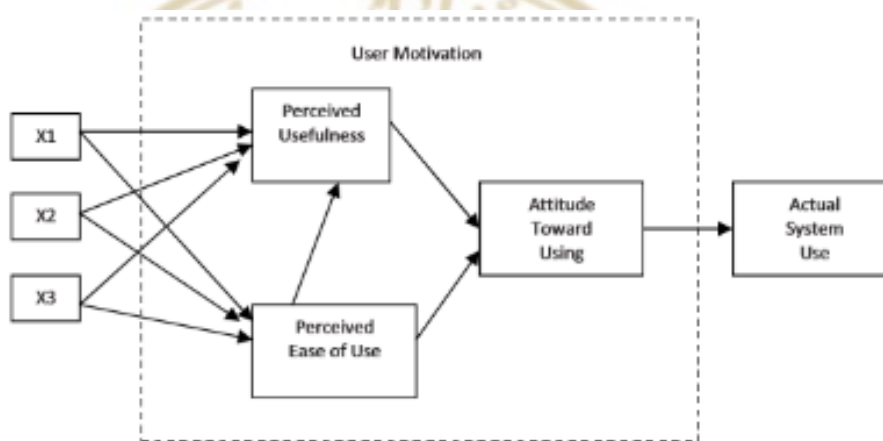


Figure 2.1 Technological Acceptance Model (Davis, 1985)

Perceived Ease of Use

Perceived Ease of Use refers to as “the degree to which a person believes that using a particular system would be free from effort”. (Davis, 1989)

Perceived Usefulness

Perceived Usefulness refers to as “the degree to which a person believes that using a particular system would enhance his or her job performance.” (Davis, 1989)

Attitude

Attitude has long been identified as a cause of intention. It is an expression of favor or disfavor toward a person, place, thing, or event. (Norazah Mohd Suki, 2011).

2.1.1.3 Theory of Reasoned Action

Theory of Reasoned Action or TRA was developed to examine the relationship between attitude and behavior. The theory was proposed by Fishbein and Ajzen in 1975, where the framework defines the links between beliefs, attitude, norms, intentions, and behaviors of individuals. (Fishbein & Ajzen, 1975).

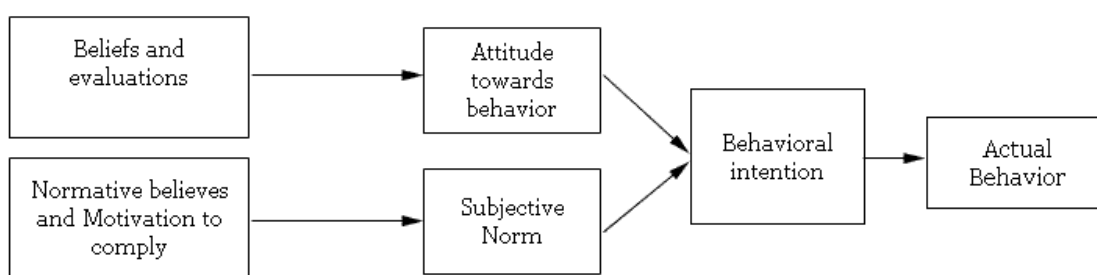


Figure 2.2 Theory of Reasoned Action Model (Fishbein & Ajzen, 1975)

Behavioral Intention

The concept of behavior intention states that an individual's motivation to engage in a behavior is defined by the attitudes that influence the behavior. It indicates how much effort an individual would like to commit to perform such behavior. Higher commitment is more likely to mean that behavior would be performed. (Fishbein & Ajzen 1975). They proposed that "the individual's intention to perform a behavior is a combination of attitude toward performing the behavior and subjective norm." (Fishbein & Ajzen, 1975,1980).

Attitude

It can be seen that attitude is also included in TAM, where it has the same meaning and definition, which refers to an individual's perception (either favorable or unfavorable) toward specific behavior. (Werner, 2004).

Subjective Norm

Subjective norm is an individual's judgement about whether most people who are important to the individual will approve of a particular behavior under consideration. (Wu & De Liu, 2003). Basically, it refers to the individual's subjective judgement regarding other's preference and support for a behavior. (Werner, 2004)

2.1.1.4 Perceived Enjoyment/Satisfaction

The term enjoyment is commonly known as, “the state or process of taking pleasure in something”. In the context of social network and games, perceived enjoyment seems to be very important and is considered as a crucial factor to determine what content to be used in products and services. Chin-Lung Hsu (2005), stated that perceived enjoyment is one kind of intrinsic motivation. It is the pleasure and satisfaction from performing a behavior. When talking from a gaming perspective, it is “the extent to which the activity of participating in the online game community is perceived to be pleasure and satisfaction.”

2.1.1.5 Flow

Csikszentmihalyi’s theory of flow focuses on the feeling of immersion that people can experience when performing a task. It is an optimal psychological state that people experience when engaged in an activity that is both appropriately challenging to one’s skill level often resulting in immersion and concentrated focus on a task. This can result in deep learning and high levels of personal and work satisfaction. (Csikszentmihalyi, 1990). This means that game designer’s goal is to match the level of challenge with the supposed skill level of the user. They have to keep players immersed in the game by providing feedback to players about how close they are to their next goal, which drives them to continue playing. The goal is to create a balance between providing enough challenge to keep the player from being bored, and making the game too difficult. (Stephanie Flodman, 2014)

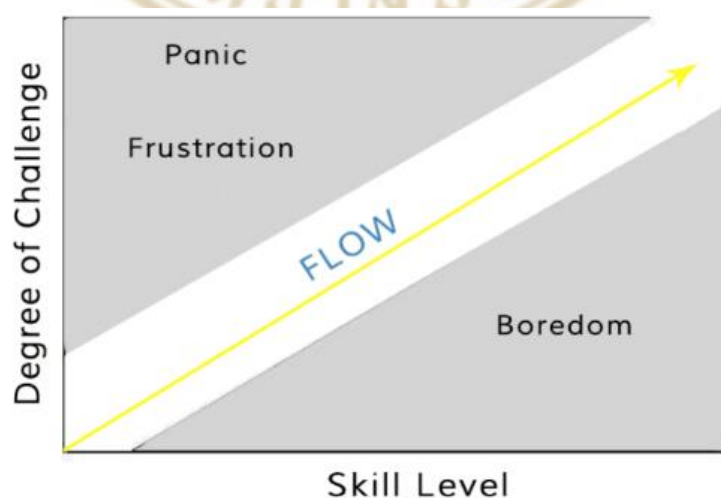


Figure 2.3 The Relation between Degree of Challenge and Skill Level in Csikszentmihalyi’s Model of Flow (Stephanie Flodman, 2014)

2.1.1.6 Perceived Co-presence

Perceived co-presence in a game context can be stated as an extent to which players feel they are connecting to each other. It is how players can connect with one another in both virtual and real worlds through playing mobile games, and at the same time feel that they are a part of the game and community. In the game environment, there are many ways that can increase their sense of co-presence such as providing better graphics, sounds, and communication channels. (Nhi H. X. Dang and Phuong V. Nguyen, 2015).

2.1.1.7 Trust

Trust is a fundamental principle of every business relationship. It is found that the most significant long-term barrier for realizing the potential of Internet marketing to consumers was the lack of consumer trust. (Brian J. Corbitt, & Theerasak Thanasankit & Han Yi, 2003). Trust in e-commerce has been defined as a belief that a Web vendor would do what consumers expect. As online environment is impersonal, consumers often feel more uncertain about online vendors and the outcome of online transactions. (Jiming Wu, De Liu, 2007). Moreover, majority of the time that game players must rely on the game companies or the game providers. Firstly, it is due to the fact that the players expect good quality games from popular companies. Secondly, they expect none of network congestion, server overload, or server failure. Thirdly, they expect that all the game virtual currency or items will be secured. “These concerns and worries call for the involvement of trust in the online gaming context”. (Jiming Wu, De Liu, 2007).

2.1.2. Framework 2

Dependent Variables

2.1.2.1 Customer Loyalty

In a very basic level, loyalty is something that consumers may exhibit towards products and services. It is both an attitudinal and behavioral tendency to favor one brand over all others. There are many definitions and theory behind the term, but there are two backbone conceptualizations.

Customer loyalty can be seen as primarily an attitude that sometimes leads to a relationship with the brand or product. In order for the loyalty to exist, there must be a

strong belief and attitudinal commitment to the brand. The attitudes may be positive beliefs and feelings about the product relative to competitors, and would recommend it over the others. Moreover, there is also an approach to which states that “attitudes drive behavior” which results in repurchases, despite situational influences and marketing efforts having the potential to cause switching behavior. (Mark D. Uncles, 2003)

Customer loyalty can also be expressed in terms of revealed behavior. Over several years of data collection on purchase patterns across multiples of product categories, it is found that few consumers are ‘monogamous’ (hundred percent loyal) or ‘promiscuous’ (no loyalty at all). But rather, most people are ‘polygamous’ (loyal to a portfolio of brands in a product category). From the perspective, customer loyalty can be defined as “an ongoing propensity to buy the brand, usually as one of several” (Ehrenberg and Scriven, 1999). As it is also believed that the repurchase occurs from customer’s behavior and perception that it is not worth the time and trouble to search for an alternative. (Mark D. Uncles, 2002)

Independent Variables

2.1.2.2 Customer Preference

Customer preference can be explained in terms of what customer likes and dislikes. It is what customer prefers over the other. However in a gaming context, it is a proposed construct for referring to the aspects of games that players enjoy the most. (Veronica Zammitto, 2010). There are multiple works that attempt to classify games through different conceptualizations. Most people would classify the games based on genre, such as Action, Strategy, Role Plying, and Sports. However, the easier way to classify those games is to put them into one of the two categories, hardcore or casual. Some people see hardcore games as ones with high barriers of entry and burdens of knowledge. In short, hardcore games take a significant dedication and time as they have stiff learning curve. On the other hand, casual games are ones that consumer can just pick up with a small and easy learning curve where they do not have to spend a lot of time to enjoy majority of the game contents. (“Casual vs non-casual”, 2015) It cannot be argued that customer preference is likely to be affected by their personal factors. Personal factors include variables such as age and way of life, occupation, lifestyle, and personality. (Pinki Rani, 2014). There is no single customers that buy the same product for over a long period of time. This is because their consuming habits change and evolve

over time, and chapters they encounter during their lifetime constantly change. Occupation often reflects purchasing power and revenue (Fanny Perreau, 2014), which accounts for decision making when purchase products as different people have different size of budgets. Lifestyle is another key factor that affect customer's purchasing decision, for example people with healthy lifestyle would shop for healthy dishes and sportswear. As well as lifestyle, personality changes from one person to one person and it affects their consuming behavior. For example, outgoing people may choose to shop for fashionable items.

2.1.2.3 Perceived Cohesion

Group cohesion has been describes as a sense of members' attraction to the group (Hogg, 1993). Cohesion usually increases when people in a group perceive that common goals and objectives can be achieved through group action. In many instances, group cohesion has been linked to a number of positive outcomes, such as more positive interpersonal relations, a high degree of commitment to the group task, favorable communication, interactions, and group performance. (Chin-Lung Hsu, 2005). It can also be regarded as the extent to which a person feels that he/she is connecting with other people in the opposite way through interactions. In the presence of online gaming environment, enhance in gamers interest together as a group could lead to an increase in their sense of perceived cohesion. (Nhi H, 2015).

2.1.2.4 Social Norm

By exact definition, social norms are the rules of behavior that are considered acceptable in a group or society. People who do not follow them may be shunned of suffer some kind of consequence. However, it is explained in a slightly different way when discussing in a context of gaming products and services. Chin-Lung Hsu (2005) believed that social norm is the degree to which the user perceives that others approve of their participating in the online game community. From some researches, it is somewhat one kind of social pressure, which influence individual's behavior accepted by a particular group, community, or culture.

2.2 Previous Empirical Studies

The study of intention to play online mobile games in Ho Chi Minh City, Vietnam

Nhi H. X. Dang and Phuong V. Nguyen (2015) aimed to examine factors that affect gamers' intention to play in Vietnam. Through collections of surveys and analysis, the results have shown that the most important drivers of gamer's intention to play online mobile games is perceived enjoyment, followed by satisfaction about the games. Moreover, the researchers observed that player's enjoyment from a game they are playing is a strong motivation to keep them stick with that game in the future.

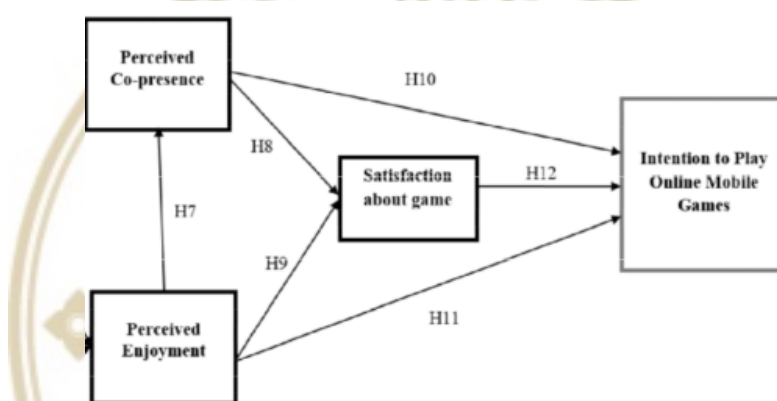


Figure 2.4 Proposed Research Model in the study of intention play mobile games in Ho Chi Minh City (Nhi H. X. Dang, Phuong V. Nguyen, 2015)

The study of why people play social network games

Dong-Hee Shin and Youn-Joo Shin (2010) proposed a study to examine the perceived factors which contribute to social network game user's behavior. The results from a survey of social network game players validate that the proposed theoretical model explains and predicts user acceptance very well, perceived enjoyment, perceived usefulness, attitude, and flow affects intention significantly. As users accept the game as a new way to entertain and escape from reality, the researchers hope that game developers will understand more about the factors that influence the user intention to use.

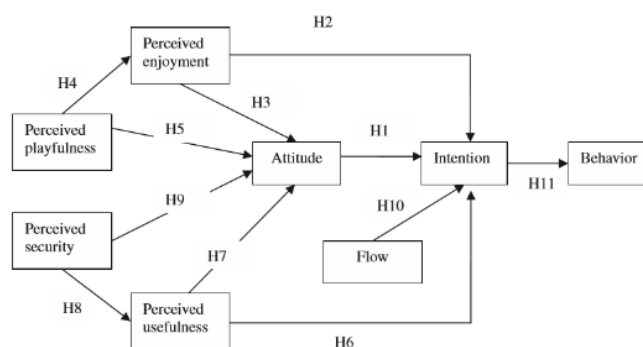


Figure 2.5 Proposed Research Model in the study of why people play social network games (Dong-Hee Shin, Youn-Joo Shin, 2010)

The study of effects of trust and enjoyment on intention to play online games

Jimming Wu and De Liu (2007) believed that understanding online game player behavior is critical to the success of online game. They proposed a theoretical model that augments the theory of reasoned action with two new constructs, trust and enjoyment. With the framework, they investigated the impact of trust and enjoyment on behavioral intention. The model was tested by using questionnaire responses on 253 online game players. The results show that attitude, enjoyment, and subjective norms predict intention, however trust affects intention indirectly.

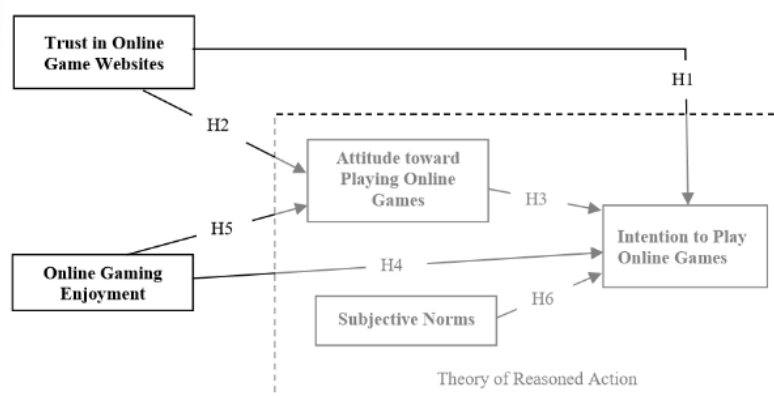


Figure 2.6 Proposed Research Model in the study effects of trust and enjoyment on intention to play online games (Jimming Wu, De Liu, 2007)

The study of consumer behavior in online game communities

Chin-Lung Hsu and Hsi-Peng Lu (2007) applied the theory of reasoned action and modified the technology acceptance model to propose a research model. However, in this study they replaced perceived usefulness with perceived enjoyment, due to the belief that online games community is for leisure and pleasure not to achieve

specific goals or improve performance. The results from surveys indicated that customer loyalty is influenced by perceived enjoyment, social norms and preference. Perceived ease of use influences both preference and perceived enjoyment significantly. Easy-to-use interface enhance enjoyment and encourage people to re-participate. On the other hand, it is found that difficulties of use make people resist. It is also found that perceived cohesion has an impact on loyalty.

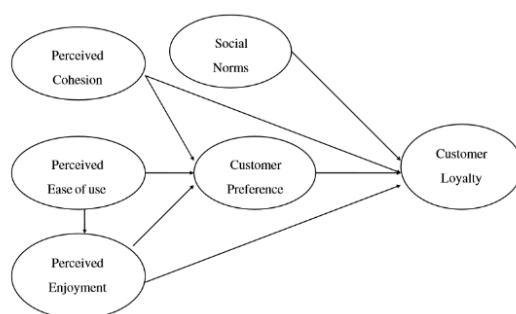


Figure 2.7 Proposed Research Model in The study of consumer behavior in online game communities (Chin-Lung Hsu, His-Peng Lu, 2007)

The study of online game loyalty based on need gratification and experiential motives

Lan-Ying Huang (2011) studied and explored the factors affecting consumer's loyalty towards online games. The results from the survey in Taiwan indicates that sense of control and perceived enjoyment are the key factors affecting player's loyalty toward an online game. However, sociality or social norms produce negligible effects on loyalty. The results concur with the view that a gamer's sense of control over the virtual environment an actions or what we called "flow" has a direct influence on game playing loyalty. Also with the help of enjoyment, it leads to a deeper sense of loyalty. However, an appropriate level of challenge are needed to keep online gamers continuously motivated and engaged in the game as flow researchers suggest.

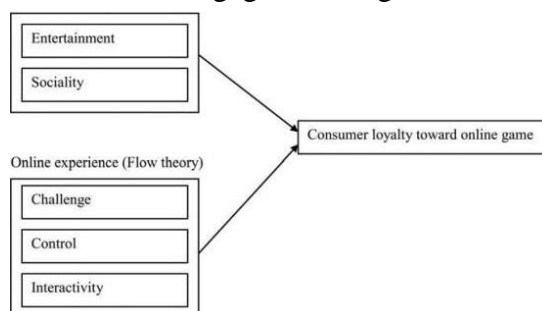
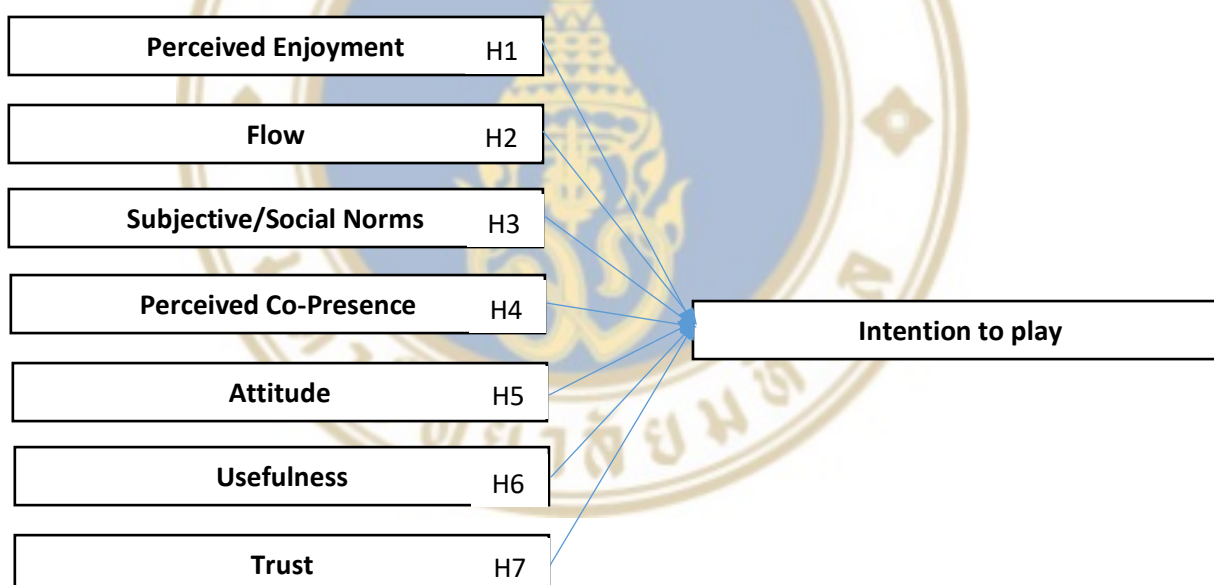


Figure 2.8 Proposed Research Model in the study of online game loyalty based on need gratification and experiential motives (Lan-Ying Huang, 2011)

2.3 Conceptual Framework

As stated in the problem statement that not only mobile game market is very competitive to get into, which is why it is important to study on customer intention to play the game, but customer loyalty is also important. Intention to play only means that the customers have their preference to play the game, but they may not continue to play the games in the future if there are new games available. Thus, two frameworks are proposed with hypothesis. Note that the frameworks are focused only factors that influence directly to customer intention and loyalty. Moreover, perceived enjoyment and satisfaction as well as social norms and subjective norms are accounted as the same factor as they have similar meanings and very close in terms of relationship.

Framework 1



H1: Perceived enjoyment in mobile games is significantly related to intention to play mobile games

H2: Flow in mobile games is significantly related to intention to play mobile games

H3: Norm is significantly related to intention to play mobile games

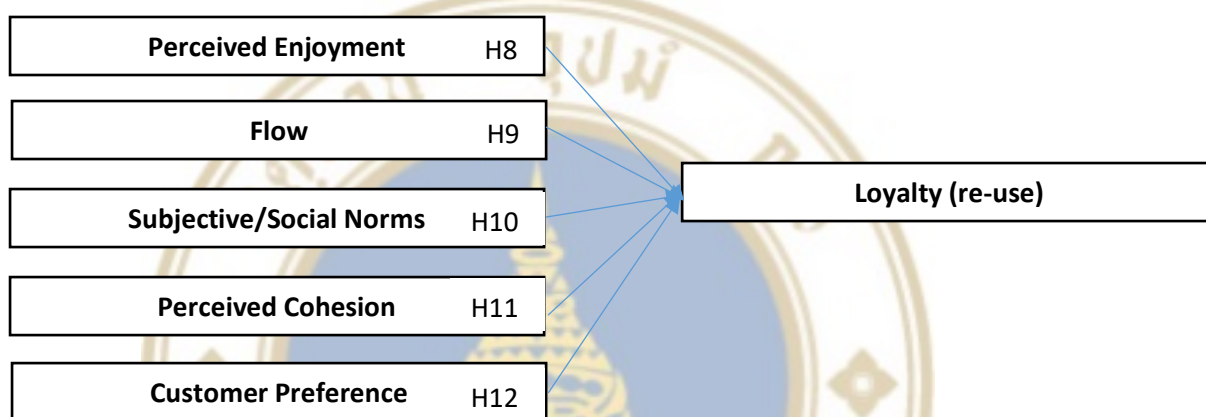
H4: Perceived co-presence in mobile games is significantly related to intention to play mobile games

H5: Attitude towards mobile games is significantly related to intention to play mobile games

H6: Usefulness of mobile games is significantly related to intention to play mobile games

H7: Trust in mobile games is significantly related to intention to play mobile games

Framework 2



H8: Perceived Enjoyment in mobile games is significantly related to loyalty to play mobile games

H9: Flow in mobile games is significantly related to loyalty to play mobile games

H10: Norm is significantly related to loyalty to play mobile games

H11: Perceived Cohesion in mobile games is significantly related to loyalty to play mobile games

H12: Customer Preference in mobile games is significantly related to loyalty to play mobile games

CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

The study has been focused on people who have experience with mobile games. The questionnaires was developed and adapted from the literatures listed in chapter 2, where they will be conducted via online form to examine the above hypothesis. The questions were looked through by several experienced gamers to make sure that they are clear and understandable for people who will take the survey. Also majority of the questions were taken from the past literature reviews.

3.2 Sample Population and Sample Size

The research will be focusing on random Thai people in Bangkok, as it is hardly impossible to know whether if those people have been playing mobile games or not. However, there will be some questions for screening out those who play mobile games from those who do not, and the collected results used will be from the target group. The sample size used is estimated to be around 150 in a time frame of one week. The estimated number came from Cochran's formulae, where the size of population of mobile game users in Thailand is more than 100,000 with the confidence interval of 95% and 10% precision. (Glenn D. Israel, 1992). Based on Taro Yamane, where he took the assumption that the normal population is poor, the sample size taken should be 100. (Yamane, 1967). Also, with the limited timeframe of one week, the past literature where they collected 300 responses in the time span of 3 weeks, the estimated sample size of 150 in this research is likely to be done. (Dong-Hee Shin, Youn-Joo Shin, 2010).

3.3 Research Instrument

The method of this research is purely online questionnaire survey. The online survey will be conducted via Google platform, which will be sent to random people, and the data will be monitored and collected afterwards. The online survey will be sent through emails, social network communication channels, as well as being shared on social network pages.

3.3.1 Construct Measurements

There will be four parts for the questionnaire survey, which each part will contain different types of rating scales. For the first three parts, the scale used will be nominal where all the variables will be labeled so that there will be no overlap in the scales. For the fourth part, the scale will be ordinal, which is represented through six-points rating scale (1 is strongly disagree and 6 is strongly agree). The reason to why there is no mid-point in the scale is to eliminate the probability of the respondents choosing ones in the middle. It forces people to choose ones that can be easily classified as agree or disagree, as well to direct them to be more thoughtful and have no misinterpretation of mid-point. (Jan Losby & Anne Wetmore, 2012)

3.3.2 Questionnaire Design

The questionnaire of this research are divided into 4 parts. The structure of the survey is adapted from the previous selected literatures.

Part 1: Screening question to verify that the respondent has experience with playing mobile games.

Part 2: Demographic questions to see how samples are distributed in terms of age, income, and occupation.

Part 3: General questions to classify if, they have a lot of experienced with mobile games and if they spend a lot of time playing mobile games.

Part 4: Specific questions consist of dependent and independent variables questions which will be rated through six-point rating scale.

3.4 Data Analysis

The data collected from the online questionnaires will be processed using SPSS statistical program. The tests performed will be descriptive analysis of the respondents, reliability analysis to see whether the questions have internal inconsistency, correlation analysis as to check for how correlated each of the factors are, and simple linear regression analysis to identify which independent factors can predict the dependent factor. The results then will be analyzed and executed using the researcher knowledge in statistic, with reliable cut off values.



Table 3.1 Questions in survey

Screening Questions	
Screen 1	Do you play mobile games ?
General Questions	
General 1	How many years of experience do you have with mobile games?
General 2	What categories of mobile games do you play the most?
General 3	How many hours of mobile games do you play in a week?
General 4	How many hours of mobile games do you play per session?
General 5	Where do you usually play mobile games?
Demographic Questions	
Demo 1	What is your gender?
Demo 2	What is your age range?
Demo 3	What is your education level?
Demo 4	What is your income level?
Specific Questions	
Perceived Enjoyment *adapted from (Nhi H.X Dang, Ohuong V. Nguyen, 2015)(Jimming Wu, De Liu, 2007)	
PE 1	I enjoy playing games on mobile phone
PE 2	I find mobile games fascinating and enjoyable
PE 3	Playing mobile games gives me a lot of pleasure
PE 4	I want to play mobile games longer given the opportunity
PE 5	I think there are many features to explore in mobile games
Flow *adapted from (Lan-Ying Huang, Ying-Jiun Hsieh, 2011)(Dong-Hee Shin, YoungJoo Shin, 2011)	
Flow 1	During a gameplay, I was intensely absorbed in the activity
Flow 2	When playing a mobile game I do not feel any control
Flow 3	Playing mobile games provides a good test of my skills
Flow 4	Playing mobile games challenges me to perform the best of my ability
Flow 5	Interacting with mobile games is slow and tedious
Norms *adapted from (Chin-Lung Hsu, His-Peng Lu, 2007)	
Norm 1	My friends believe that I should play mobile games
Norm 2	My coworkers believe that I should play mobile games
Norm 3	My schoolmates believe that I should play mobile games
Perceived Co-Presence *adapted from (Nhi H.X Dang, Ohuong V. Nguyen, 2015)	
PC 1	As my game skill improves, others begin to recognize me and they think highly of me
PC 2	Mobile games present proper ways for me to exchange opinions with others
PC 3	Mobile games present opportunities to meet others
Attitude *adapted from (Dong-Hee Shin, YoungJoo Shin, 2011)	
Att 1	Mobile games are not appeal to me
Att 2	It would be a good idea to play mobile games
Att 3	Mobile games sound and look interesting to me
Usefulness *adapted from (Dong-Hee Shin, YoungJoo Shin, 2011)	
Use 1	I think mobile games are useful to me
Use 2	I think mobile games help me to enhance my ability to do something else
Use 3	I do not think mobile games help me with many things
Trust *adapted from (Jimming Wu, De Liu, 2007)	
Trust 1	Mobile games are trustworthy
Trust 2	I trust the payment system when download/purchasing game applications and in-game items
Trust 3	I trust mobile games when giving them personal information
Trust 4	I trust mobile games from the companies that have been providing good quality games and services
Customer Preference *adapted from (Chin-Lung Hsu, His-Peng Lu, 2007)	
CP 1	I like to play mobile games that fit with my lifestyle
CP 2	I play mobile games based on my time schedule
CP 3	I play mobile games based on its learning curve (whether it takes too much time or not)
Perceived Cohesion *adapted from (Chin-Lung Hsu, His-Peng Lu, 2007)	
PC 1	I like to feel fit with the mobile games community
PC 2	I like when I have same goals with other players when playing mobile games
PC 3	In general, it is a good idea for mobile game communities to act as a cohesive unit
PC 4	I like to meet up with other mobile game players and set goals and targets for ourselves
Intention to play *adapted from (Nhi H.X Dang, Ohuong V. Nguyen, 2015)	
Int 1	Assuming that I have an opportunity to download and play mobile games, I would definitely do it
Int 2	I intend to play mobile games in the near future
Loyalty (Intention to re-play) *adapted from (Lan-Ying Huang, Ying-Jiun Hsieh, 2011)	
Loyalty 1	I repeat playing those mobile games
Loyalty 2	I frequently return to mobile games that I participated before
Loyalty 3	I will recommend the games I played to others
Loyalty 4	I will say positive things about the games I played to others

CHAPTER IV

FINDINGS AND DATA ANALYSIS

This chapter shows the findings and analysis of data collection from the distributed online surveys. The surveys were sent out to 150 respondents, through the screen question, only 124 respondents were valid. This chapter will be divided into six sections, where section one will include reliability test of the questions used in the survey. Section two is the result findings, specifically on general gaming behaviors and demographic perspective of the respondents. Section three will present descriptive analysis on the responses from the survey. Section four is correlation analysis, which will look into the strength of relationship between the studied dependent and independent factors. Section five talks about linear regression models which were employed to identify significant predictors (independent variables) that can be used to predict intention to use and loyalty. All the significant tests used 95% confidence level to test the research hypothesis. The last section will present final models, as well as giving discussion about the findings and relate them to the past literatures used in this paper.

4.1 Respondent Profiles

4.1.1 Demographic profile of the respondents

Table 4.1 Demographic profile of respondents

	Frequency	Percentage
Gender		
Male	84	67.7
Female	40	32.3
Age		
Under 20 years	4	3.2
21-25 years	90	72.6
26-30 years	23	18.5
Over 30 years	7	5.6
Education		
High school or below	4	3.2
Bachelor's degree	85	68.5
Graduate degree or above	35	28.2
Income		
0-15,000	32	25.8
15,000-45,000	71	57.3
Over 45,000	21	16.9
Total	124	100

The survey was distributed to 150 respondents, but only 124 respondents play mobile games. The data of those respondents were then collected. Table 4.1 shows the demographic profile of the respondents. The majority of the respondents were male (67.7 %), aged between 21-25 years old (72.6%), had education background of bachelor's degree (68.5%), and had monthly income of 15,000-45,000 baht (57.3%).

4.1.2 General gaming behaviors of the respondents

Table 4.2 General behaviors of respondents

	Frequency	Percentage
Experience with mobile games		
Less than one year	5	4.0
1-2 years	8	6.5
2-3 years	8	6.5
more than 3 years	103	83.1
Category of mobile games		
Action / Adventure	57	46.0
Board	3	2.4
Casino / Card	9	7.3
Educational	4	3.2
Puzzle	19	15.3
Racing	4	3.2
RPG / MMORPG	13	10.5
Shooting	5	4.0
Sports	7	5.6
Other	3	2.4
Number of hours per week		
Less than 6 hours	86	69.4
6-10 hours	26	21.0
Over 10 hours	12	9.7
Number of hours per session		
Less than 1 hour	98	79.0
1-3 hours	22	17.7
Over 3 hours	4	3.2
Location		
Home	86	69.4
On your commute (ex. on bus, on car)	26	21.0
Restaurants	1	0.8
School / Campus	2	1.6
Shopping malls	1	0.8
Workplace	8	6.5
Total	124	100

Table 4.2 shows the general behaviors of those who play mobile games. The majority of respondents have more than 3 years of experience with mobile games (83.1%). It is claimed that the most played category is action/adventure (46%), there are mobile games such as Cookie Run, Temple Run, Angry Birds, and Plants vs Zombie. Three of the respondents selected the choice “other” (2.4%) which accounts for music and rhythm type of games. The majority claimed to play less than 6 hours per week (69.4%), and the number per session they usually play is less than one hour (79.0%). Most of them play mobile games in their home (69.4%), which followed by on their commute (21.0%).

4.2 Descriptive Analysis

This section shows every question that belong to each of the variable, and their mean and response reported from the survey. In each group of the questions, there also grand mean response which reflects the mean response of a specific factor or variable.

Table 4.3 indicates that the respondents score the mean of 4.28 in perceived enjoyment factor. In terms of this factor, enjoying mobile games scores the most (4.60), followed by finding the them fascinating (4.51), giving them a lot of pleasure (4.29), seeing them as having many features to explore (4.19), and wanting to play the mobile games given the opportunity (3.79).

Table 4.3 Mean response of perceived enjoyment

	Mean	Standard Deviation
I enjoy playing games on mobile phone	4.60	1.00
I find mobile games fascinating and enjoyable	4.51	0.99
Playing mobile games gives me a lot of pleasure	4.29	1.18
I want to play mobile games longer given the opportunity	3.79	1.39
I think there are many features to explore in mobile games	4.19	1.22
Grand Mean	4.28	0.94

Table 4.4 indicates that the respondents score the mean of 4.08 in flow factor. In terms of this factor, feeling absorbed in the activity (4.20) and feel the control of the game (4.20) scores the most at even, followed by believing that interacting with mobile games is fast and responsive (4.15), thinking that playing mobile games can test their skills (3.97), and playing mobile games are challenging (3.88).

Table 4.4 Mean response of flow

	Mean	Standard Deviation
During a gameplay, I was intensely absorbed in the activity	4.20	1.01
When playing a mobile game I do not feel any control in the game	4.20	1.13
Playing mobile games provides a good test of my skills	3.97	1.13
Playing mobile games challenges me to perform the best of my ability	3.88	1.24
Interacting with mobile games is slow and tedious	4.15	1.09
Grand Mean	4.08	0.75

Table 4.5 indicates that the respondents score the mean of 2.76 in norm factor. In terms of this factor, schoolmates influences the most with mean (2.80), followed by coworkers (2.75), and friends (2.74).

Table 4.5 Mean response of norm

	Mean	Standard Deviation
My friends believe that I should play mobile games	2.74	1.15
My coworkers believe that I should play mobile games	2.75	1.17
My schoolmates believe that I should play mobile games	2.80	1.14
Grand Mean	2.76	1.04

Table 4.6 indicates that the respondents score the mean of 2.79 in perceived co-presence factor. In terms of this factor, mobile games help them to exchange opinions with other scores the most (2.87), followed by the likeliness of game presenting opportunities for the users to meet each other (2.81), and making people recognize and think highly of the users (2.70).

Table 4.6 Mean response of perceived co-presence

	Mean	Standard Deviation
As my game skill improves, others begin to recognize me and they think highly of me	2.70	1.13
Mobile games present proper ways for me to exchange opinions with others	2.87	1.16
Mobile games present opportunities to meet others	2.81	1.21
Grand Mean	2.79	0.95

Table 4.7 indicates that the respondents score the mean of 4.14 in attitude factor. In terms of this factor, finding the mobile games appealing scores (4.21) the most, followed by having perspective of them sound and look interesting (4.13), and thinking that it is a good idea to play mobile games (4.07).

Table 4.7 Mean response of attitude

	Mean	Standard Deviation
Mobile games are not appeal to me	4.21	1.09
It would be a good idea to play mobile games	4.07	1.11
Mobile games sound and look interesting to me	4.13	1.05
Grand Mean	4.14	0.82

Table 4.8 indicates that the respondents score the mean of 3.02 in perceived usefulness. In terms of this factor, thinking that mobile games are not helpful with many things scores the most (3.43), followed by thinking that mobile games do not help with enhancing other abilities (2.88), and thinking that mobile games are useful (2.77).

Table 4.8 Mean response of perceived usefulness

	Mean	Standard Deviation
I think mobile games are useful to me	2.77	1.04
I think mobile games help me to enhance my ability to do something else	2.88	1.06
I do not think mobile games help me with many things	3.43	1.28
Grand Mean	3.02	0.84

Table 4.9 indicates that the respondents score the mean of 3.97 in trust for mobile games. In terms of this factor, having a trust in mobile game companies that always provide good quality games and services (4.35) scores the most, followed by having a trust in the payment system (4.10), having a trust when giving personal information (3.75), and thinking that mobile games are trustworthy (3.68).

Table 4.9 Mean response of trust

	Mean	Standard Deviation
Mobile games are trustworthy	3.75	1.30
I trust the payment system when download/purchasing game applications and in-game items	4.10	1.22
I trust mobile games when giving them personal information	3.68	1.38
I trust mobile games from the companies that have been providing good quality games and services	4.35	1.14
Grand Mean	3.97	1.00

Table 4.10 indicates that the respondents score the mean of 4.38 in customer preference for mobile games. In terms of this factor, playing mobile games based on their scheduled (4.60) claimed to have the best score, followed by playing the game that fit with lifestyles (4.55), and playing the game based on its learning curve (4.00).

Table 4.10 Mean response of customer preference

	Mean	Standard Deviation
I like to play mobile games that fit with my lifestyle	4.55	1.09
I play mobile games based on my time schedule	4.60	1.24
I play mobile games based on its learning curve (whether it takes too much time or not)	4.00	1.19
Grand Mean	4.38	0.88

Table 4.11 indicates that the respondents score the mean of 3.71 in perceived cohesion. Based on this factor, thinking that it is a good idea for players to act as a cohesive unit (4.00) scores the most, followed by expecting to have same goals as other players (3.98), wanting to fit with the mobile game communities (3.53), and wanting to meet up with other players to set goals and targets (3.33).

Table 4.11 Mean response of perceived cohesion

	Mean	Standard Deviation
I like to feel fit with the mobile games community	3.53	1.27
I like when I have same goals with other players when playing mobile games	3.98	1.24
In general, it is a good idea for mobile game communities to act as a cohesive unit (work together with the same goals)	4.00	1.13
I like to meet up with other mobile game players and set goals and targets for ourselves	3.33	1.52
Grand Mean	3.71	1.05

Table 4.12 indicates that the respondents score the mean of 4.13 in intention to play. In terms of this factor, having the thoughts to play mobile games in the near future (4.23) scores the most, followed by having a tendency to download the game when there is an opportunity (4.02).

Table 4.12 Mean response of intention to play

	Mean	Standard Deviation
Assuming that I have an opportunity to download and play mobile games, I would definitely do it	4.02	1.16
I intend to play mobile games in the near future	4.23	1.22
Grand Mean	4.13	1.11

Table 4.13 indicates that the respondents score the mean of 4.35 in loyalty. Based on this factor, saying positive things about the games to others (4.52) scores the most, followed by recommending the games to others (4.37), repeating playing those games (4.32), and tending to return to the games that participated before (4.19).

Table 4.13 Mean response of loyalty

	Mean	Standard Deviation
I repeat playing those mobile games	4.32	1.15
I frequently return to mobile games that I participated before	4.19	1.30
I will recommend the games I played to others	4.37	1.09
I will say positive things about the games I played to others	4.52	0.94
Grand Mean	4.35	0.90

Table 4.14 presents the mean responses in each of the factors in descending order. From the mean responses, customer preference (4.38) scores the highest, followed by loyalty (4.35), perceived enjoyment (4.28), attitude (4.14), intention to play (4.13), flow (4.08), trust (3.97), perceived cohesion (3.71), usefulness (3.02), perceived co-presence (2.79), and norm (2.76).

Table 4.14 Grand mean response in each of the factors

	Grand Mean
Customer preference	4.38
Loyalty	4.35
Perceived enjoyment	4.28
Attitude	4.14
Intention to play	4.13
Flow	4.08
Trust	3.97
Perceived cohesion	3.71
Usefulness	3.02
Perceived co-presence	2.79
Norm	2.76

4.3 Reliability Test

This is the test of the overall consistent of a measure. In this part Cronbach's alpha was used as an instrument to conduct the reliability of the measures, as to make sure that the questions used were reliable. Note that factor analysis was not constructed due to the fact that the questions taken from the past literature reviews were already grouped together by the prior researchers. Cronbach's alpha test is enough to answer that the questions have internal consistency or not.

Table 4.15 Cronbach's alpha score

	Reliability statistic	
	Cronbach's Alpha	No of items
Perceived enjoyment	.865	5
Flow	.722	5
Norm	.889	3
Perceived co-presence	.749	3
Attitude	.712	3
Usefulness	.701	3
Trust	.803	4
Customer preference	.717	3
Perceived cohesion	.824	4
Intention to play	.833	2
Loyalty	.816	4

Cronbach's alpha measures the internal consistency which is how closely related a set of items are as a group. It is considered to be a measure of scale reliability. (Bruin J., 2006). Cronbach's alpha value of more than 0.7 is considered to be acceptable. Table 4.15 shows the results for reliability testing. The highest score is norm ($\alpha = 0.889$) followed by perceived enjoyment ($\alpha = 0.865$), intention to play ($\alpha = 0.833$), perceived cohesion ($\alpha = 0.824$), loyalty ($\alpha = 0.816$), trust ($\alpha = 0.803$), perceived co-presence ($\alpha = 0.749$), flow ($\alpha = 0.722$), customer preference ($\alpha = 0.717$), attitude ($\alpha = 0.712$), and usefulness ($\alpha = 0.701$). All values of Cronbach's alpha is more than 0.7, therefore all constructs can be considered reliable.

4.4 Correlation Analysis

Table 4.16 Correlation

		Perceived enjoyment	Flow	Norm	Perceived co-presence	Attitude	Usefulness	Trust	Customer preference	Perceived cohesion	Intention to play	Loyalty
Perceived enjoyment	Pearson Correlation	1	.583**	.184*	.199*	.682**	-.024	.490**	.446**	.497**	.587**	.623**
	Sig. (2-tailed)		.000	.041	.027	.000	.794	.000	.000	.000	.000	.000
	N	124	124	124	124	124	124	124	124	124	124	124
Flow	Pearson Correlation	.583**	1	-.078	-.058	.611**	-.150	.502**	.356**	.563**	.582**	.606**
	Sig. (2-tailed)	.000		.392	.521	.000	.096	.000	.000	.000	.000	.000
	N	124	124	124	124	124	124	124	124	124	124	124
Norm	Pearson Correlation	.184*	-.078	1	.653**	.141	.516**	.075	.041	.226*	.143	.176
	Sig. (2-tailed)	.041	.392		.000	.118	.000	.409	.651	.012	.113	.051
	N	124	124	124	124	124	124	124	124	124	124	124
Perceived co-presence	Pearson Correlation	.199*	-.058	.653**	1	.149	.567**	.205*	.135	.324**	.214*	.238**
	Sig. (2-tailed)	.027	.521	.000		.098	.000	.022	.135	.000	.017	.008
	N	124	124	124	124	124	124	124	124	124	124	124
Attitude	Pearson Correlation	.682**	.611**	.141	.149	1	.013	.468**	.465**	.464**	.542**	.585**
	Sig. (2-tailed)	.000	.000	.118	.098		.882	.000	.000	.000	.000	.000
	N	124	124	124	124	124	124	124	124	124	124	124
Usefulness	Pearson Correlation	-.024	-.150	.516**	.567**	.013	1	-.050	-.149	-.010	.096	.042
	Sig. (2-tailed)	.794	.096	.000	.000	.882		.581	.100	.908	.288	.640
	N	124	124	124	124	124	124	124	124	124	124	124
Trust	Pearson Correlation	.490**	.502**	.075	.205*	.468**	-.050	1	.481**	.545**	.574**	.672**
	Sig. (2-tailed)	.000	.000	.409	.022	.000	.581		.000	.000	.000	.000
	N	124	124	124	124	124	124	124	124	124	124	124
Customer preference	Pearson Correlation	.446**	.356**	.041	.135	.465**	-.149	.481**	1	.436**	.359**	.525**
	Sig. (2-tailed)	.000	.000	.651	.135	.000	.100	.000		.000	.000	.000
	N	124	124	124	124	124	124	124	124	124	124	124
Perceived cohesion	Pearson Correlation	.497**	.563**	.226*	.324**	.464**	-.010	.545**	.436**	1	.564**	.498**
	Sig. (2-tailed)	.000	.000	.012	.000	.000	.908	.000	.000		.000	.000
	N	124	124	124	124	124	124	124	124	124	124	124
Intention to play	Pearson Correlation	.587**	.582**	.143	.214*	.542**	.096	.574**	.359**	.564**	1	.724**
	Sig. (2-tailed)	.000	.000	.113	.017	.000	.288	.000	.000	.000		.000
	N	124	124	124	124	124	124	124	124	124	124	124
Loyalty	Pearson Correlation	.623**	.606**	.176	.238**	.585**	.042	.672**	.525**	.498**	.724**	1
	Sig. (2-tailed)	.000	.000	.051	.008	.000	.640	.000	.000	.000	.000	
	N	124	124	124	124	124	124	124	124	124	124	124

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 4.16 shows the correlation coefficient between each of the factors, however what this research is interested in is the last two rows at the bottom of the table, whether what correlation each of the independent variables have with the studied dependent variables (intention and loyalty). From Pearson correlation, it can be claimed whether if each of the independent variables affect dependent variables positive or negatively. “A correlation coefficient of +1 indicates that two variables are perfectly related in a positive linear sense, a correlation coefficient of -1 indicates that two variables are perfectly related in a negative linear sense, and a correlation coefficient of 0 indicates that there is no linear relationship between the two variables” (“Regression and correlation analysis”, 1996).

For the study of intention to play, there are 7 specific elements focused according to the hypothesis framework, perceived enjoyment ($r = 0.587$) had the highest correlation, followed by flow ($r = 0.582$), trust ($r = 0.574$), attitude ($r = 0.542$), perceived co-presence ($r = 0.214$), norm ($r = 0.143$), and usefulness ($r = 0.096$). Only perceived enjoyment, attitude, flow, and trust were statistically significant at 99% confidence interval. But the above including perceived co-presence were statistically significant at 95% confidence interval. This means as respondents rated higher score for perceived enjoyment, attitude, flow, trust, and perceived co-presence, the intention to play also increases in the same direction. However, perceived co-presence has the weakest positive relationship to the intention to play. The correlation can be claimed by this following equation: Claimed intention to play = f (perceived enjoyment, attitude, flow, trust, perceived co-presence).

For the study of loyalty, there are 5 specific elements focused from according to the hypothesis framework, perceived enjoyment ($r = 0.623$) scores the highest, followed by flow ($r = 0.606$), customer preference ($r = 0.525$), perceived cohesion ($r = 0.498$), and norm ($r = 0.176$). Only perceived enjoyment, flow, customer preference, and perceived cohesion were statically significant at 95% confident interval. This means as respondents rated higher score for perceived enjoyment, flow, customer preference, and perceived cohesion, the loyalty al increases in the same direction. The correlation can claimed by this following equation: Loyalty = f (perceived enjoyment, flow, customer preference, perceived cohesion).

When looking at Pearson correlation value between the independent factors, we can see that some of them have correlation more or less than 0. If they are too correlated to one another, it means that they are too common. When both factors are too common, one of them must be removed. In this research, the cut off value used is 0.75. As it can be seen, there is no correlation value above 0.75 between the independent factors meaning that all the independent factors are valid.



4.5 Linear Regression Analysis

Table 4.17 Linear regression analysis: model summary (intention to play)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.723 ^a	.523	.494	.78686

a. Predictors: (Constant), Trust, Usefulness, Attitude, Norm, Flow, Perceived co-presence, Perceived enjoyment

Table 4.17 shows model summary of linear regression analysis on intention to play. The R squared (explained variance) was 0.523 or 52.3% which means that the regression model can be used to explain the variances in intention to play up to 52.3%. The variances leftover 47.7% should be explained by other independent variables not included in this survey. The R squared was significant as reported by the F statistic in ANOVA table ($F = 18.139$, $p\text{-value} = 0.000$). This suggests that the model was significant and can be able to use for predicting intention to play as at least one variable can predict the claimed intention.

Table 4.18 Regression coefficient (intention to play)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	-1.033	.522		-1.978	.050	-2.067	.001
Perceived enjoyment	.269	.113	.228	2.382	.019	.045	.492
Flow	.416	.135	.284	3.090	.003	.149	.683
Norm	-.008	.094	-.007	-.082	.935	-.194	.178
Perceived co-presence	.050	.111	.043	.449	.654	-.169	.269
Attitude	.098	.128	.073	.767	.444	-.155	.352
Usefulness	.181	.109	.137	1.661	.099	-.035	.396
Trust	.314	.089	.284	3.529	.001	.138	.489

a. Dependent Variable: Intention to play

Table 4.18 shows the corresponding coefficients for each of the predictors. However, only perceived enjoyment, flow, and trust were found statically significant in predicting the claimed intention to play as p-value is less than 0.05 as highlighted. Looking at standardized beta we can see how strongly each predictor variable influenced the intention to play, the greatest impact falls upon flow (0.2837), followed by trust (0.2835) and perceived enjoyment (0.228). However, there are insignificant variables which can be removed from the model, hence stepwise method was then used.

Table 4.19 Linear regression analysis: model summary stepwise (intention to play)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.587 ^a	.344	.339	.89928
2	.672 ^b	.452	.443	.82541
3	.703 ^c	.494	.481	.79674
4	.721 ^d	.519	.503	.77964

a. Predictors: (Constant), Perceived enjoyment

b. Predictors: (Constant), Perceived enjoyment, Trust

c. Predictors: (Constant), Perceived enjoyment, Trust, Flow

d. Predictors: (Constant), Perceived enjoyment, Trust, Flow, Usefulness

Table 4.19 shows the model summary of the stepwise method, we can see that in model 3 when removing all the insignificant variables, R squared is reduced. This is due to the fact that there are less variables in the model, from 7 to 3. When moving from model 3 to model 4, the program added each of the variables one by one to see whether if the adjusted R squared increases or not. In this case, usefulness was added and the adjusted R squared was improved. And overall in model 4, the adjusted R squared is higher than the previous model, it went from 0.494 to 0.503. The new model explained 0.519 or 51.9% of the variances in claimed intention to play.

Table 4.20 Regression coefficients stepwise: final model (intention to play)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.177	.378		3.116	.002	.429	1.925
	Perceived enjoyment	.690	.086	.587	8.001	.000	.520	.861
2	(Constant)	.453	.377		1.202	.232	-.293	1.200
	Perceived enjoyment	.473	.091	.402	5.208	.000	.293	.653
	Trust	.416	.085	.377	4.880	.000	.247	.585
3	(Constant)	-.208	.420		-.495	.622	-1.041	.624
	Perceived enjoyment	.335	.098	.285	3.420	.001	.141	.530
	Trust	.333	.086	.302	3.852	.000	.162	.504
	Flow	.387	.123	.264	3.141	.002	.143	.631
4	(Constant)	-.976	.512		-1.905	.059	-1.990	.039
	Perceived enjoyment	.317	.096	.270	3.299	.001	.127	.508
	Trust	.332	.085	.300	3.918	.000	.164	.499
	Flow	.437	.122	.298	3.575	.001	.195	.679
	Usefulness	.214	.085	.162	2.514	.013	.046	.383

Table 4.20 reports the regression coefficients from the final stepwise model. Perceived enjoyment, trust, flow, and usefulness were the significant predictors at 95% confidence interval, where all of them have p-value less than 0.05. Considering the standardized beta, we can see that trust (beta = 0.300) is the most impactful predictor, followed by flow (beta = 0.298), perceived enjoyment (beta = 0.270), and usefulness (beta = 0.162). It can be seen that usefulness becomes significant, when perceived enjoyment, trust, and flow are included as significant predictors in the model, which can be explained that when doing stepwise method, it has get rid of multicollinearity problem which resulted from close correlation between usefulness and norm / perceived co-presence. The final regression model is constructed as: Claimed intention to play = -0.976 + 0.332 trust + 0.437 flow + 0.317 perceived enjoyment + 0.214 usefulness.

Table 4.21 Linear regression analysis: model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.744 ^a	.554	.535	.61713

a. Predictors: (Constant), Perceived cohesion, Norm, Customer preference, Perceived enjoyment, Flow

Table 4.21 shows model summary of linear regression analysis on loyalty. The R squared (explained variance) was 0.554 or 55.4% which means that the regression model can be used to explain the variances in loyalty up to 55.4%. The variances leftover 44.6% should be explained by other independent variables not included in this survey. The R squared was significant as reported by the F statistic in ANOVA table (F = 29.296, p-value = 0.000). This suggests that the model was significant and can be able to use for predicting loyalty to play as at least one variable can predict the claimed loyalty.

Table 4.22 Regression coefficient (Loyalty)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	-.083	.398		-.208	.836	-.870	.705
Perceived enjoyment	.249	.080	.258	3.101	.002	.090	.408
Flow	.433	.104	.360	4.156	.000	.227	.639
Norm	.122	.058	.141	2.095	.038	.007	.237
Customer preference	.275	.074	.268	3.728	.000	.129	.421
Perceived cohesion	.016	.071	.019	.227	.821	-.125	.157

a. Dependent Variable: Loyalty

Table 4.22 shows the corresponding coefficients for each of the predictors. However, only perceived enjoyment, flow, norm, and customer preference were found statically significant in predicting the claimed intention to play as p-value is less than 0.05 as highlighted. Looking at standardized beta we can see how strongly each predictor variable influenced the intention to play, the greatest impact falls upon flow (0.360), followed by customer preference (0.268), perceived enjoyment (0.258), and norm (0.141). However, there are insignificant variables which can be removed from the model, hence stepwise method was then used.

Table 4.23 Linear regression analysis: model summary stepwise

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.623 ^a	.388	.383	.71069
2	.691 ^b	.477	.469	.65965
3	.731 ^c	.534	.523	.62516
4	.744 ^d	.554	.539	.61466

a. Predictors: (Constant), Perceived enjoyment

b. Predictors: (Constant), Perceived enjoyment, Flow

c. Predictors: (Constant), Perceived enjoyment, Flow, Customer preference

d. Predictors: (Constant), Perceived enjoyment, Flow, Customer preference, Norm

Table 4.23 shows the model summary of the stepwise method, we can see that in model 4 when removing all the insignificant variables, R squared is slightly the same or if accounted for the exact value it was slightly reduced. This is due to the fact that there are less variables in the model, from 4 to 5. At model 4, the program added each of the variables one by one to see whether if the adjusted R squared increases or not. In this case, there is no variable that can be added to increase the adjusted R squared. However, the adjusted R squared of the overall model was increased, from 0.535 to 0.539, which states that the model has improved. The new model explained 0.554 or 55.4% of the variances in claimed intention to play.

Table 4.24 Regression coefficients stepwise: final model (Loyalty)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.783	.298		5.973	.000	1.192	2.374
	Perceived enjoyment	.600	.068	.623	8.799	.000	.465	.735
2	(Constant)	.865	.343		2.522	.013	.186	1.544
	Perceived enjoyment	.394	.078	.409	5.052	.000	.239	.548
	Flow	.441	.097	.367	4.540	.000	.249	.634
3	(Constant)	.245	.363		.675	.501	-.474	.964
	Perceived enjoyment	.300	.078	.311	3.856	.000	.146	.454
	Flow	.394	.093	.328	4.244	.000	.210	.578
	Customer preference	.277	.072	.269	3.837	.000	.134	.419
4	(Constant)	-.100	.388		-.259	.796	-.869	.668
	Perceived enjoyment	.250	.080	.260	3.148	.002	.093	.408
	Flow	.443	.094	.369	4.719	.000	.257	.629
	Customer preference	.279	.071	.272	3.940	.000	.139	.420
	Norm	.126	.056	.145	2.265	.025	.016	.236

a. Dependent Variable: Loyalty

Table 4.24 reports the regression coefficients from the final stepwise model. Perceived enjoyment, flow, customer preference, and norm were the significant predictors at 95% confidence interval, where all of them have p-value less than 0.05. Considering the standardized beta, we can see that flow (beta = 0.369) is the most impactful predictor, followed by customer preference (beta = 0.272), perceived enjoyment (beta = 0.260), and norm (beta = 0.145). The final regression model is constructed as: Claimed loyalty = -0.100 + 0.443 flow + 0.279 customer preference + 0.250 perceived enjoyment + 0.126 norm.

4.6 Discussion

This study aims to investigate the factors affecting player's intention and loyalty towards playing mobile games. Firstly, the analysis for factors affecting player's intention to play mobile games demonstrated that four factors out of seven factors are significant, which they can be used to predict player's intention. These factors are perceived enjoyment, trust, flow, and usefulness. What is interesting about the findings is the degree of impact for each of the factors as a predictor. The strongest predictor of intention to play is trust, followed by flow, perceived enjoyment, and usefulness. This explains that when people look at a mobile game, they consider trustfulness of the game or the company first, followed by the flow of the game, whether the game is enjoyable, and the usefulness of the game.

Trust: This study shows that trust is the strongest predictor of intention to play. This can be explained that Thai people tend to have trust issue when they come to selecting which mobile games to play. The result might occurred from their concern about credit card fraud, which is typical among Thai people (as we still use bank transfer as a majority of payment method), where some of the games are required to be paid. On the other hand, free-to-play games which their gameplay performance are significantly relied on in-app purchase might also face the same problem as well. It is possible that if the game is able to gain player's trust, other games launched from the same company is likely to have their trust as well. In contrast, the previous literature from Jimming Wu and De Liu (2007) states that trust does not have a direct effect on intention to play. This might be a result of the difference in culture between the samples taken. The survey subjects of the current study were the people who live in Thailand, on the other hand, Jimming Wu and De Liu did their survey in the eastern United States.

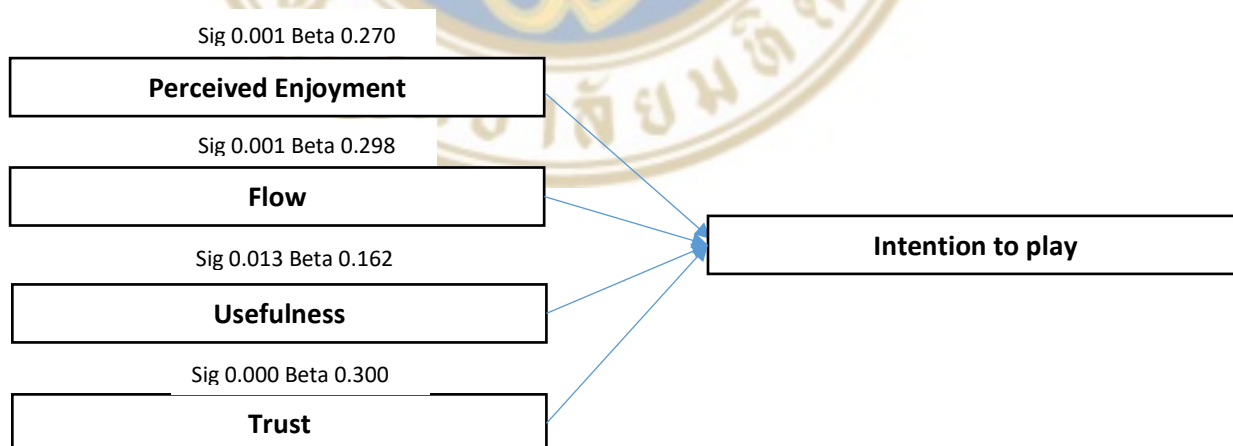
Flow: This study shows that flow is the next strongest predictor of intention to play from trust. The same result was shown in the previous study by Dong-Hee Shin and Youn-Joo Shin (2010) as well. Thus in the context of players in Thailand and Korea, people see flow as an important factor which affects their intention to play. This suits what the flow researchers suggest, which is to create a balance between providing enough challenge to keep the player from being bored, and making the game too difficult. (Stephanie Flodman, 2014). To emphasize more, people may seek for the game that "can be easy to learn and difficult to master". (Fran C. Blumberg, 2014).

Perceived Enjoyment: This study shows that perceived enjoyment is the next strongest predictor of intention to play from flow. This is due to the fact that enjoyment is the core feature to games in every platform, and is traditionally portrayed by games. This also implies that perceived enjoyment as an intrinsic motivation is one of the strong factors to explain player's intention in many countries. It is moreover important to identify the predictors of enjoyment, this is where more research is needed. The same result was shown in three of the previous studies by Nhi H. X. Dang and Phuong V. Nguyen (2015), Jimming Wu and De Liu (2007), and Dong-Hee Shin and Youn-Joo Shin (2010), which is backed up by the same reason that enjoyment is the core feature to games in every platform, no matter where they are launched.

Usefulness: This study shows that usefulness is the weakest predictor of intention to play. As the analysis stated that usefulness is significant when players have already looked through trust, flow, and enjoyment. This can be explained that, when people selecting a game from AppStore or Google Play Store, they may firstly consider, whether they can trust, like the flow, and perceive the enjoyment of the game, then they tend to look whether the game is useful to them or not. This can be the case of where the game is used in education, where it must be reliable and at the same time provide fun and educate those learners without being abandoned at the early phase. The same result was shown in the previous study by Dong-Hee Shin and Youn-Joo Shin (2010), where the game usefulness are significant to the users when it comes to selecting the games, however in those studies none of other significant factors have to simultaneously appear.

Insignificant factors: This study found that three of the factors, norm, perceived co-presence, and attitude are insignificant. In contrast, this contradicts with the previous studies done by Nhi H. X. Dang and Phuong V. Nguyen (2015) and Jimming Wu and De Liu (2007). It seems that norm is not significant when predicting player's intention, which means that their social environment does not affect their decision on whether or not they want to play the game. This may happen because of usual gaming behavior, where the players tend to choose to play only the games that they find comfortable with. It cannot be argued that different people are good at different things, this applies to the context of gaming, where some people are good at FPS (first person shooter) games and some people are good at RPGs (role playing games). As the

current study and the previous studies have shown that enjoyment is one of the key factors looked by the players, in terms of influencing their intention to play, it also means that they try to seek for fun out of the game. However, trying to change their nature of playing can cause stress, where they might get lost by following the crowd, and the game might not be fun and attractive to them anymore. (Stephanie Vozza, 2014). Co-presence is another factor that is found insignificant towards player's intention. This might be because of the culture difference, where Thai or Asian cultures tend to favor more introverted traits. (Cain Susan, 2013). People tend not to share a lot of their opinions, and at the same time, it might be difficult for them to receive recognition among the gaming communities. It can also be seen that Thai gaming forums are not as active as ones in the United States, where we have few hundreds of posts per forum and they have over ten thousands posts. These reasons can account for the feeling of unnecessary towards co-presence when choosing to play mobile games. When it comes to attitude, where the finding in this study contradict with the previous ones, it may be because attitude does not always predict behavior intention. "It is difficult to determine any one variable or explanation which accurately answers why attitude does not always predict behavior rather it is a combination of factors that lead to attitude-behavior inconsistency". (Muhammad Saifur & Rahman Nawhami, 2013).



The second analysis was done to determine factors affecting player's loyalty towards mobile games. It demonstrated that four out of five factors, perceived enjoyment, flow, customer preference, and norm, are significant which can be used to predict player's loyalty.

Flow: This study shows that flow is the strongest predictor of loyalty towards playing mobile games. Some of the studies have found that flow is significantly related to the intention to play, but this analysis is contributive by substantiating that the flow experience are crucial to the continuance of mobile gaming where the result also aligns with the study by Lan-Ying Huang (2011). The result suggests that people seek for the balance in terms of difficulty of the game, once they have found ones that provide enough challenge to keep them from being bored and are not overly difficult to master, they would continue to play the game as well as suggesting the games to other people. (Stephanie Flodman, 2014) (Fran C. Blumberg, 2014).

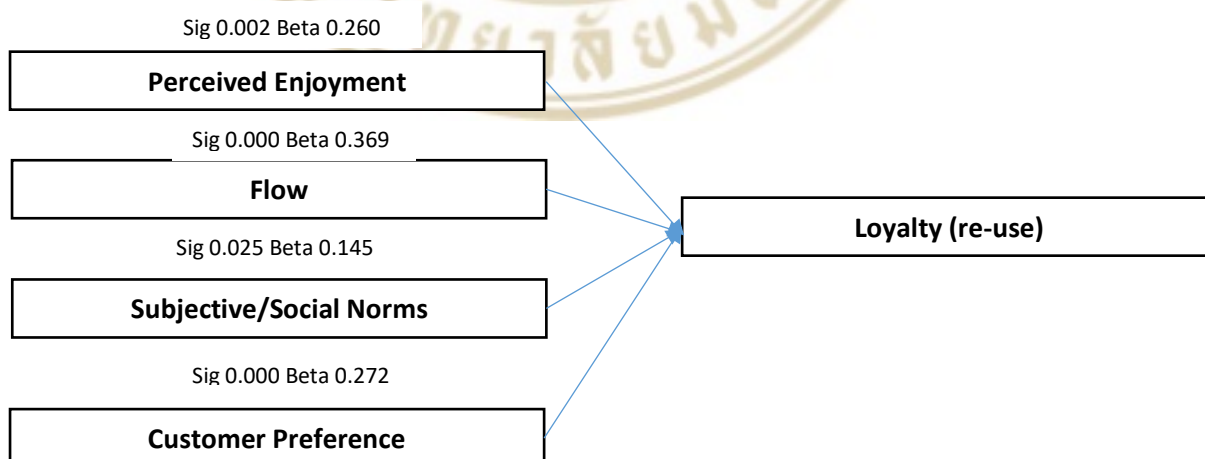
Customer preference: This study shows that customer preference is the next strongest predictor of player's loyalty, from flow. This refers to characteristics of players mainly separated by causal and hardcore gaming behavior. To emphasize more, this suggests that people tend to play mobile games that fit with their lifestyle. The players who have less time would decide to play games that require not so much effort, whereas people who have more time would decide to play games that have a higher learning curve. The result also fits with the descriptive analysis, where people choose to play mobile games during their free time at home or during their commute (stuck in traffic or if they have other people driving for them). This also provides the similar result to the previous study done by Chin-Lung Hsu and Hsi-Peng Lu (2007), where if the users have positive feelings about participating in the games, or in another word being able to play without feeling frustrated, they will likely re-participate.

Perceived Enjoyment: This study shows that perceived enjoyment is the next strongest predictor of player's loyalty, from customer preference. Consistent with Chin-Lung Hsu and Hsi-Peng Lu (2007) study, which indicates that perceived enjoyment directly influence loyalty. This can be explained as well that perceived enjoyment "plays a key role in explaining the customer's behavior of participating in an entertainment-oriented community" (Chin-Lung Hsu and Hsi-Peng Lu, 2007), in other word is the core feature of games. It also suggests that if the players do not perceive the

contribution as enjoyment, then they are unlikely to continue participating in that mobile games.

Norm: This study shows that norm is the next strongest predictor of player's loyalty, from perceived enjoyment. It is interesting that norm does not influence the intention to play, or playing the games suggested by friends or co-workers, as different people seek for different types of gameplay. However, if the game is played or selected, the players' loyalty can be influenced by their social community, likely to be their friends or co-workers in the same gaming community that have been playing the same game from the start. Having similar likes and taste among them, social norm can provoke each of them to continue playing the game for considerably a long period of time. The same result has shown from the previous study by Chin-Lung Hsu and Hsi-Peng Lu (2007), where leaders in the same game community as the users can have normative power to affect the user's participation.

Insignificant factor: This study found that one insignificant factor is perceived cohesion which align as the same result from the previous study done by Chin-Lung Hsu and Hsi-Peng Lu (2007). This may occurred similar to Co-presence, as the previous study was also conducted in Taiwan. Due to the culture, where Asian cultures tend to favor more introverted traits. Therefore, people tend not to seek for one another to work towards the same goals.



The interesting thing about the findings is that, enjoyment of the game is not everything when it comes to their intention, even though it has been a core feature of every game since its first invention. But what people considers the most is whether they can trust the game or the game's company or not. This is because people still have trust issue when it comes to online payment system and the game reputation of the company. Flow is another factor that has become more powerful as a predictor of player's intention than the enjoyment. The reason to this is that when there is no balance in the game, easily said being too easy or too difficult, it reduces the degree of enjoyment for players. Another uncommon thing is that usefulness is also considered by the players, other than educational purpose, if the games can improve player's ability in any perspective, the players will consider to play them.

However, when it comes to loyalty or the continuity of playing, enjoyment of the game is also not everything, the interesting thing is that people tend to seek for a great flow or a good balance as a game feature. This is because boredom is not allowed in the gameplay, if the goal is to keep the players playing. However, due to different gaming behavior and expertise between each person, they will have different definition of balance, and this is when their preference comes in. People who do not have a lot of free time would play casual games, which usually have moderate learning curve, whereas people who have a lot of free time would play hardcore games, which usually have steep learning curve (different degree of balance in each of the learning curve). Being said, the players will consider the games that fit with their lifestyle and behavior. Another unusual aspect is that when players have been playing for a while, they usually have their own group of players with same interests. Each of them can provoke each other to continue playing the game as well as to give positive recommendations to other people.

CHAPTER V

CONCLUSION AND RECOMMENDATIONS

This research aims to understand the factors affecting user intention to play and user loyalty towards mobile games. This chapter summarizes the main points of the research as well as including discussion of findings after using several research methodologies. It will also provide recommendations to those who might get benefits from this research, and address limitations as well as providing beneficial suggestions for those who want to conduct a further research in the future.

5.1 Conclusion

The aim of this research study is to identify the factors influencing mobile gamer's playing intention and mobile gamer's loyalty within Thailand. There is an essential need of understanding the behavior of mobile gaming consumers, both their intention and their loyalty. This is due to the fact that it is barely known how Thai gamers select their choice of mobile games, and even if they select one, there is a high possibility that the game will be abandoned after a few months, according to the past statistics. The result of the study aims to benefit Thai game developer and gaming companies who want to compete in Thai market. The hypothetical/conceptual framework is developed from the past literatures and studies, which were done in countries out of Thailand. With the first adapted framework, the hypothesis was that perceived enjoyment, flow, norms, perceived co-presence, attitude, usefulness, and trust is significantly related to the intention to play mobile games. In the second adapted framework, the hypothesis was that perceived enjoyment, flow, norm, perceived cohesion, and customer preference is significantly related to the player's loyalty.

The research method was to do online questionnaires, which the questions were developed and adapted from the past research studies as well. The data collection was done through “Typeform”, which is a platform for constructing an online survey. The surveys were distributed to random Thai people in Bangkok, as it is hardly impossible to know whether if those people have been playing mobile games or not, but with the screen questions, it allowed us to get valid respondents. The total sample size of the study was 150, but only 124 respondents were valid, as they play mobile games. The majority of the valid respondents were male, aged between 21-25 years old with bachelor’s degree and have income of 15,000 to 45,000. In terms of their gaming behaviors, they have more than 3 years of mobile gaming experience and mostly play action/adventure type of mobile games. They usually spend less than 6 hours per week on mobile games, which each session requires them less than 1 hour. The majority of respondents play mobile games at home.

The correlation analysis has shown that the strongest correlated factor to intention to play is perceived enjoyment, followed by flow, trust, attitude, perceived co-presence, norm and usefulness. However, only four factors, perceived enjoyment, attitude, flow, and trust were found significant. In the study of player’s loyalty, the correlation analysis has shown that perceived enjoyment has the strongest correlation, followed by flow, customer preference, perceived cohesion, and norm. Only perceived enjoyment, flow, customer preference, and perceived cohesion were found significant. Pearson’s correlation between the independent factors has also shown that none of them are too correlated, which all the independent factors are claimed to be valid.

In order to see if independent factors are significantly related to dependent factors, simple linear regression analysis was done. It has shown that four factors out of seven factors were found significant when it comes to player’s intention. These factors are perceived enjoyment, trust, flow, and usefulness. On the other hand, when the analysis was done to determine factors affecting player’s loyalty towards mobile games. It demonstrated that four out of five factors, perceived enjoyment, flow, customer preference, and norm, are significant which can be used to predict player’s loyalty. Table 5.1 shows the list of proposed hypothesis which are later rejected or accepted, based on data analysis done using simple linear regression.

Table 5.1 Hypothesis result

Hypothesis	Accept or Reject
Perceived enjoyment in mobile games is significantly related to intention to play mobile games	Accept
Flow in mobile games is significantly related to intention to play mobile games	Accept
Norm is significantly related to intention to play mobile games	Reject
Perceived co-presence in mobile games is significantly related to intention to play mobile games	Reject
Attitude towards mobile games is significantly related to intention to play mobile games	Reject
Usefulness of mobile games is significantly related to intention to play mobile games	Accept
Trust in mobile games is significantly related to intention to play mobile games	Accept
Perceived Enjoyment in mobile games is significantly related to loyalty to play mobile games	Accept
Flow in mobile games is significantly related to loyalty to play mobile games	Accept
Norm is significantly related to loyalty to play mobile games	Accept
Perceived Cohesion in mobile games is significantly related to loyalty to play mobile games	Reject

Table 5.1 Hypothesis result (cont.)

Customer Preference in mobile games is significantly related to loyalty to play mobile games	Accept
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In conclusion, it can be explained that Thai players tend to have trust issue when it comes to selecting their choice of game. The result might occurred from their concern about credit card fraud, which is typical among Thai people (as we still use bank transfer as a majority of payment method). It is possible that if the game is able to gain player's trust, other games launched from the same company is likely to have their trust as well. As flow is the next strongest predictor of player's intention, Thai players seek for the games that have balance between providing enough challenge to keep the player from being bored, and making the game too difficult. It is also applies to player's loyalty, as flow is also an important factor when it comes to keeping the players to play. However, the game must be enjoyable and fun as well, as it has been claimed to be one of the core features of the games. Even though, usefulness is the weakest predictor among the others, but people tend to look at it when already considering the rests, as some may be used in educational purpose. It also suggests that people would keep playing the game if it fits with their lifestyle. The players who have less time would decide to play games that require not so much effort, whereas people who have more time would decide to play games that have a higher learning curve. Having once played the game, norms will be another important factor that let the players continue with their participation, as due to similar likes and taste within the same gaming community, it can provoke each of the players to continue playing the game for considerably a period of time.

5.2 Recommendation

As Thai mobile gaming market nowadays has a great potential, and becoming a lot more competitive than in the past. It is important for newcomers, both mobile game developers and mobile game related business investors, to understand the six factors which should be considered in order to strengthen their products and increase

the probability of them becoming successful. The first factor is perceived enjoyment. The game should be fun and enjoyable. It should be able to distract players from stress and serious environment nowadays, may be for a short period of time. The game developers should provide a game with solid gameplay which is interesting, if it is not possible to come up with unique gameplay, it is an acceptable idea to create similar gameplay as the popular ones. The second factor is flow. Flow of the game is another important aspect, as the game must not be too easy or too difficult. They should create a balance between providing enough challenge to keep the players from being bored, and making the game too difficult. It is also a good idea to keep them immersed in the game by providing feedback about how close they are to their next goal, which drives them to continue playing. The third factor is customer preference. The game design should also match with the target customer group lifestyles. This means that if the target group are students, who usually have a lot of free time, then the gameplay can have steep learning curve. On the other hand, if the target group are adults, then they have less free time, casual games tend to suit them better. So it is a better idea to select target group first before making the game. The fourth factor is norm. The game also needs to be able to connect together players, as once the players found their suitable game, having known that they play with their friends will keep them playing the game longer. The game should go online, as to connect players. Moreover, it is a good idea to create platform as to allow players to exchange ideas, to stimulate growth of the game community. The fifth factor is usefulness. Even though usefulness of games are usually not considered to be very important by many people but, nevertheless it is a good idea that the game made can be useful in terms of making the players becoming better at doing something else. It will motivate as well as attract players that seek to gain useful tips from the games as it also can release dopamine from the players. Lastly the sixth factor is trust. It is crucial to give the players feeling of trust, concerning payment system and reputation of the game company itself. The game company or developers should create a policy to gain trust, by providing full refunds when problems occur. It is also a good idea to get certified, or getting showcase of social media statistics. This will assure user's buying decision as well as their intention to play.

5.3 Limitation

The research has some of the limitations. First of all, the scope of the respondents is quite small, which all the respondents taken were in Bangkok. This means that it does not cover all area which the results may not reflect true customer's needs. Secondly, the sample size itself is small, due to time constraint only 150 respondents were taken which may not accurately represent the whole population.

5.4 Future Research

For the future research, the study can focus on these significant and potential factors that influence player's intention and loyalty. This means that they can find factors that affect enjoyment, flow, trust, usefulness, customer preference, and norms. Understanding them in details will help the game developers and potential investors to come up with the game that is likely to be successful.



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