

# **ADULT'S SOCIAL ENGAGEMENT THROUGH DIGITAL GAME**



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**A Dissertation Submitted in Partial  
Fulfillment of the Requirements for the Degree of  
Doctor of Philosophy (Communication Arts and Innovation)  
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**ADULT'S SOCIAL ENGAGEMENT THROUGH DIGITAL GAME**  
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## ABSTRACT

<b>Title of Dissertation</b>	ADULT'S SOCIAL ENGAGEMENT THROUGH DIGITAL GAME
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The study titled “Adult’s Social Engagement through Digital Game” utilized the mixed methods research methodology combining qualitative and quantitative methods which emphasized on the qualitative study. The research examined middle aged adults and over to answer the five research objectives: 1) to study adult’s game playing behaviors, 2) to study motivations driving adults in playing digital games, 3) to examine adult’s engagement with games, 4) to study adult’s engaging with other gamers through digital game, and 5) to study communication process in creating social engagement of adult gamers through digital games.

The study comprises of two phases. The qualitative study employed the in-depth interview method to collect data from 32 informants. In addition, a focus group interview of 4 participants was also conducted. The second phase is a quantitative study, wherein data was collected from 402 respondents.

The research findings regarding game playing behavior indicated that most of the middle-aged adults spent 1-2 hours a day playing games. Mobile or smart phone is the popular game device among. In terms of game types that adults prefer to play, it is found that adults like to play puzzle games the most. This is followed by role playing games (RPG), simulation, and strategy games accordingly. The findings regarding motivation indicate that the strongest motivation from player is entertainment motivation ( $\bar{x}$  equals to 3.17, SD equals to 0.673) while achievement is the most important motivation originated from game ( $\bar{x}$  equals to 3.17, SD equals to 0.949) The research also found that the process of social engagement creation comprises of 7 stages, which are motivation to play game, immersion of game engagement, communication via game activities, emotional sharing, creating group communication channel, doing collective activities outside game world, and construction of new

social group beyond the game arena. As a result of the social engagement process it comes up with five different groups of adult game players who have their own types of social engagement: ‘Solo player’ with ‘Game engagement without social engagement’ type, ‘Pseudo solo player’ with ‘Limited social engagement’ type, ‘Local guild player’ with ‘Closed social engagement’ type, ‘Online guild player’ with ‘Virtual social engagement’ type, and ‘Social player’ with ‘Real social engagement’ type.

The research findings could be used for guidelines in the development of government policies to develop the potential for senior citizens. Game technology could be used to improve the physical, mental, and social health. In terms of the game business, the examination of game playing behavior and engagement of adults and gamers’ society would enable game and business development. This would help in the creation of games based on the true understanding of adult consumer behavior.

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## **CHAPTER 1**

### **ADULT'S SOCIAL ENGAGEMENT THROUGH DIGITAL GAME**

#### **1.1 Background and Research Problem Significance**

Digital Games today are considered a highly popular entertainment on par with the film and music industry (Pöyhtäri, 2016). It is estimated that about 2.5 billion people play games. Report from Newzoo (2018) demonstrated that the games market has grown significantly. The global games market in 2018 has estimated value of 137.9 billion US dollars. This is a 13.3% growth compared to the previous year. The Asia-Pacific Region has the highest market share of 52% with a value of 71.4 billion US dollars. In 2019 Thailand has the 19th highest value in the world at 667 million US dollars. (Newzoo, 2020)

The popularity of digital games globally has caused concern regarding the impact of playing games among children and youths. This includes health problems from spending too much time playing games. Others believe that games cause aggression and violence, while others say it promotes isolation (Stiff & Bowen, 2016). However, there are other researchers, who view games positively.

There are numerous studies that have examined digital games and its impact. The studies examined both positive and negative effects on children and youth. For instance, some studies examined the relationship between playing video games and increased violence and aggression (Anderson & Warburton, 2012; Hasan, Bègue, Scharkow, & Bushman, 2013); analysis of teenage game addiction (Biggins, 2009; Schmitt & Livingston, 2015); researched about health effects (Männikkö, Mendes, Barbosa, & Reis, 2014); games for education (Alaswad & Nadolny, 2015; Lai, Lee, Jong, & Hsia, 2012); and study of the social relationship from playing games (Colder Carras, 2015). This group of studies are focused on the examination of the group of children and youth.

However, gamers are not limited only to children and youth. There are also first jobbers, who number more than children and youth. There are also middle-aged adult players aged between 40-60 years. (This study would focus on adults or middle-aged adults.) Statistics show that the number of gamers increases every year. Newzoo conducted a study in 13 countries in 2017 and found that games ranged in age from 36-50 years (28%). About 15% of the gamers are aged between 51-65 years. Together the total 43% of the gamers from 2.3 billion people around the world. (Newzoo, 2017) This is considered a fairly high number. In Thailand there are 18.3 million gamers, of which 21% are aged between 36-50 years. This number is of interest to game production companies because they have a high purchasing power. They are successful in their life and work, thus having stability (Watanasart, 2010). In addition, the global trend towards an ageing society including Thailand, drives the preparation of the elderly to enter this phase in order to improve the quality of life for senior citizens. Thus, they can be happy in this digital era. Therefore, it is interesting to study the use of digital games to improve the quality of life for the elderly. Digital games are not just focused on children and youth, consequently, it plays a role in the life of people of all ages.

#### 1) Adults and Playing Games: From Traditional Analog Games to Digital Games

In the past people met in society, in games, and during play. These activities have been used to create entertainment and build relationships. Games in the traditional sense are dependent on the relationship between the action skills, intelligence, and perseverance. Sometimes, it is grouped together with sports and traditional games, which have entertainment activities for a long time. It creates happiness, entertainment, and enjoyment as well as link experiences with society for players (Bootraginaree, 2014).

Techatheerapreeda (2014) presented that, traditional games suitable for adults and the elderly included chess, bridge, or less intense sports such as petanque, tossing horse shoes, dancing, and golf. The key is playful competition and socializing. There are many games, which were popular among children, that promote socialization by having multi-players. These include board games and card games such as Monopoly, Snake and Ladders, and UNO. In academic terms, these games are known as analog

games (Trammell, Torner, & Waldron, 2016). One popular game among the elderly Chinese is Mahjong, which helps to stimulate eye and hand coordination as well as provide socialization opportunities (Tsang, Wong, & Gao, 2016).

The situation today is shaped by rapid technology changes in terms of telecommunications and communications. This has led to the world envisioned by McLuhan (1994, p. 3), “As electrically, contracted, the globe is no more than a village.” The world has entered the Economic and Social Digital Era, where technology has converged. Daily life is infused by the Internet of Things. The Internet and online social network have played significant roles in inevitably changing the lives of people in society.

A survey of information technology and communications use in households (2017) revealed that in the past 5 years, Thais aged 50 years and above have the trend to increase usage of the Internet by 3 times. It increased from 6.6 % in 2013 to 18.2% in 2017 (The Thai Elderly Situation 2017). Social media has the role as the center for communication among friends and family members. It has served to build the relationship between people of different generations (Sanjit, 2017). The Facebook study conducted by Hootsuite (January, 2018) found that 4.4 million accounts belonged to people aged between 45-54 years. There are 3.2 million accounts belonging to people aged over 55 years from the total 51 million accounts in Thailand.

When considering only the entertainment and social relationship activities among middle-aged and elderly in the digital era, games and traditional games such as board games, card games, or analog games have inevitably been replaced by technology. On-line and off-line games have not replaced one another totally. However, technology has a bigger role in helping to build and synergize physical, mental, and social benefits.

Some of the studies that examined how playing digital games helped to develop physical, mental, and social capabilities for the elderly such as the study of table poker in creating the social environment online for the elderly (Shim, Baecker, Birnholtz, & Moffatt, 2010) and application of relationship in games to encourage learning in adults (Whitton, 2011). Local studies include Buasri (2015), who found

that digital games could help reduce stress while Aroonsiwagool (2015) conducted an experimental study by creating a game that stimulated the muscles of the elderly.

Game technology is another channel for modern communications in the digital world. It encourages playing games from any place. It promotes the growth of communities and societies in the virtual world that allows conversations and exchanges through joint interests. The identity of players is recreated within the society of on-line game players (Klangthong, 2016). Playing on-line or off-line games among youths, teenagers, and first jobbers creates a different society in the Internet world. These people communicate with each other as they play, exchange experiences, and common interests utilizing group communications through society (Sirinantana, 2016).

Studies regarding communications and digital games in Thailand include the work of Piemyoosuk (2007), titled, The communication behavior in online game playing. The researcher studied the communications in terms of engagement of players while playing on-line games. The study was conducted among teenagers, who played on-line games in the on-line game store. However, there are no studies in Thailand that examine game playing behavior among those who are middle-aged and above. In Thailand there are no studies that examine communications through digital games especially in terms of relationships in society. Thus, this is an interesting for additional study.

## 2) Social Relationships in Middle-aged Group

When people enter the middle-age (above 40 years), they experience physical changes resulting from deterioration of various systems in the body. This happens gradually over time. In terms of society, middle-aged people serve as the link between the people of the older generation and new generation. Oftentimes, the people in this age group play the role in facilitating the relationship in the family. They are also in charge with the development of society and advances in their career. Thus, it is found that middle-aged people work hard to support their family sometimes losing touch with their friends. As a consequence of long years of work, they have gathered additional experiences. They might feel bored with their daily life. Especially those who are in the retirement age, when they turn 60 years, they lose their leadership role in their work. In the family they also have a smaller role. They become only

dependents in the home. In addition, they also have fewer social roles. The elderly is slowly distanced from society. Some even lose their self-confidence because they have lower memory effectiveness. They also have less physical capabilities and reduced ability to help themselves. There are research works that confirm the benefits of eating well, exercise, and brain training. Regular brain training would help to reduce the deterioration of the body and brain (Chularut, 2005). Digital games have become another communications channel that have been used for brain and knowledge development among children and adults.

However, despite being isolated from society both adults and elderly still need to have a society to belong to. (Havighurst, 1963) explained that the elderly need and are interested to join activities with others just like those in the middle-aged group. They want to feel valued and need activities that are suitable for their age. The elderly need to be happy and satisfied with their life.

There are many studies that confirm this such as the work of Panitchop (2003). The researcher found that satisfaction in entertainment activities are derived from social relationships and quality of life. This is in line with Sawangmek (2005). The research found that the elderly was most satisfied with entertainment activities that build social relationships. Foreign research includes the work of Park (2009), which found that friendship among the helpers and the elderly plays an important role in life satisfaction among residents in the center. Social participation or creating social relationships reinforce the importance in the mechanism of 'social engagement' (Johnston, 2018). This is one of the most important keys to successful aging, together with the two other tools which are 'good health (no severe illness)' and 'effective physical and mental performance' (Rowe & Kahn, 1997).

Social engagement is defined as the relationships formed in society that encompass physical (meeting) and emotional (feelings towards others and community). This is opposite of social isolation (Park, 2009). Foreign and Thai research view social engagement as important components in maintaining physical and mental health for the elderly (Khamkhong, 2010; Park, 2009; Tomaka, Thompson, & Palacios, 2006).

When the aforementioned concepts are considered with aging society problem, entertainment and social activities could be developed for the elderly. They need to

have the opportunity to meet and connect with others in society. They should not isolate themselves. In the present day, digital technology such as smart phones, tablets, or computers should be used to connect people. Satararuji and Sithipongpanich (2018) studied the use of digital technology among people aged over 55 years in Thailand (sample size 1,200 respondents). It is found that most adults used digital technology for entertainment so that they won't be lonely (67.67%). They use it to foster relationships with people in family (54.75%). In terms of digital games, the literature review (Osmanovic & Pecchioni, 2016; Vella et al., 2019), it is found that it could foster relationship among people in the family and with those, who play the same game. These research works show that the elderly can return to society once again. However, the definition of society has changed from its original meaning.

### 3) Adults, Virtual Society, and Game Technology

In the Digital Era, virtual society overlaps with regular society. Connection is made through social media on smart phone applications or on-line games. Virtual society is part of on-line games as virtual communities. Gamers interact with one another through online gaming systems, which is considered as computer-mediated communication (CMC). When there are many players, a community would be formed online (Klangthong & Satararuji, 2017). The relationship is formed in the virtual society as in the real world. Thus, it became a complex issue for examination in research. Issues for study included social engagement in the on-line game such as game engagement based on the Flow Theory (Csikszentmihalyi, 2013) led to the development of other constructs.

Various foreign studies that examined adults and elderly usage of technology in games based on the concepts such as motivation to play game (B. De Schutter & Malliet, 2014; Osmanovic & Pecchioni, 2016; Sherry, Lucas, Greenberg, & Lachlan, 2006) and research on the development of social relationship online (Osmanovic & Pecchioni, 2016; Vella et al., 2019). These studies found that relationship building in families among people of different generations through playing on-line games together. Thai research works focused on the creation of application development for the elderly (Aroonsiwagool, 2015; Preeyawongsakul, 2011); development of on-line game psychology (Boonlaet, 2017); and behavior, motivation, and on-line marketing (Ratanapimol, 2017; Srisinthara, 2018). Other studies focused on the interaction in

on-line games such as the research by Boonmee and Nedpogaeo (2018). However, currently, there are no studies that examine the social relationship in adults or the elderly in terms of the virtual society in on-line games as well as communications in creating social relationships. These topics are of interest for further examination because it would help to develop means in adapting games for the elderly. This would be useful in the application for improvement in the livelihood for the elderly and other groups.

In the society of on-line and off-line gamers, the statistics reveal a significant number of adult gamers as mentioned in the previous section. These adult gamers would eventually enter the elderly stage. They have already adapted themselves to the digital society and virtual society. Therefore, it is interesting to examine adult gamers and their social relationship through digital games, and use the research result as a guidance for other adults and elderly groups to develop social skill. The study chooses to examine the game playing behavior, motivation in game playing, social relationships through gaming, relationship with the game, and process in development of social relationship. The researcher has studied the elderly game players as well as examining the understanding of social relationship of adult players of digital game.

The results of this study should be beneficial to the adults, who would enter the elderly stage, and the elderly, with the aim in creating social relationships in addition to entertainment. This would reduce their feeling of loneliness, which would be beneficial for the government agencies, who could use the findings for application in the development of games for improving various skills to suit adults. It should encompass physical, mental, and social development. Finally, this includes business benefits that could use the research findings to create games to serve adults in a suitable manner.

In the online society, there are both positive and negative consequences. Positive consequences include entertainment, glow, and social participation of the elderly. Negative consequences include fraud that might result in financial losses and health problems from playing too much games. The research findings should benefit adults, the elderly, and various agencies that are involved with the care and development of senior citizens. This would increase their understanding of the characteristics and engagement with on-line games among adults through better

understanding of on-line gaming society. This would lead to increased literacy, protection, and knowledge to prepare the elderly for a perfectly happy life in the senior society that would be eventually arriving.

## **1.2 Research Questions**

The research questions of the study titled, Adult's Social Engagement through Digital Game, are as follows:

- 1) What is the behavior of playing digital games among adults?
- 2) What is the motivation driving adults to play digital games?
- 3) How do adults engage with digital games?
- 4) How do adult gamers engage in social relationships with other players?
- 5) What are the characteristics of the communications process in creating social relationships among adults in digital games?

## **1.3 Research Objectives**

The research objectives of the study titled, Adult's Social Engagement through Digital Game, are as follows:

- 1) To study adult's behavior of playing digital games.
- 2) To study the motivation driving adults to play digital games.
- 3) To study the engagement of adults in playing digital games.
- 4) To study adult's formations of social engagement through digital game.
- 5) To study adult's communication process in creating social relationships through digital games.

## **1.4 Scope of Research**

The study titled, Adult's Social Engagement through Digital Game, examines the phenomenon of digital games among adults, who are aged over 40 years to the elderly. The scope of the research is designed as follows: 1) behavior and motivation of adults in playing games; 2) social relationships in real society and virtual society at the individual and group level through playing games; 3) development of the social

relationships in playing games at the individual and group level among adults; and 4) communication process for creating social relationships through playing games.

### **1.5 Definition of Terms**

Digital game is defined as the game developed on the software program in the digital platform. There are communications through the use of audio and visual elements. It is played with the use of devices such as arcade gaming, console, personal computer, portable computer, and smartphone. This study defines digital games as the same as video games, game technology, computer games, and electronic games. The type of games used in the study include puzzles, role playing games, simulation situation games, and strategy games. These include Candy Crush, Pokémon Go, ROV, Homescape, and Hayday.

Achievement component is defined as the achievement from playing games such as progressing through the levels, effectiveness of game characters, or the competition with other players.

Action-directed engagement is defined as the action or management of situation constructed in the game such as the core of the game or main interest of players in the game.

Adult, middle-aged adult is defined as male and female aged between 40 – 60.

Advocacy is defined as the communications when individuals or groups in order to achieve the objective is influencing other individual or group members for agreement.

Affective engagement is defined as the emotional or feelings that could either be positive or negative such as excitement in playing the game.

Behavioral engagement is defined as the behavior in cooperating and participating on various issues such as means or strategy in playing the game to win.

Closed social engagement is defined as the social interaction and game playing behavior, where players form groups with their acquaintances, with the goal to play games together and might compete with other groups.

Cognitive engagement is defined as the thinking process, development of knowledge, and understanding in regards to a certain issue such as understanding and knowledge about a specific game.

Collective Action is defined as the group action that happens with people who cooperate or rely on one another. This includes the decision in game strategy that is followed by all members in the group.

Communication at Engagement Process is defined as the communications that result in the creation of the relationship building process, which includes conversations, recommendations, and interactions.

Dialogue is defined as the interaction through communications for learning together. This results when the two parties in the conversation have thoughts in the same positive direction.

Entertainment is defined as flow or relaxation that is removed from the boring daily routine.

Environmental-directed engagement is defined as the interest in physical and geographic aspects in the game without interest in the competition.

Experience is defined transfer of common feelings to people in other groups. The experience is not limited to individuals. Experiences in social relationships can be transferred to other members in the group such as sharing experience and strategies in playing the game with members in the group.

Game engagement is defined as the interaction in the digital game, which is comprised of relationship with the environment in the game, relationship with the social environment in the game, relationship with characters in the game, and relationship with playing or actions in the game.

Game engagement without social engagement is defined as the social interaction and game playing behavior of the individual player with no group and have no game mission with other players.

Game immersion component is defined as the passion in the game or being immersed in the world of the game such as creating new characters with new stories in the game with other players or using the online environment to avoid thinking about powers in the real world.

Group engagement is defined as the relationship and interaction at the group level. This is presented in the form of behavior such as group operations, group participation, and group identity resulting from common understanding and identification. This includes the common understanding that leads to group agreement. In this research, this means the formation of groups that have a common goal in playing games.

Individual engagement is defined as the intensity of the interaction of feelings and experiences between individuals and their goals.

Information seeking is defined as the search of information that impacts the individual or society to answer questions or for learning purposes.

Intention is defined as the readiness of members in the group to express certain behaviors such as the agreement and voluntariness of group members in joining in game activities or other issues that lead to group action.

Interaction is defined as the form of communications or repeated communications that result in changes as time progresses.

Limited social engagement is defined as the social interaction and game playing behavior of the individual player with no group but has a game mission with other players.

Local guild player is defined as the player, who form groups with their acquaintances, with the goal to play games and compete with other groups.

Motivation from game is defined as needs, motivation, or desire that results from the game played. This serves to stimulate continuous playing of games. It is the motivation that includes achievement component, social component and game immersion component.

Motivation from player is defined as the need or motivation or desire resulting in the decision to play digital games. It is comprised of motivation in the dimensions of entertainment, personal relationships, personal identity, and information seeking.

Motivation for playing games is defined as the need or motivation or desire resulting in the drive to achieve success in playing digital games. In this study motivation is classified into two types, which are motivation from player and motivation from game.

Off-line game is defined as digital games that can be played without Internet connection. The player can download the game into the computer or smartphone to play it.

Older adult or elderly is defined as male and female aged over 60 years, which is based on the Senior Citizens Act of 2003.

On-line game is defined as digital games that need to be played with Internet connection.

Online guild player is defined as the player, who form groups with players, they have not known previously with the goal to compete with other teams or successfully complete missions. The groups would discuss about the game content. However, there is no interaction about topics outside of the game.

Orientation is defined as the values of group culture that is derived from the blend of a variety of views from members in the group. This is the setting of regulations for members in the group to live together.

Participation is defined as the intense participation of group members with a certain goal that leads to playing the game together as a team.

Personal identity is defined as the understanding of self, resulting in the creation of self-identity through the values held by individuals.

Personal relationship is defined as the relationship that shows comradery such as among friends and family.

Pseudo solo player is defined as the individual player, who has no group but has joint mission with other players.

Real social engagement through digital game is defined as the social interaction and game playing behavior, where the player form groups with players, they have not known previously, with the initial goal to compete with other teams or successfully complete missions. Later their relationships are strengthened and discuss topics other than the game and might have activities that transcend the boundaries of the game.

Self-directed engagement is defined the relationship with the role taken by players or won in the game. The players can choose to modify personality, clothing, or weapons of their characters.

Social component is defined as the relationship with other players in the game such as providing assistance, engaging in conversations, and forming teams.

Social-directed engagement is defined as the relationship with other players in the game, creation of network, or use of communication channels to connect players.

Social engagement is defined as the level of interaction that occurs between individuals or objects or situations. This might include the expressions of thoughts, feelings, and physical manifestations.

Social engagement through digital games is defined as the interaction between players in the game and out of the boundaries of the game.

Social player is defined as the player, who form groups with players, they have not known previously with the initial goal to compete with other teams or successfully complete missions. Later their relationships are strengthened and discuss topics other than the game and might have activities that transcend the boundaries of the game.

Solo player is defined as the individual player, who has no group and has no joint mission with other players.

Virtual social engagement is defined as the social interaction and game playing behavior, where players form groups with players, they have not known previously with the goal to compete with other teams or successfully complete missions. The groups would discuss about the game content. However, there is no interaction about topics outside of the game.

## **1.6 Significance of the Study**

1) In terms of individuals, the research findings would increase the understanding of the social engagement creation process among adult players. This could be used to develop guidelines for living in the modern society.

2) In terms of business, the research findings would provide the guidelines for businesses in the development of games that are suitable for adults, who have a high purchasing power and time to play games.

3) Theoretical contribution is based on the creation of new knowledge that could be disseminated in Thailand.

4) In terms of policy contribution, the research findings could be used for the development of policies in government agencies to develop digital games for the promotion of social relationships as well as the potential of adults and the elderly to better prepare them for the aging society in the digital era effectively.



## **CHAPTER 2**

### **LITERATURE REVIEW**

The study titled “Adult’s Social Engagement through Digital Game” utilized theories reviewed from relevant studies and documents to develop the research framework as follows:

- 2.1 The world of digital games
- 2.2 Adult development concept
- 2.3 Behavior and media exposure concept
- 2.4 Uses and gratification theory and motivation to play games
- 2.5 Social engagement concept
- 2.6 Game engagement theory
- 2.7 Communication in the process of social engagement through digital games
- 2.8 Relevant studies
- 2.9 Conceptual framework

#### **2.1 The World of Digital Games**

Digital games, electronic games, video games, online games, or offline games definition have a variety of definitions. For instance, Arsenault (2009) used the term video games to have the same meaning as digital games. Consequently, the game development process is done entirely in the computer. Video game or digital game can be classified as console game and PC game. Ma (2017) explained that digital game or electronic game require the interaction between humans and computers or other devices through various interfaces such as keyboard, mouse, and console with image and sound.

In this study, the researcher defines digital game to represent computer games in general, which is the same as video game, technology game, and electronics game.

In some instances, the word game would be used. Console game, online game, offline game, and mobile game are categorized as digital game.

Digital game has a history dating to 1948. Thomas T. Goldsmith Jr. and Estle Ray Mann, registered the “Cathode Ray Tube Amusement Device”, with patent number, 2455992. This is considered the starting point of electronic games, which have continuously evolved over time (Mitra, 2010) . Tennis for Two was developed in 1958 by William Higinbotham. This game has been accepted by most researchers as the first computer game in the world. It was produced in the analog system. It became the starting point of the game revolution to a truly digital format. In 1967 ADVENT, a text-based adventure game played on the mainframe computer, was developed. The development of this game led to the creation of the personal computer (PC) game market. At about the same time other digital games were created (Kirriemuir, 2006).

Based on this path of growth, digital game developers grew in numbers. However, they faced investment problems, thus limiting the commercialization of games. This changed with the game, Pong, which was developed and sold on the market in the name of Atari in 1972. At about the same time, the home video game console by Maxnavox Odyssey sold over a hundred thousand pieces in one year (Kirriemuir, 2006). From that point, the game business grew significantly. Today digital games have become a highly popular entertainment media comparable with movies and music (Pöyhtäri, 2016).

Games today are not played solely for entertainment. They have become a means for communications without physical meeting. In the world of the Internet, it is a tool that enables convenient and fast communications. This results in the gathering of gamers, thus becoming a social community of like-minded individuals. It applies to single player games, where the player plays against the game; multiplayer games, wherein multiple players can form teams to compete with one another in the game; and massive multiplayer games. This eventually become a new meaningful community on the Internet, known as virtual communities (Rheingold, 1993). The world of gamers reflect the characteristics that represent groups of people in the new social era, who can meet through playing games from anywhere in the world without coming together to play the game (Klangthong, 2016).

### **2.1.1 Virtual Communities in Games**

The development of the Internet technology has an impact on the definition of community. The Office of the Royal Society (2003, p. 368) defined 'community' as the group of people, who live together in a small society within the same geographic area and share common interests. However, today community is no longer limited to people, who live in the same geographic area. The new form of community is enabled through technology mediated communications. This type of community is called a virtual community, where in members may know or may not know each other. However, they can communicate through the use of words to convey their thoughts through the social network, without members having to meet face to face (Schuler, 1996). For instance, a community can be created among those, who play games on Facebook. They are connected from across the country, thus becoming a borderless society grouped together based on their shared passion for playing games.

Digital games have characteristics of a virtual community, where people come together in the Internet world in order to exchange their thoughts. Members engage through the network in the form of computer-mediated communication (CMC) through devices such as computers, laptops, and smartphones to access game software (Rheingold, 1993) without limitations in terms of time and location (Biggins & Udomruengkiat, 2008). Consequently, human-computer interaction (HCI) is used to control the game (Klangthong, 2016).

Virtual communities in games are categorized as fantasy (Yusof, 2008 as cited in Klangthong, 2016). The virtual community space is a response to human fantasy. It is also an alternative space for those, who wish to escape the real world. Games tend to enable players to engage with other players in an easier manner than in the real world. This is because players do not need to prepare themselves for engagement as in the real world (Biggins & Udomruengkiat, 2008).

An important component of the virtual community is the avatar, which is the representative of the player. These avatars come together and interact with one another by joining activities such as raiding a gym in Pokémon Go. Each of these characters may or may not reflect the real characteristics of the gamer. However, it is believed that most of the gamers would create an avatar that is similar to their character in the real world (Rodrigues & Mustaro, 2007). Meanwhile Klangthong

(2016) found that the environment in the virtual community both online and offline have a impact in promoting virtual communities in online games. When players feel that the interaction between the online world through avatars, is no longer sufficient, they would still yearn for communications that is not mediated in order to reduce uncertainty. Thus, the offline world is a crucial component supporting the growth of online games (Klangthong, 2016). Consequently, players expand their interaction to the offline world as well.

Creation of relationships in the offline world is important. Players would spend more time playing the game. This results from having their close friends playing the game with them. Most of their friends playing the game include those from school and those they know from playing other online games or meetings in game gatherings. They become friends, who play games together. This is a reflection of the importance of the relationships in the online and offline worlds. These relationships are strong resulting in players spending more time playing games. Eventually, it extends the length of the virtual community lifecycle. (Klangthong & Satararuji, 2017)

In the same vein the research of Boonmee & Nedpogaeo (2018), examined the virtual identity and social engagement on online social media. The research explained the relationship between gamers in four forms. The first is means in creating virtual community that have varied meanings in the same way they express themselves in the real world, where they can do so in many different ways. The second is in reality players can create identities that are the same or different from their real character based on the limitations of identity creation in the game. The third is the virtual game identity that attracts the initiation of relations that lead to social engagement on the online social network through the game system. The fourth is the engagement on online social media that results in the grouping of players into small groups that result in friendships. Should these feelings be satisfactory players would develop this relationship to the world outside of the game. They might increase communication channels that are beyond the game such as Line, Facebook, or exchange phone numbers.

The research titled, “Adult’s Social Engagement through Digital Game”, aims to examine the relationship between players and the game as well as among players themselves. For gamers, the virtual world proceeds together with the real world. Therefore, they must be studied together both the virtual and real world. Engagement with the game and the virtual world are variables studied in this research.

### **2.1.2 Game Genres**

The literature review revealed there are many ways to categorize games. Derryberry (2007) classified games into three genres, which are casual games, serious games, and advergames.

Casual games are played for relaxation. They have been solely designed for fun and entertainment. Some are designed for single players such as Solitaire or other games that have been pre-loaded in the computer to more complex ones with multiple players, which can be downloaded later. These games include Counter-Strike and Halo, which can be played on computers, consoles, or on mobile phones.

Serious games are designed for learning development in specific areas. These games have high expectations. Serious games are used to train military strategy, emergency services, or development of education in schools and universities. This includes human development games, which are also classified as serious games.

Advergimes are designed for advertising purposes. They could be entertaining and serious as well. In principle these games use persuasion strategies to promote products, brands, or political competitions. These games are developed for advertising purposes and used in marketing to introduce movies and television shows.

Grace (2005) classified games based on genre based on the storyline and characters just like the characteristics of a television series or movies as follows:

- 1) Drama is a game that tells the story about the sadness or disappointment such as Max Payne, an action game that relates the painful backstory of a killer.

- 2) Crime is a game that has content about crimes including police investigation such as Grand Theft Auto and GTA 5.

3) Fantasy is a game that tells the story about a world that is beyond reality such as fairy tales or magic. These games include Fable, Kingdom of Hearts, Lineage II, and EverQuest.

4) Horror & Mystery is a game genre that has scary and complex storyline. Characters need to try to survive a fearsome situation such as Resident Evil, War Z, Dead Island Epidemic, and Indigo Prophecy.

5) Science Fiction is a game genre that has content about science and the future such as Doom, Half Life, and Bounty Hound Online.

6) War and Espionage is a game genre that has content about war and crime such as Metal Gear Solid, Ghost Recon, Absolute Force, and Point Blank.

7) Western/Eastern/Frontier is a genre that has content related distinctly to culture of the east or west such as Red Dead Revolver, Ninja Gaiden, and Furinkazan.

In addition, Grace classified six online game genres based on the game play criteria including control and storyline.

1) Action is a game genre that includes fighting with the goal to beat the opponent. These games usually primarily present violence and sometimes include some sort of sports such as Doom, Metal Gear, Counter Strike, and Point Blank.

2) Adventure is the game genre that includes some exploration and search in order to solve some sort of mystery or survive in certain situations such as Myst, Syberia, Amnesia, Lost, and Daylight.

3) Puzzle is the game genre that requires solving certain problems or mysteries such as searching for words and moving objects such as Tetris, Minesweeper, Bejewel, Line Pop, and Candy Crush Saga.

4) Role Playing is the game genre that requires players to take on the role of characters in the set situation such as Baldour's Gate, Might and Magic, World of Warcraft, and EverQuest.

5) Simulation is the game genre that simulates a real situation for players to gain experience through playing the game such as The Sim Online, FIFA 3, and Gran Turismo.

6) Strategy is the game genre that requires skills in problem solving, planning, and strategy through the use of logic such as Command and Conquer, Age of Empire, Civilization, and Starcraft.

However, when considering the digital games in the market today. Many are designed to be overlap in many genres and types. Some of the games cannot be delineated in any specific category. Thus, many have come up with new categories as seen in various websites. One example is the article “The Many Different Types of Video Games & Their Subgenres” in Vince’s weblog (2018). Nine genres of games were identified, which are action games, action-adventure games, adventure games, role-playing games, simulation games, strategy games, sports games, puzzle games, and idle games. Each of these types of games can be further categorized into subgenres. Srisinthara (2018) examined digital games in Thailand with reference from the game selling platform such as App Store by Apple and Steam by Valve Corporation.

In this study, the researcher has defined digital game categories based primarily on Vince (2018) as presented in the following section.

#### 2.1.2.1 Nine Genres of Digital Games

1) Action Games are games where players take control and are the center of the challenge. Most of them are physical challenges that require the player to pass through the various levels. They can be further be classified into subgenres such as platformer games, shooting games, fighting games, beat-em up games, including survivor, battle royale, and rhythm games. Action games titles include Donkey Kong, Half-Life, Halo, Fortnite, Galaga, Space Invaders, Mortal Kombat, Street Fighter II, God of War, Castle Crashers, Metal Gear, Dishonored, Dance, and Dance Revolution Guitar Hero.

2) Action-Adventure Games incorporate two game plays. They usually require time to complete missions and pass various obstacles. Players need to use tools to fight and collect items. The main content of the game is exploration, solving puzzles, or treasure hunting adventure. Fighting is only part of the activities to support entertainment in the game such as The Legend of Zelda. In the survival horror subgenre, which is an action-adventure that has scary content such

as Resident Evil. In addition, there is the subgenre of Metroidvania, which have players pass through various levels are also in this genre.

3) Adventure Games are genres that require the player to engage with the environment and other characters in the game to accomplish missions and solve mysteries. This includes text adventures, which are the adventure games in the first era. Players had to input commands and interact with the machine. This later developed to become graphic adventures, visual novels, interactive movie, and real-time 3D. Such adventure games include Myst, Ace Attorney, Dragon's Liar, Shenmue, and Heavy Rain.

4) Role-Playing Games (RPGs) require players to take on the role of characters and complete various missions. This includes Massive Multiplayer online role-playing games (MMORPGs). These games enable players from around the world to play together in real time through engaging with each other to achieve common goals. They can also take turns in turn-based RPG. In addition, there are game subgenres such as tactical RPG, sandbox RPG, first-person party-based RPG, and Roguelikes. Examples of role-playing games are Dungeons & Dragons, Fallout, Pokémon Go, and Rogue.

5) Simulation Games are designed for players to try real experiences in simulated situations. They can be categorized as construction and management simulation, life simulation, or vehicle simulation such as SimCity, The Sims, Nintendogs, Tamagotchi, and Farmville.

6) Strategy games have been developed based on the traditional strategy board games such as chess. Players need to develop strategy and planning and be careful in order to triumph over the challenges in each level. Emphasis is on military games. Strategy games can be further divided into sub-genres such as 4X, which include four objectives namely explore, expand, exploit, and exterminate. There are also games such as real-time strategy (RTS), real-time tactic (RTT), turn-based strategy (TBS), and multiplayer online battle arena (MOBA). Players are divided into two sides and must work together as a team in order to plan a strategy to defeat the competitor's team based on the rules of the game. Examples of strategy games include Civilization, Starcraft, The Age of Empires, Command and Conquer, Fire Emblem, and Real War.

7) Sports Games is among the initial type of games, wherein the gameplay simulates sports wherein players compete in the computer including football, basketball, baseball, ski, and car racing. Most of the games require competitors to compete against the computer or other players. Sports games can be classified into the sub-genre such as racing simulator series, team sports, fictional sports (competitive games) and sports-based fighting. Examples of sports games include Forza, Arch Rivals, NBA Jam, FIFA, Overwatch, Team Fortress, and Fight Night.

8) Puzzle Games or Logic Games are designed for players to solve mysteries to pass each of the levels such as Tetris, Brain Age, Line Pop, and Candy Crush. In addition, this includes trivia games that use questions or pictures to test players' knowledge, or the ability to search for the hidden letters or pictures.

9) Idle Games are designed to be easy to play for gamers, who do not have that much time. This has the least engagement, wherein the player simply clicks a button or icon repeatedly. Clicking one button would allow the game to play on its own. The player does not have to do anything except occasionally updating it and wait to receive the reward such as Mario Party, Codehunt, Magic: The Gathering, Pokémon Card Game, and Minecraft. In addition, Vince grouped the games that have long been developed and later adapted to playing in the computer as Idle Games as well. This includes Casino or Card/Board/Tile game as well as educational games and exergames designed for exercise such as Wii Fit, Dance, Dance Revolution.

#### 2.1.2.2 Genre of Games and Characteristics in terms of Social Engagement

Granic, Lobel, and Engels (2014) presented the model to explain the comparison of characteristics of games in 2 dimensions, which are characteristics in terms of social engagement and complexity of game systems as presented in the following section.

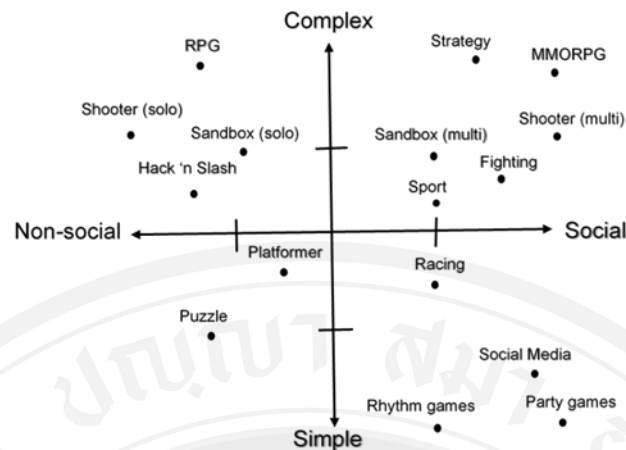


Figure 2.1 Model Presenting Social Engagement and Complexity of Game Systems

The model explains the differences of each genre of game based on the characteristics derived from the complexity of the game system and enabling of social interaction among gamers. The reference presented designates X-axis as the level of ability of interaction among players and Y-axis as the level of complexity of game systems that require planning and cognitive skills.

Simple games allow players to play in a relaxed manner. They do not need much cognitive and planning skills for the duration of playing the game. However, games that have complex systems, players need to have planning and cognitive skills throughout the duration of play. Games that have low social engagement can be played with a single-player, while games with high social engagement require playing as a team. Players need to plan together in order to succeed in the game, which can be categorized based on game genres in 4 types as presented in the following section.

Game genres that are simple and not complex, which have the characteristics of low social engagement include Puzzle and Platform.

Game genres that are complex, which have the characteristics of low social engagement include Hack 'n Slash, Sandbox (solo), Shooter (solo), and RPG.

Game genres that are simple and not complex, which have the characteristics of high social engagement include Racing, Social Media, Party Games, and Rhythm Games.

Game genres that are complex, which have the characteristics of high social engagement include Sport, Fighting, Sandbox (multi), Shooter (multi), Strategy, and MMORPG.

In this study, the researcher did not focus on any particular genre of game. However, the study examines the general condition and makes conclusions regarding game and genres popular among adults based on genres as the direction for the study.

### 2.1.3 Functions and Features of Games

In addition, to genres classification, researchers have attempted to seek answers regarding the characteristics and features of games that attract players. Wood, Griffiths, Chappell, and Davies (2004), examined the features of games, which yielded 13 components. These include sound, graphics, background and setting, duration of game, rate of play, advancement rate, use of humor, control options, game dynamics, winning and losing features, character development, brand assurance, and multiplayer features. King, Delfabbro, and Griffiths (2010), categorize these features and functions in a more tangible way as presented in Table 2.1.

Table 2.1 Summary of the Five-feature Model of Game Structural Characteristics

Feature Type	Sub-features	Example
<b>Social features</b>	<ul style="list-style-type: none"> <li>- Social utility features</li> <li>- Social formation/institutional features</li> <li>- Leader board features</li> <li>- Support network features</li> </ul>	<ul style="list-style-type: none"> <li>- In-game voice and text chat</li> <li>- Guilds/clans in MMORPGs</li> <li>- “Hall of fame” high score list</li> <li>- Internet forums, strategy guide</li> </ul>
<b>Manipulation</b>	<ul style="list-style-type: none"> <li>- User input features</li> </ul>	<ul style="list-style-type: none"> <li>- “Combos”, “hot keys”</li> </ul>

Feature Type	Sub-features	Example
<b>and control features</b>	<ul style="list-style-type: none"> <li>- Save features</li> <li>- Player management feature</li> <li>- Non-controllable feature</li> </ul>	<ul style="list-style-type: none"> <li>- Checkpoints, “quick-save”</li> <li>- Managing multiple resources</li> <li>- Scripted events, loading screens</li> </ul>
<b>Narrative and identity features</b>	<ul style="list-style-type: none"> <li>- Avatar creation features</li> <li>- Storytelling device features</li> <li>- Theme and genre features</li> </ul>	<ul style="list-style-type: none"> <li>- Choice of sex, race, attributes</li> <li>- Cut-scenes, mission briefing</li> <li>- “Role-playing”, “shooting”</li> </ul>
<b>Reward and punishment features</b>	<ul style="list-style-type: none"> <li>- General reward type features</li> <li>- Punishment features</li> <li>- Meta-game reward features</li> <li>- Intermittent reward features</li> <li>- Negative reward features</li> <li>- Near miss features</li> <li>- Event frequency features</li> <li>- Event duration features</li> <li>- Payout interval features</li> </ul>	<ul style="list-style-type: none"> <li>- Experience points, bonuses</li> <li>- Losing a life, restarting a level</li> <li>- Xbox 360 Achievement points</li> <li>- Increasing difficulty of levels</li> <li>- Gaining health, repairing items</li> <li>- Difficult “boss” at end of level</li> <li>- Unlimited replay ability of game</li> <li>- MMORPGs have no endpoint</li> <li>- Rewarded instantly</li> </ul>

Feature Type	Sub-features	Example
<b>Presentation features</b>	<ul style="list-style-type: none"> <li>- Graphics and sound features</li> <li>- Franchise features)</li> <li>- Explicit content features</li> <li>- In-game advertising features</li> </ul>	<p>for playing</p> <ul style="list-style-type: none"> <li>- Realistic graphics, fast music</li> <li>- Trademarked names, e.g. Mario</li> <li>- Violence, drug use, nudity</li> <li>- Real-life brands, sponsors logos</li> </ul>

**Source:** King, Delfabbro, and Griffiths (2010, p. 93).

Table 2.1 demonstrates the 5 groups of game features as presented in the following section.

1) Social features present social relationships in playing games. This includes the game play used in the communication with other gamers in both online and offline (stand-alone) games. Characteristics that build community requires the cooperation in order to compete among gamers. The role of the network is to support the social component as the arena for gamers to learn about the game. Players, who have experience, can pass their knowledge to others in order to gain social acceptance.

2) Manipulation and control features are defined as the physical interaction and control of their resources within the game. This includes game functions that are directly related to the power in the control of the player such as the record of progress in playing the game and effectiveness in managing large amounts of resources in real-time. In addition, this includes some of the characteristics of the game that the gamer cannot control, which depends on the player's experience. The situation that occurs in the game have been determined by the game designer.

3) Narrative and identity features are defined as the gamers' abilities in creating their identity or new identity in the world of the game, which is different from their real persona. Characters in the game create a new identity. The role of the

storyteller reflects, how the gamer has integrated themselves into the world of the game. In addition, the genre and story of the video game might be related to the attitudes and expectations of the gamers.

4) Reward and punishment features are defined as the rewards that gamers receive when they win or punishment when they lose in the game. This encompasses the various rewards that players would receive immediately once the mission is accomplished or failed. This feature is derived from gambling concepts applied to gaming such as near miss, event frequency, event duration, and payout interval.

5) Presentation features are defined as the aesthetics within the game that is realistic audio visual. This enhances the feeling of fun and excitement for gamers. Some games have content only for adults would include advertising. Some games are franchise from other games whereas the difference has an impact on the presentation of each game.

In this study the concept regarding the features of the game are used as the guideline for analysis of the adult engagement with the game. This includes the factors that affect the process in building of adults' social engagement in games.

#### **2.1.4 What Genre of Games do Adults Play?**

In foreign studies, researchers have examined the genres of digital games played by middle-aged adults. For instance, Zheng, Hill & Gardner (2013, as cited in Ma, 2017), indicated that elderly adults are generally categorized as casual gamers, who only play casually. The report from BBC UK (Pratchett, 2005) indicated that gamers aged between 51-65 years in England like to play games in the genre of puzzle, quiz, and board games. In addition, the master degree research of Ma (2017) titled, "Older Adult Gamers: Digital Game Genres and the Perceived Benefits of Gameplay", examined the genre and title of games played by middle-aged adults in Canada. The most popular games played can be classified in 6 genres, which are puzzle, card/board/tile, strategy, word, arcade, and sport. Thus, it can be surmised that there are a total of 14 genres that are played by middle-aged adults as presented in Table 2.2.

Table 2.2 The 14 Genres and Games Popular among Middle-aged Adult Gamers

<b>Types of Game</b>	<b>Examples</b>
<b>Arcade</b>	Angry Bird, Diamond Dash, Super Mario, Catch a Cat...
<b>Adventure</b>	Crow, Star Trek Fighters, Action Games, Alone...
<b>Fighting</b>	Kick Box
<b>Shooter</b>	Medal of Honor, Shooter Game, Halo...
<b>Simulation</b>	Farm Town, F1 Racing, Star Wars, Sin City...
<b>Role-Playing</b>	World of Warcraft, Diablo III, Dungeon Siege, Beowulf...
<b>Strategy</b>	Risk, Rummy Cub, Chess, Yahtzee...
<b>Puzzle</b>	Tetris, Sudoku, Solitaire, Hidden Objects...
<b>Word</b>	Scrabble, W.E.L.D.E.R., Spelling Puzzles...
<b>Trivia</b>	Trivial Pursuit, Password, Trivia Quizzes, Jeopardy...
<b>Sport</b>	Wii Bowling, Wii Sports, World Golf Tour (on Computer)
<b>Educational</b>	Dora the Explorer, Sustainability Games, Mathematics...
<b>Card/Board/Tile</b>	Mahjong, Bridge, Poker, Blackjack...
<b>Others</b>	Wii, Casino Games...

In Thailand there is no serious study in terms of the game genres played by middle-aged adults. Thus, the researcher has used the concept about digital games to develop the guideline for creating the questionnaire regarding game playing behavior of this group.

## 2.2 Adult Development Concept

Most psychologies divide adults into three major age groups. Young adults (20-40 years), middle-aged adults (40-60 years), and older adults (age over 60 years). Their outstanding characteristics are discussed in the following section (Chularut, 2005).

### 2.2.1 Three Adult Age Groups

Young adults (aged between 20-40 years) have reached full maturity. This is the fertile age and at the same time this group has the most developed emotional stability. It is an age, where people start to plan their life. They select their careers, friends, and life partner while learning to adapt to society around them. Psychologists believe that humans would reach the peak of their intelligence at the age of 25 years, after which it would decline. Therefore, young adults is the period, when people start their careers and are creative in doing effective work. This leads to the eventual success in their careers.

Middle-aged adults are those between 40-60 years old. This is the mid-point between young adults and older adults. The physical condition starts to slowly deteriorate. The nervous system starts to change. The ability to see decreases, however the impact on behavior and intelligence is still limited. In terms of the emotional development, people in this age group tend to be less aggressive and are more reasonable. Also, it is a period of hormonal changes people in this age might become more irritable, easy to anger, feel sad, and have problem sleeping. These symptoms, which are clearly exhibited, can be defined as menopause. People in this age want to go back and become young again because they are aware of the deterioration that is now part of their life. They would choose to dress to make themselves look younger. In addition, they experience feelings of stress from various problems and irritation from not being able to get things done.

In regards to social development, adults in this age often dedicate their time and effort to their work and family (Basseches, 1984, as cited in Chularut, 2005; Jung, 1971, as cited in Papalia, Olds, & Feldman, 2007). Thus, they are less connected to their friends. Middle-aged adults don't usually create new relationships with new

friends easily. Since they have been working for a long time they start to experience fatigue. In terms of mental capacity, middle-aged adults have declining numbers of brain cells. Thus, they might have memory and learning problems. Therefore, they should continuously train their brains in order to reduce the deterioration of the brain cells. Middle-aged adults have high levels of perseverance. They have good understanding of the situation and can manage inter-personal relationships well. Youth might not perform well in these areas due to lower level of maturity (Basseches, 1984, as cited in Chularut, 2005). Thus, if the middle-aged adults have prepared themselves well and make themselves adaptive, they should enter the older adult stage happily.

Older adults are those, who are aged over 60 years. At this stage there is clear deterioration in every aspect. Older adults are faced with challenges from health deterioration. They need to cope with these changes in order to continue living happily (Kuria, 2012). In addition, these physical changes are the result of deterioration of various bodily systems. In terms of mental health, some might develop depression because they are afraid that their children would leave them. They might pay less attention to the environment and are less interested about changes in society. When people enter this elderly stage, their role as the family leader also changes. They end up becoming residents or being only one of the family members. Also, their social roles also are reduced as a result they distance themselves further from society. This would impact their mental state, some of the elderly would feel sad. Furthermore, their ability to help themselves also reduces, thus reducing their confidence. They end up not daring to do activities with other people in society (Yodpetch, Patanasri, & Sakdaporn, 2017).

However, despite aging and the consequent reduction in status as well as social roles, older adults still have the same social needs as the middle-aged adults. Activity Theory proposed by Havighurst (1963) explained that the elderly have the need and interest in joining activities with their friends, society, and community. They want to feel that they have value. Therefore, it is crucial to create activities that are suitable for older adults. This would create happiness and satisfaction for the elderly and it is a matter that people around them should care about.

In this study, the goal is to examine middle-aged adults and older adults in regards to their development. This would be used in the discussion of all research findings in particular the game playing behavior and engagement with other players in the gamer's society, which would lead to better understanding of adult gamers.

### **2.2.2 Adult Personality Development**

Jung (1971, as cited in Papalia et al., 2007) explained that the development of the middle-aged adult is individuation. The focus is on the development of the self, which results in the harmony or combination of personalities to form the whole person. This includes caring about personal needs that might have been neglected since time was spent on family and career. Thus, towards the end of the middle-aged adult stage, people tend to pay more interest about themselves and spirituality that comes from the inside.

Based on the personality development theory posited by Erikson (1968), there are 8 stages of development. Erikson believed that personality develops throughout the life of an individual. This could be positive or negative depending on the experience and interaction with the environment in each life stage. Middle-aged adults are in the seventh stage, "Generativity vs Stagnation", and the older adults are in the eighth stage, "Integrity vs Despair".

Erikson explained that middle-aged adults are in the seventh stage, which has emphasis on caring and generativity particularly towards those who are younger. For instance, they might care for their children and grandchildren providing advice and transferring knowledge from their expertise. This also includes passing down traditions and culture (Sumalrot & Suksawat, 2015). When the development is positive, in moving on to the eighth stage, the individual would have a strong personality with integrity. On the contrary, if a middle-aged adult is in stagnation worrying only about their own interests, they would be unable to deal with emotional conflicts, which might lead to despair in the older adult age.

### **2.2.3 Features of Adult Learning**

Middle-aged adults and those who are older are different from other generations including in the area of learning new things. Knowles (1980, as cited in Clawson, 1997) explained that there are five features of adult learning as follows:

- 1) Adults have the motivation to learn when necessary. Therefore, the knowledge they need is dependent on the necessity for living as adults.
- 2) Adults have varied experiences. Their need to learn is not limited to subject-oriented topics but are more multidisciplinary.
- 3) Adults learn from past experiences, therefore learning that is most effective is related to adult experiences.
- 4) Adults have the innate need to lead their own life. Therefore, the effective learning should enable adults to make the choices of what they want to learn.
- 5) Self-identity increases in accordance with age, adult learning should consider the differences among individuals from topics about their way of life, time, location, interests, and learning methodology.

### **2.2.4 Aging Society**

Thai society is rapidly approaching the aging society based on the prediction that Thai population from 2010-2040. The Office of National Economic and Social Development found that by 2022, Thailand would become an aging society, which means over 20% of the Thai population would be aged over 60 years (National Statistics Office Thailand, 2017). The problem of an aging society means a lower birth rate. Most of the people in society would be the elderly, who would have to be more self-reliant. Changes in socio-economic conditions today drive changes in the family structure. From the extended family with more than 6 family members from different generations, families today are small families with 3-4 members known as nuclear family (Pitikultang, 2009). When children have to leave the home to work or study faraway, the elderly and middle-aged adults might have to live alone or only with their spouse at home. From a survey of the Thai population in 2017, it is found that 11.5% of the households have only elderly family members, which is an increase from 6.8% in 2007 (Thai Elderly Population Report 2017).

The literature review revealed that studies both in and outside of Thailand agree that society is an important component in maintaining the mental and physical health of the elderly (Khamkhong, 2010; Park, 2009; Tomaka et al., 2006). Successful Aging posited by Rowe and Kahn (1997) explained that there are three components that must work together which are no terminal disease, effectiveness in the physical and mental functions, and engagement in the enthusiastic outlook for life. This includes inter-personal interactions and participation in activities that are beneficial. Thus, it can be said that social engagement is an important aspect of successful aging. In the same vein, policy for Thai elderly health, explained that good health is not limited only to physical and mental health but it should extend to social and intellectual health. Health as defined by the National Health Act (2007) is the human condition that is complete in physical, mental, intellectual, and social health that are harmoniously integrated (Knowledge for Self-Care and Development of the Elderly, “Good Health”, Elderly Care Department, 2017).

When this concept is incorporated with the problem of the aging society, there is the drive to develop entertainment and social activities for the elderly to meet and create relationships with others in society. The purpose is to reduce isolation. Playing games is one of the entertainment activities that is an alternative in all meeting situations. Games provide entertainment together with development of social skills at the same time. Bob De Schutter (2011) believes that social interaction is the most important factor in playing games among the elderly. Digital games help the elderly use their free time effectively and happily. This includes both single player and multi-player, which helps to increase the effectiveness of perception and physical movement along with social connection (Nap, De Kort, & IJsselstein, 2009).

In the past most of the game research are interested in the negative effects on children and youth. For instance, the research of Tanboot (2010) studied the conditions and impact of game addiction in children in the Hadyai District, Songkhla Province. The study was conducted using in-depth interview of 38 youths aged no more than 18 years and 2 game shop owners. The research findings indicated that game addiction can be categorized in three issues. The first is the impact on children in terms of physical, mental, emotional, and social. The second is the impact on the family, since the children might interact less with the family, result in waste of money,

and disintegration of family harmony. The third is the impact on society, which leads to the deterioration of culture due to increased violation of the law and consumerism.

From the business perspective, the game market generally produces games aimed at children and teenagers. This leads to the illusion that digital games are suitable for youth only (Ma, 2017). Middle-aged gamers appear to be the consumer group that is forgotten by the market. Even researchers have forgotten to examine this topic regarding digital games and the elderly (Nap et al., 2009).

Today there is more awareness regarding the problems of the aging society. Thus, there are more research works about digital games and the elderly. The interest has spread to education and eventually the game industry. The positive role that digital games play in terms of physical, mental, and social aspects of the life of the elderly have increasingly become popular research interests (Kaufman, 2013).

An example of Thai research on the topic is Boonlaet (2017). The study examined the promotion of self-worth among the elderly, who have depression through online games. A total of 18 participants were selected to try playing an online game developed based on the theory for promoting self-worth for 8 weeks. They had to play the game 3 times a week for 15 minutes at a time. Evaluation was made based on the depression questionnaire designed by the Department of Mental Health. The results show that playing online games helps to reduce depression among the elderly (22.14%).

The researcher has decided to select middle-aged adults and above (over 40 years) as the target for this study. This is because adults this age have accumulated the necessary life experience in many aspects through long years of work, family experience, and are about to enter the older adult stage or retirement. It is a period of continuation that enables the understanding of the development of behavioral change in playing games and social interaction with gamers from middle-aged adults to elderly stage.

### 2.3 Behavior and Media Exposure Concept

The effort to seek the answers regarding the game playing behavior of middle-aged adults has led the researcher to use consumer behavior and media exposure theories to develop the guideline for the study.

Behavior has a variety of definitions. Sotanasatien (2007) explained that behavior expressed by individuals have the basis from knowledge and attitudes. Individuals express different behaviors resulting from different knowledge and attitudes. Thus, it can be said that attitudes control behavior (Pilantaowad, 2006). Janeweitprasert (2007) explained that behaviors express individual's adaptation to the environment, which can be observed.

Consumer behavior explained by Sereerat et al. (2003, 2009) is defined as the search for products or services, purchase, consumption, and subsequent evaluation. It is expected that products and services respond to consumer needs. Thamcharoen (1996, p. 2) explained that consumer behavior is the process of decision-making to use product or services as well as its evaluation. Wongmonta (1999, p. 31) explained that using behavior is the consumption of products by consumers include aspects such as location of consumption, how it was consumed, with whom it was consumed, and level of consumption.

When considering gamers as consumers, game playing is a form of consumption of products or services. Therefore, it could be surmised that game playing behavior of adult gamers is the decision to play games. This results in the access to the game, playing it, and its consequent evaluation whether it fulfills the needs or preference of the gamer. Game playing behavior is comprised of what type of game is played, where it is played, how it is played, with whom it is played, and how many hours are spent playing the game.

From the perspective of communication arts, digital games or computer games are considered as an information technology innovation. It is characterized as new media in line with the 16 criteria proposed by Logan (2010, as cited in Kaewthep & Chaikhunpol, 2013). It has two-way communication, easy to access and disseminate, result in continuous learning, easy to mobilize, and allow the receiver to modify the

content. Therefore, the study of game playing behavior needs to examine media exposure at the same time.

In the communication process, receivers have different exposure behavior to media depending on experience, attitude, emotions, and thoughts of the individual. Klapper (1960) explained that exposure to information follows three screening steps as explained in the following section.

Step 1: Selective exposure is the tendency for receivers to select or be attracted to information that are in line with their own existing opinions or understanding. They tend to avoid content that do not fit with their knowledge and understanding as well as existing attitude.

Step 2: Selective perception occurs when the exposure has occurred and the receiver has chosen to interpret the information based on the experience, understanding, attitudes, needs, and the physical and emotional state at that point in time.

Step 3: Selective retention is the final step, wherein the receiver has the tendency to remember the information that is congruent to their needs, understanding, and attitudes. They would keep this information as part of their experience for use in the future. At the same time, they tend to forget the information that is not in their interest and deny attitudes that conflict with their own.

Measurement of media exposure behavior requires the use of measurement tools, which has two parts - measurement of the time of exposure and frequency of exposure (McLeod & O'Keefe, 1972).

Behavioral analysis of the decision to play games based on media exposure explained that players choose among the numerous games in the market. This is based on their past experience in playing the game or knowledge about it. Then, they would then try to play the game. If they find that they like it and suits their taste or needs, the players would choose to remember that game or game genre to play it again later.

In this study titled, "Adult's Social Engagement through Digital Game" utilized the concepts based on consumer behavior and media exposure to develop the guideline for examining the game playing behavior of adults. The concepts have been adapted to develop the interview guide for the in-depth interviews utilized in the qualitative research.

## 2.4 Uses and Gratification Theory and Motivation to Play Games

Uses & Gratification Theory (U&G) is one of the important theories that examine media effects. Ruggiero (2000) explained that Uses & gratification theory is usually present at the birth of every new media such as the newspaper era, broadcast media era, and most recently Internet era. The development of computer-mediated communication has brought the revival of the U&G theory. The basic concepts of U&G theory that has been adapted to the new media would need to consider the concepts of interactivity, demassification, hypertextuality, and asynchronicity, which results from receiving the message at different times.

Research in the field of digital games usually utilized U&G theory as the basis for study. This is because this theory has concepts that are in line with the nature of new media, which has two-way communication and promote interactivity (digital games fall within this category). Media users, who are gamers, are active players since they choose to use the media and expose to information (Kaewthep & Chaikhunpol, 2013). This is in line with McQuail, Blumler, and Brown (1972), who explained that this theory gives importance to recipients, who choose the channel and information on their own. Gamers can choose what games they play freely. Thus, the most important variables in this framework are need and motivation.

Whitton (2010) explained that new media in the form of digital game surmised that there are three primary motivations in playing games. These are mental stimulation, social interaction, and physical challenge.

Mental Stimulation is the motivation that is connected to the feelings and emotions. Gamers have the need to play games that excel in mental challenges. These include problem-solving games, picture games, or puzzle games that provide mental stimulation.

Social Interaction is defined as the motivation to play with others or interact with other players. This might be in the form of competitions, cooperation, or being in the same location within the game. Players, who are motivated in this regard, tend to prefer multi-user gamers or games that require playing together as a team.

Physical challenge is the motivation to play games with the goal to win in physical terms, exercise, or need physical effort. These include computer games that require expertise in using both hands and eyes coordination.

Meanwhile Yee (2006) examined the motivation to play online games by developing 40 questions. These questions encompass the 10 motivations to play games, which can be categorized in three major components as presented in the following section.

- 1) Achievement components are comprised of the following:
  - (1) Advancement is the desire to increase power or increase status and wealth in the game.
  - (2) Mechanics is the interest in the game system and game play such as the optimization of convenience to increase the effectiveness of the characters in the game.
  - (3) Competition is the desire to defeat the game or other players.
- 2) Social components are comprised of the following:
  - (1) Socializing is the interest to assist and communicate with other players.
  - (2) Relationship is the desire to have long-term relationships with other players.
  - (3) Teamwork is the satisfaction in being part of the team effort.
- 3) Immersion components are comprised of the following:
  - (1) Discovery is the finding of new things that most of the players do not know of.
  - (2) Role-playing is the creation of interesting characters to create new content in the game together with other players.
  - (3) Customization is the interest to design the identity of one's character in the game.
  - (4) Escapism is the use of the online game environment to avoid thinking of problems in the real world.

Whitton and Yee studied the motivation to play games, which occur after the decision is made to play the game. Therefore, to examine the exposure to game media or decision to start playing the game Uses & Gratifications Theory can still be adapted

for use in this study. As McQuail et al. (1972) presented the interaction between individuals and media as reflected in four major types of receiver motivation presented in the following section.

1) Entertainment includes the need to avoid from (boring) daily routine or escape from problems. It is also the need for emotional relaxation, enjoyment of culture or arts, and spending free time in a useful manner.

2) Personal relationships are the expression of social empathy, which is the feeling of oneness with others, a topic of conversation to promote social interaction. Media is also used as a friend or used to connect with other friends, family, and society. It can be used to create social roles for the individual.

3) Personal identity is the use of media for self-understanding, examining the social truth or confirming existing beliefs, and searching for behavioral role models.

4) Information search is the search for information that might have an impact on oneself or society. The search for behavioral guidelines, recommendations, or opinions that could be used in the decision-making, answering doubts, or self-learning.

The research conducted by Wenner (1985) is another example that is in line with the concept developed by McQuail, Blumler, and Brown. Wenner studied the uses and gratifications of consumer of news, which can be classified into four groups. The first are those, who use news for reference such as following news to assist in decision-making. The second is the use of media to create connections between the information and society such as making conversations or use in persuasion. The third is the use of news to maintain the self-identity or reference the individual appearing in the news content. The fourth is the benefit for relaxation from emotional tension or escape from undesirable circumstances.

The literature review and adaptation of various theories, have led to the conclusion that the motivation to play games can be categorized into two broad types. First, is the motivation from the player, which is the motivation to start playing the game. The second is the motivation from the game, which leads to continuous playing. Thus, to ensure that these components align with the study, the researcher has

developed the motivation model for game playing into two types. First is the player's motivation to play the game and second is the motivation from the game.

Table 2.3 Game Playing Motivation Classification

Types/Subtypes of Motivation		Motivations
Player's motivation to play game	Entertainment	<ul style="list-style-type: none"> <li>- Avoiding from (boring) daily routine</li> <li>- Escaping from problems</li> <li>- Relieving stress or the need for emotional relaxation</li> <li>- Spending free time in a useful manner or kill time</li> <li>- Enjoying the culture or arts from digital games</li> </ul>
	Social relationships	<ul style="list-style-type: none"> <li>- Feeling of oneness with others</li> <li>- Using game as a topic of conversation to promote social interaction</li> <li>- Using game as a friend instead of playing with real person</li> <li>- Playing game to connect with other friends, family, and society</li> </ul>
	Personal identity	<ul style="list-style-type: none"> <li>- Using game to create new social roles (in a game society) for the individual.</li> <li>- Playing game for self-understanding</li> <li>- Using game to examine the</li> </ul>

Types/Subtypes of Motivation	Motivations
Motivation from game	social truth or confirm existing beliefs or searching for behavioral role models.
	Information seeking - Playing game to answer doubt or for own interest - For self-learning
	Achievement components - Advancement (to increase power, status, or wealth in game) - Mechanics (interest in game system, playing rules, and how to increase the effectiveness of game characters)
	Social Components - Competition (the need to challenge or compete with other gamers)
	- Socializing (the interest to assist and communicate with other players)
	- Relationship (the desire to have long-term relationships with other players)
Immersion Components	- Teamwork (the satisfaction in being part of the team effort)
	- Discovery (the finding of new things that most of the players do not know of.)
	- Role-playing (the creation of interesting characters to create new content in the game)

Types/Subtypes of Motivation	Motivations
	together with other players)
	- Customization (the interest to design the identity of one's character in the game)
	- Escapism (the use of the online game environment to avoid thinking of problems in the real world)

This study has used the motivation framework presented in Table 2.3 as the basis in the examination of adult gamers motivation in playing games.

## 2.5 Social Engagement Concept

The start of the academic definition of the term engagement is the pioneering work of Kahn (1990, as cited in Schaufeli, 2013) in the article titled, "Psychological conditions of personal engagement and disengagement at work" published in the Academy of Management Journal in the year 1990. Kahn presented the explanation for the terms 'personal engagement' and 'personal disengagement' through the comparison of behavior and intention that each individual expresses. This leads to the acceptance or denial of the role in work, which can be expressed physically, mentally, or emotionally (Kahn, 1990).

Erickson (2008, as cited in Anderson, Swenson, & Gilkerson, 2016) explained engagement as comprising of passion, commitment, and investment in differing levels. It can be said that liking leads to the desire to participate and become part of an organization. Kang (2014) explained engagement as the mediator that stimulates the thoughts of individuals leading to satisfaction and trust. This would be expressed as behavior supporting the organization such as positive word of mouth or organization loyalty.

In terms of health sciences, Park (2009) explained that social engagement is defined as the creation of social and emotional relationship with individuals and

community. This is the opposite of social isolation. Social engagement is important to the promotion of physical and mental health among the elderly (Baltes, 1996; Dykstra, 1990; Park, 2009). Johnston (2018) surmised that engagement is the mechanism that drives multi-directional relationships. This happens in conjunction with psychological and behavioral variables, which are connection, interaction, participation, and involvement. This mechanism has different impact at the individual, organization, and societal level.

Thus, it can be said that social engagement could be defined as the interaction among people or people with certain objects or situations. This might be expressed in terms of feelings, emotions, or physical actions. The word social is used to mean a small group of two or more people, who share a common objective.

The study of the engagement concept first focused on the explanation of engagement as a state. It was later that the studies focused on engagement as a process, wherein communication is involved at the individual and social level.

Johnston (2018) presented the concept to explain engagement at the individual level and at the social level through the communication process. In this study, the researcher has utilized this framework as the foundation for understanding engagement that adults have with games and society of gamers.

### **2.5.1 Engagement at the Individual Level**

The analysis of the states of engagement at the individual level is measured at a certain point in time. It is a binary relationship with an important characteristic residing in the intensity of the relationship. This includes the relationship and joint experience between the individual and the target, which impacts on both interpersonal variables and contextual variables. For instance, the relationship between company with employees, students with teachers, and gamers with the game they play.

States of engagement at the individual level is in the form of behavior (Fredricks, Blumenfeld, & Paris, 2004). It is comprised of cognitive, affective, and behavior.

Cognitive Engagement is defined as the intention, thought, and cognitive skills needed to develop knowledge and understanding of a certain issue. For instance, the knowledge and understanding of a particular game. Cognitive engagement starts with

interest in a particular topic leading to the examination or search of knowledge about it giving it additional complexity. This includes the attempt to develop more difficult skills leading to collection of more knowledge derived from experience and rationalization.

Affective Engagement is the emotional response that could be both positive and negative. For instance, it includes the feeling of fun, anger, willingness to support, or feelings of ownership. It reflects attraction or repulsion that comes from internal response to a particular issue. This leads to the requirement for motivation, interest, or worry. For instance, the elderly might know about a game, they might like or dislike it. After they have played the game and enjoyed it, they would evaluate it.

Behavioral engagement is defined as the cooperation or participation in various issues that include both voluntary and involuntary behavior, which results from cognitive engagement or affective engagement. Basic behavioral engagement includes clicking like or commenting the game's fan page.

Engagement process at the individual level involves the communication process. It would incorporate communication actions together through interaction, participation, and experience in order to provide information or stimulate engagement results. For instance, supporting a public organization to organize a news conference to disseminate information to the target. This could also include motivation through opinion leaders to promote the public to participate or provide support (Johnston, 2018).

Some of the researchers examining individual level engagement have attempted to develop tools to measure engagement. PytlikZillig et al. (2013) conducted a study and developed individual engagement measurement tools known as Varieties of Individual Engagement (VIE) Scales. There are 8 engagement dimensions, 5 of which are for engagement and 3 are for disengagement. These include 1) Active learning and Metacognitive Engagement, which is cognitive, thinking, understanding, and accessing information variable such as knowledge about game or seeking additional information; 2) Conscientious Engagement, which is a moral and acknowledgement, trust, and regulations such as the acceptance of game rules, gamers' social community standards, and transparent game playing; 3) Uninterested Engagement is the feeling of boredom, which is a disengagement

variable such as boredom so they choose not to play the game; 4) Creative Engagement is a variable that indicates the trend in creating new knowledge such as new characters, weapons, and items in the game that have never been done before; 5) Open-minded Engagement is the variable that indicates the openness to new knowledge, concepts, and activities created by the game and being open to new games; 6) Close-minded Engagement is the opposite of open-minded engagement since it is negative and indicates disengagement; 7) Angry Engagement is a negative variable that reduces learning and might result in closing the mind of gamers; and 8) Social Engagement is the variable that indicates social engagement and entertainment activities or exchanges of opinions through conversations with other gamers in the virtual world. Characters in the game might need to cooperate with others through inviting other players to successfully achieve missions.

This research utilizes the individual engagement level combined with the game playing engagement (explained in Chapter 2 topic 2.6.3) to examine research question 3 regarding adult engagement with digital games.

### **2.5.2 Engagement at the Social Level**

States of engagement at the social level is a relationship at the collective level, which can be presented in the form of behavioral expression. This includes group missions and participation with other members in the form of awareness and common intentions. Johnston (2018) concluded that social level engagement can be categorized into five topics as explained in the following section.

Orientation is the belief, values, or group culture that comes from the synthesis and combination of varied views from members in the group through communications. This includes dialogue, interaction, and connection such as the organization philosophy, which is derived from the synthesis of values and meanings from the participants perspectives in driving the organization (Taylor & Kent, 2014).

Experience is not limited to participation in activities or feelings about certain issues. Rather, experience is a small unit of analysis that includes people (knowledge, feelings, and personality), objects, and social environment. There is a transfer (common feelings to others) resulting in experiences that are not kept hidden at the individual level but expands to encompass space and time to social groups. Roth and

Jornet (2014) explained that experience is the social engagement that results from word-of-mouth to other members.

Participation means members seriously participate to create, develop, and negotiate results through the dialogic process with organizations that are at the core, which includes the member's expectations (Bishop & Davis, 2002).

Collective action results from group action resulting from those who have common interests, opinions, and identity, who voluntarily act together (Bimber, Flanagan, & Stohl, 2012).

Intention is the members' intent that reflects intrinsic motivation. It could be defined as the readiness of people in the group to express certain behaviors. Intention or readiness to take collective action is determined by pre-existing attitudes towards that particular activity (Fishbein & Ajzen, 2009).

The analysis of the engagement process at the social level indicates the level of interaction and discourses in working together as groups. The goal is to find common understanding that leads to the standpoint of the group. Johnston (2018) explained that the engagement creation process at the social level needs a catalyst, which is communication intervention. This is comprised of dialogue, advocacy, and interaction. Communication intervention is the mediator that results in the engagement at both the individual and social level.

From the literature review about engagement, the operational definition of engagement is widely used in social welfare operations. For instance, Brekke (1989) experimented on the model to create group orientation to create relationship with difficult to access customers. The success of engagement is defined as the number of times for joining activities and group activities satisfaction, helping to work and coordinate in the group.

Prior to this, tools for measuring engagement have been developed with ease. Engagement Quotient (EQ) was developed by Tryon (1985), which defined engagement as joining activities. Thus, EQ is defined by the number of customers, who join activities more than 1 time divided by the number of customers.

However, the group engagement measurement tools that have been developed have different limitations. Macgowan (1997) have incorporated the strong points of each of the previously developed tools to determine the engagement dimensions in the

same standard. To provide the appropriate research guidelines, the researcher has compared the engagement dimensions proposed by Macgowan and social engagement posited by Johnston, which results from people forming groups to play together as presented in Table 2.4.

Table 2.4 Explanation of Engagement Dimensions

<b>Engagement Dimension</b>	<b>Explanation</b>	<b>Examples</b>	<b>New Society based on Game Playing</b>
<b>Attendance (Participation)</b>	Attends group activity and stay until the end	Member arrives before the activity starts.	Game player joins game group.
<b>Contributing (Experience, Participation)</b>	Be part of conversation or group activity	Member shares opinion in the group conversation.	Members of game group exchange their experience and cooperate in playing game.
<b>Relating (Participation, Collective action)</b>	Member supports leader's work.	Member supports leader who is doing activity with other members.	Members of game group support group leader for game activities.
	Member has conversation with other and keep good relationship	Member supports other members to keep good relationship.	Members of game group contact each other via game's communication channel or other channels regularly.
<b>Contracting (Orientation, Intention)</b>	Member agrees to group policy, activity, norm, and	Member accepts and follows group policy, activity,	Members of game group create group rules officially and

<b>Engagement Dimension</b>	<b>Explanation</b>	<b>Examples</b>	<b>New Society based on Game Playing</b>
	group direction.	norm, and direction.	unofficially and accept the group rules.
<b>Working on problems (Experience, Collective action)</b>	Member realizes and manages problems purposively. Encourages and supports other members to solve their own problems successfully.	Member tries to successful goal setting. Member encourages and support other members to solve their own problems.	Members of game group pay attention and support each other to solve problems about playing game or other problems

**Source:** Adapted from Macgowan (1997).

This research utilized the concept of engagement at the social level combining the engagement dimensions presented by Macgowan (1997) and social engagement presented by Johnston (2018) for the development of questions about social engagement among adult gamers.

## 2.6 Game Engagement Theory

For the game engagement literature review, the researcher has used the main concepts for analysis from Malone's game engagement concept, Flow theory and Flow zone, and Engaged-behaviors in digital gaming.

### 2.6.1 Malone's Game Engagement Concept

Malone (1980) conducted a study to examine the variables that lead to computer games engagement by presenting three components of games that lead to

engagement. These include challenge, fantasy, and curiosity. A later study conducted with Lepper a fourth component, control, was added (Malone & Lepper, 1987, as cited in Whitton, 2011). The four components are explained in detail in the following section.

1) Challenge in the game depends on the goals, wherein the end result cannot be anticipated. This challenge could be derived in many ways such as the level of difficulty and variety in the game, level objectives, hidden information, and randomization.

2) Fantasy is beneficial in terms of cognitive skills and feelings. It affects the design of the environment structure in the game. Malone further categorizes fantasy into two groups, which are extrinsic fantasy and intrinsic fantasy. Extrinsic fantasy is the game environment that changes depending on the cognitive skill of gamers such as providing the correct or wrong answer to a question. Intrinsic fantasy includes the game environment and gamer's skill, which are inter-related. For instance, in the busting balloons game, the player needs to have the skill to anticipate the distance. When one of the balloons is hit, it would result in changes in the intrinsic fantasy. This makes the game more interesting than those that rely on extrinsic fantasy.

3) Curiosity is the desire to know. The game environment should not be too complex or too easy. It should be in equilibrium, with consideration of the player's skill. Games should have a story that is surprising so that it would stimulate curiosity. This can be further categorized as sensory curiosity and cognitive curiosity. Sensory curiosity is the adding of light and sound in the game to make the game interesting. Cognitive curiosity is the increasing complexity in the game, which requires players with more skills.

4) Control is the game's function in enabling players. It is comprised of contingency, the results of playing the game depends on the answers or performance of the individual, choice, when players have a variety of alternatives, and power, every player's decision has strong effects (Whitton, 2011).

The research titled "Adult's Social Engagement through Digital Game" is derived from the game engagement concept presented by Malone. It is used for the analysis of the characteristics of adults, who choose to play games.

### 2.6.2 Flow Theory and Flow Zone

Game researchers have tried to explain how gamers engage with computer games. For instance, Benyon, Turner, and Turner (2005) explained that engagement is related to a truly impressive experience. It serves to attract people for instance immersion with a good book or challenges in the game, which cannot be stopped. Csikszentmihalyi (1975, 2013) presented the Flow Theory, which explains that when an individual is immersed with a certain content, they would ignore all external stimulus. This is defined as the state of flow zone.

Many researchers have used Flow Theory posited by Csikszentmihalyi as the basis in understanding the impact of digital games. Flow is categorized in the field of positive psychology to examine happiness, creativity, subjective well-being, and fun. Suitable experiences would lead to happiness and impressiveness, which leads to the feeling of being part of that activity even if large sums of money have to be paid (Csikszentmihalyi, 2013). Under the concept of elements of enjoyment posited by Csikszentmihalyi, some of the games clearly present the factors that result in digital game engagement. Gamers in this state are considered being in the flow zone (Chen, 2007; Whitton, 2011) as explained in the following section.

- 1) A challenge activity requiring skill-the challenge that requires skill and expertise in rules of the game
- 2) Complete absorption in the activity-total immersion in the game
- 3) Clear goals-have clear goals
- 4) Immediate feedback-have immediate feedback
- 5) Concentration on the task at hand – have concentration on the mission assigned
- 6) A sense of control-skill of control and do not become worried when control is lost during game play
- 7) Loss of self-consciousness-forget self
- 8) An altered sense of time-having an altered sense of time

Although flow zone has been criticized that it does not occur in games rather it depends on the mental state of the gamer, while playing the game. Salen and Zimmerman (2004) and Draper (1999) criticized flow theory that engagement occurs when there is connection between the games, beliefs, and main goals held by

trustworthy gamers. However, it is accepted that this concept is a good start to explain game engagement.

In this study, the researcher used the concept, Flow zone, as the basis for the determination of the highest level of game engagement, while adult gamers are playing games.

### **2.6.3 Engaged-Behaviors in Digital Gaming**

Bouvier, Lavoué, and Sehaba (2014), has surmised behaviors of gamers reflect engagement that results from gamers through synthesis of previous studies from Calleja (2007), Lazzaro (2004), Poels, De Kort, and Ijsselstein (2007), and Yee (2006). They categorized engagement behaviors as engaged with environment, society, self, and activities in the game.

Environment-directed engaged-behaviors occurs when players are engaged with the environment or atmosphere in the world of the game. This means paying attention to the physical and geographic environment in the game world, which is not only focused on winning but also about seeking knowledge about that particular game.

Social-directed engaged-behaviors occurs when players are engaged with other players. In this condition, the game provides the opportunity to create and expand social relations with the objective to develop and maintain social network of players. Therefore, gamers would use varied communication channels to contact with other gamers.

Self-directed engage-behavior occurs when gamers are engaged with characters or avatar that they own in the game. Players would choose personalities and expressions as well as clothing of their own avatar. This type of engaged behavior might include making purchases such as clothing, weapons, and skills for the avatar.

Action-directed engage-behavior occurs when gamers are engaged with actions such as playing or means in managing the situation that has been determined by the game. The core of the game is the main attraction for the player. The gamer attempts to complete the mission to move on to the next level quickly.

The research titled “Adult’s Social Engagement through Digital Game” utilized the four dimensions from concept of engaged-behaviors to examine

engagement behaviors at the individual level (explained in Chapter 2 topic 2.5.1). This would be used as the guideline for the study of adult gamers engaged-behavior with the game.

## **2.7 Communication in the Process of Social Engagement through Digital Games**

Communication is one of the important processes in the creation of new social engagement through digital games. This study examines three types of communications which are group communications, communication for creation of social engagement, and communication in the digital games

### **2.7.1 Group Communications**

In the examination of group communications among adult gamers, the researcher selected the concept, which are group characteristics and online community as the basis for this study.

#### **2.7.1.1 Group Characteristics**

When people are gathered together in a certain situation, it is not necessarily a group. This is because these people might not belong to the same group. For instance, a number of people waiting to get into a store is not a group. Hartley (2002) explained that psychological groups need to have group membership. It has to have psychological significance. Having a number of people standing in front of a store is simply a collection of individuals at the same place at the same time.

Feldman and Arnold (1983) explained that group has to be the gathering of more than two individuals. The most important characteristics include having a common goal, interaction, and coming together to accomplish a common mission or expressing a common view on an issue as a result of influence within the group (Anawushsiriwongse, 1992; Pilantaowad, 1998). This relationship would help group members to stay together in an appropriate level (Katekham & Chatsupakul, 1979).

Group membership can be explained based on membership characteristics as follows:

1) Interaction: Group members interact with others in the group. The interaction would develop resulting in form or structure of people in the group such as communicating through Line group messages.

2) Perception: Group members are aware and believe that the group is real and call themselves as members of the group. This includes the development of the boundaries of the group such as demarking who are members and who are not.

3) Norms: Each group would have their own rules or standards that determine group behaviors. For instance, the creation of group apparel as a symbol for the group or rules not allowing sales post in the group Facebook page.

4) Roles: Each of the group members have their own roles such as the official title appointed by the group for instance group leader or group assistant. There are unofficial titles such as member in charge of providing information about the game to other members in the Line group, which is comparable to expert in the group.

5) Affective relations: Group members would develop emotional and affective relationships with other members. Affective relations of group members become an important driving force for the group for instance feelings of joint victory of the team in the RoV tournament.

6) Goals: The group has a common goal that is particular to the group such as the objective to defeat the competing team. In Pokémon, the common goal has the common goal to assist each other to defeat the boss together.

This study uses group characteristics as the foundation for the development of game society from playing alone, playing as a team, and forming the group. However, the understanding of being a group in the gamers' society, encompasses the dimensions of online games and community as well.

#### 2.7.1.2 Online Community

Community characteristics in the traditional sense is defined as the social relationships within a specified geographic location, wherein members feel ownership of that community (Stacey, 1969). In this global age, communications are done conveniently through Internet technology. The creation of community is no

longer limited to a particular geographic location. Members of the new community or virtual community or online community can interact through Internet technology more than face to face communication (Kindsmüller, Melzer, & Mentler, 2009).

Rheingold (1993, p. 6) defined virtual communities as “...social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace.”. Meanwhile Kindsmüller et al. (2009), observed that virtual communities and online communities are different in terms of definition. Virtual communities have a wide coverage encompassing all communities in the virtual world while online communities are more specific in nature. It only covers online communities that truly exhibit the characteristics of a real community, wherein all of the community members need to be aware that they are part of that community.

Preece (2009, as cited in Kindsmüller et al., 2009) posited that online communities are comprised of the following characteristics.

- 1) People, who have social interactions, in order to achieve desired objectives.
- 2) Have common objectives, goals, and interests.
- 3) Have policies or regulations as the guideline for practice among members in the online community.
- 4) Have computer systems as the facilitator for the interactions among members.

In this study, the online group characteristics and components concepts have been used to analyze the social engagement and discussion in terms of group communications. This is because groups that have been created among gamers are more complex than regular groups because they have to come together to play games through devices connected to the Internet.

### **2.7.2 Communication to Create Social Engagement**

In the literature review about communications in social engagement creation, it is found that research in this field is found in public relations. The examination of literature has been categorized to examine engagement creation including dialogue, advocacy, and interaction. Johnston and Lane (2017) stated in their study that

dialogue and advocacy are viewed as the structure that needs to work together in order to promote communication interaction among groups, organization, and business partners, which is the core of engagement .

#### 2.7.2.1 Dialogue

Theologian Martin Buber has been named as the father of the modern dialogue concept (as cited in Kent & Taylor, 2002). Dialogue has been defined as the attempt to accept the value of others, not view others as objects, or us vs them. It is the perspective that views people as being equal. In psychology, dialogue is presented through the work of Rogers (1957), which regards it as a client-centered psychology concept. This posits that there is a relationship between the patient and health care provider in order to achieve the best results. This is communications that facilitate understanding and are positive with no conditions. In terms of philosophy, dialogue is one form of ethical forms of communication. It is the center point between right and wrong, which is the same in concept as relational communication, which views dialogue as the encompassing ethics and fulfilling relationships (Kent & Taylor, 2002).

Thus, it can be said that dialogue is the interaction process that leads to group learning (Ballantyne, 2004). This results when both parties in the dialogue have positive attitudes towards one another (Lane & Kent, 2018). Dialogues are a form of two-way communication. Kent and Taylor (2002) explained the 5 key components of dialogue, which are mutuality, propinquity, empathy, risk, and commitment. These components have been further examined for better understanding in operations by Lane (2014, as cited in Johnston & Lane, 2017).

Table 2.5 Explanation of Dialogue Characteristics Operationalization

Characteristic	Participants' Displaying Positive Orientation
<b>Mutuality</b>	Voluntarily shares information
	Acknowledges their inter-dependency
	Try not to take control of communication
	Demonstrates a perception of participants as colleagues in the communication

Characteristic	Participants' Displaying Positive Orientation
<b>Propinquity</b>	Undertakes communication when it can make or change decisions (for example, before decisions are made – not just seeking approval for a decision that has already been made) Provides appropriate resources to undertake communication
<b>Empathy</b>	Shows support for others Acknowledges the rights of others Allows and encourages others to express their view points Represents other participants' points of view when necessary Includes disempowered participants
<b>Risk</b>	Engages with whom they would not normally be involved Positively comments on apparent differences in the appearance, behavior, or priorities of others If there is an agenda about filtering out certain types of potential participants, avoids choosing who they communicate with Accepts and embraces the unanticipated consequences result
<b>Commitment</b>	Be honest and forthright Frames group dialogue as a way to achieve mutually – acceptable outcomes Not using group dialogue as a way to work toward a specific pre-determined desired outcome

**Source:** Lane (2014, as cited in Johnston and Lane, 2017).

#### 2.7.2.2 Advocacy Communication

Advocacy is defined as the communication that happens when an individual or a group of people, communicate messages to achieve persuasive objectives targeted to other people or groups in order to gain agreement (Thackeray & Hunter, 2010). Edgett (2002) also said that advocacy is a communication based on the persuasion. It has the clear objective to persuade for acceptance in desired opinions or actions of individuals or organizations.

Examples of advocacy includes public advocacy, which is the most important construct in creating public engagement and it is the strongest relationship

between organization-public relations: OPRs (Walz & Celuch, 2010). In the relationship between the organization and the public, advocacy communications increase the effectiveness of organization communications (Men & Tsai, 2014).

Johnston and Lane (2017) classified advocacy tactics into two types, which are one-way advocacy tactics and two-way advocacy tactics.

The first type is the one-way advocacy is a means to manage responses, which have a low level of interaction. Those in the communications would receive information, explanation, and channel for response but do not have exchanges of opinions equally between both parties. This type of communication includes messages through media such as press conferences or advertising.

The second type is two-way advocacy, which provides the opportunity for interaction among the partners in communications. For instance, the company might set questions asking consumers for their comments or recommendations regarding their experiences in contacting the customer service department. The customers can provide their opinions or answer the questions. This two-way advocacy can be interpreted in the new era of advocacy communications as participatory-based advocacy. It gives importance and power to the voice of the majority of the people or consumers utilizing the principles such as listening and cooperation more than telling them what has to be done (Servaes & Malikha, 2010).

Dialogue and advocacy are tools in communications in creating engagement. The measurement of interaction between individuals as well as individuals and groups. In this study, dialogue and advocacy are part of the guideline for the examination of relationships between adult gamers with other players.

#### 2.7.2.3 Interaction

Interaction is general means the response, feeling, and impact, or feedback on a particular issue (Johnston & Lane, 2017). Academics have tried to explain this interaction in three different levels-individual level, group level, and social level.

Calder, Malthouse, and Schaedel (2009) explained that interaction at the individual level is the result of various types of engagement including cognitive engagement, affective engagement, and behavioral engagement or the combination of all three types of engagement.

Group level interaction, on the other hand, has mechanisms such as communication action such as taking turns to speak or sending messages, which include response or denial. Other mechanisms include quality and intensity of the communication action (Brennan, Merkl-Davies, & Beelitz, 2013).

Meanwhile, at social level, communication in the form of dialogue is important component of interaction. Tsoukas (2009) explained that interactions occur from conversations and exchanges. This is the mechanism that results in exchanges of feelings and thoughts, which lead to creation of new knowledge and make connections with content that result from said conversations. It is imperative to consider the previous conversations and ones that would occur after. Thus, this reiterative conversation (iteration) becomes the center of the creation of new knowledge including the interaction that would occur in the future (Bakhtin, 2010).

Johnston and Lane (2017) explained the components that create the constructs of interaction. These four components are as follows:

Iteration is the communication that occurs reiteratively.

Communication act is the process of sending and receiving messages including the outcomes of the message that was sent.

Frequency is the frequency or number of times the communication act that result from sending and receiving of messages.

Change over time is defined as the change that results from interaction through communications.

Thus, it can be said that interaction in communications within the engagement process is the form of iterative communications that result in changes over time. The communication act that utilizes this process include dialogue and advocacy.

Johnston & Lane presented the typology of interaction to explain engagement by presenting a clear model that has five levels of interaction, which are 0, 1, 2, 3, and 4 as explained in the following section.

Table 2.6 Table Presenting the Interaction

Type of Interaction	Type of Communication	Description of Interaction	Typical Tools/Channels	Implications for Engagement
<b>Non-interaction</b>	- Advocacy (one way communication)	- Participants separated in distance and time or have asynchronous experiences - No capacity for responses	- Information display	- No engagement
<b>Level 1 interaction</b>	- Advocacy (one way communication)	- Single iteration, one-way communication, low frequency, no change over time - Response does not necessarily result in a continuation of the communication	- Posting to social media	- ‘Dead end’ responses, for example, liking or retweeting - Acknowledgement and recognition - No behavioral change evidenced - Low engagement
<b>Level 2 interaction</b>	- Advocacy (two-way communication)	- Low/limited iteration, two-way communication, mid-range frequency, limited change over time - Lobbying or advocating for pre-determined decisions	- Conversation (online, in person)	- Discussion and argumentation to earn support - Most useful for engagement around an issue
<b>Level 3 interaction</b>	- Dialogue feeding into two-way advocacy around resulting	- Mid-range iteration, communication focused, mid-range	- Public deliberation	- Collaborative development of shared perspectives on

Type of Interaction	Type of Communication	Description of Interaction	Typical Tools/Channels	Implications for Engagement
	conclusions	frequency, change over time (behavioral)		issues
		- Meeting/ doing		- Significant for short engagement
		- Looking/ finding		linked to long engagement
		- Repeated/ ongoing to a given conclusion point		
<b>Level 4 interaction</b>	- Dialogue	- High iteration, communication focused, high frequency, change over time	- World cafes (open for everyone to exchange knowledges and experiences)	- Co-creation of new knowledge
		- Talking/ sharing		- Enhancement of positive shared perspectives on each other
		- Repeated/ ongoing		- Important in relational engagement
		- Investment (emotional/ financial/ physical, etc.) in sustaining it		

**Source:** Adapted from Johnston and Lane (2017).

The Typology of Interaction could be adapted to gamers. Thus, it can be explained that 0 is the lowest level of engagement or no engagement at all. This can be observed that there is no interaction whatsoever. The communication process in this level is done for one-way advocacy tactics. This can be compared to adults, who receive information about the game but are not interested. They might not ask any questions or express praises because it is not in their interest at all.

Interaction level 1 has low engagement. Communication action is done for one-way advocacy tactics with no iteration and no long-term effects. For instance, this includes clicking like and posting on social media. In terms of gaming, adults might

receive information about games from family members or friends, who might like or post images promoting awareness about a game in the Line group. This includes watching their children or grand children playing games. However, there is no development in starting to play the game or ask any more questions than that.

Interaction level 2 has communication action done for two-way advocacy tactics. It leads to decision-making. Interaction is done for a purpose with frequency of reiterative communications. However, the limitation is the short duration. Participants do not wish to have long-term engagement. Rather they only want to get the best results for a particular issue. When they know about information about the game, adults might be interested and ask questions. They would try to play the game and have in-game conversations in order to express their opinions in the Line group or social media occasionally. They might end up being listeners because they have limited expertise about games. Adults might play games continuously but they usually play easy games with no intention to create engagement with other players beyond that point.

Interaction level 3 has communication action in the form of dialogue together with two-way advocacy tactics to present opinions or joint decisions in order to derive joint outcomes. Participants in the dialogue are equal. Adult gamers have interactions with other gamers. They have conversations, respond in social media, express opinions, or share their experiences because they start to have higher expertise. Consequently, they would invite others to form groups with other gamers.

Interaction level 4 is the highest in terms of engagement process. Interaction is the basis of dialogue to exchange knowledge and thoughts equally. Each party presents reiterative communications resulting in new knowledge, perspectives, or understanding together. Interaction at this level results in gamers social groups in a concrete manner. Groups are strong because members have the expertise. They share experiences and knowledge continuously including interaction with other groups of gamers. Within the group there is also interaction with external groups.

The researcher has utilized the table developed by Johnston & Lane, which has been adapted to explain communication action and interaction to show the level of engagement among adult gamers as presented in Table 2.7.

Table 2.7 Explanation of Communication Action and Interaction among Adult Gamers

Type of Interaction	Type of Communication	Description of Interaction	Detail of Interaction	Outcome/Engagement Level
<b>Non-interaction</b>	- Advocacy (One- way communication)	- Participants separated in distance and time -Asynchronous experiences - No interest in game or no capacity for responses	- Adult receives information about game from friend, family, and social media with no interest - No searching for more game information nor asking question about game	- Not engagement
<b>Level 1 interaction</b>	- Advocacy (One- way communication)	- Single iteration, One-way communication, no change over time - Persuasion to play game	- Adult receives information about game from friend, family, and social media - Adult press like button, post some picture to show acknowledgement - Adult may try to play game but not serious	- ‘Dead end’ responses, such as liking and retweeting -Acknowledgement and recognition - No behavioral change evidenced - Low engagement
<b>Level 2 interaction</b>	- Advocacy (Two-way communication)	- Low iteration, two-way communication, mid-range frequency, limited change over time - There are persuasion to join game group among family or friends.	- Adult shows interest in game by asking and talking about game but mostly be listener because of limited in game knowledge. - Start playing game at easy level	- Temporarily engagement

Type of Interaction	Type of Communication	Description of Interaction	Detail of Interaction	Outcome/Engagement Level
			and without further building relationship with other players.	
<b>Level 3 Interaction</b>	- Dialogue - Advocacy (Two-way communication)	Mid-range iteration, communication focused, mid-range frequency, change over time (behavioral) - Adult get use to game and start exchanging information about game - Adult communicate with other players who has never been in contact before. - Adult may invite others to play game and may set up a group and together create the group norm	- Adult begins to interact with other players. - Exchange in game experience with others - Chitchat or give comments in social media - Set up a group to play game together with other players	- Collaborative development of shared perspectives about gaming - Significant for short engagement linked to long term engagement
<b>Level 4 Interaction</b>	- Dialogue	- High iteration, communication focused, high frequency, change over time - Talking/sharing information, opinion - Sustainable Investment (emotional, financial, physical, etc.)	- The group has strong relationship - Adult gamers regularly exchange their experience and knowledge in game - Adult gamer interact with gamer who is not belong to his/her group - Adult gamer takes	- Co-creation of new knowledge about gaming and others - Development, maintenance, and enhancement of positive shared perspectives on each other - Important in long term engagement

Type of Interaction	Type of Communication	Description of Interaction	Detail of Interaction	Outcome/Engagement Level
			part in other game groups	

**Source:** Adapted from Johnston and Lane (2017).

The researcher utilized communications for social engagement creation as one of the guidelines. It is used for the examination of communication in the process for social engagement creation of adults through digital games together with group communication and communication through digital games.

### 2.7.3 Communication in Digital Games

Communication in digital games especially in online game are viewed as modern communication that is related to virtual societies that have built on the Internet. Gamers can communicate and share their experiences as well as common interests. Sirinantana (2016) posited that the characteristics of communication among online gamers is a group communication rather than personal communications. It is clearly communication within a group in the Internet world. The means for getting to know friends in the game comprises of 3 stages, which are selecting people they would like to know, maintaining the relationship, and reveal their real identity. Communication in the game has been categorized into two types, which are computer-mediated-communications and human computer interaction.

#### 2.7.3.1 Computer-Mediated Communication (CMC)

Kerr and Hiltz (1982) summarized the important factors in the communication process through computer-mediated communication. This includes software used to control the system, which creates interaction, provides access to information, information processing, ability in generating response, and expression of responses through communications. In the past, these were inherent in text-based communication. Today the sender and receiver can respond to one another by sending voice, image, and video. For instance, communication in the game, is made through

the game application. This ability to respond is the most important aspect in the process for exchanging information among one another.

Computer-mediated communication can be summarized as follows (Kasemsant, 2003, p. 19):

- 1) Two-way communication
  - 2) There is no limitation to the source of information.
- Hypertext could be used to link from one website to another site that has the desired information.
- 3) Search for information based on the interest of users (information pull).
  - 4) Based on the interest of users (demassified).
  - 5) Participative audience
  - 6) Identity of users can change all the time (identity shift).
  - 7) Media can be accessed at any time, transient
  - 8) Widely distributed
  - 9) Users can manipulate content as they wish.

#### 2.7.3.2 Human Computer Interaction (HCI)

Communication wherein the player interacts directly with the computer is known as human computer interaction (HCI) (Deterding, Dixon, Khaled, & Nacke, 2011). This includes clicking the mouse and clicking for skills as well as using finger to click on the character on the screen of the mobile phone multiple times in Pokémon Go or to answer questions. Therefore, in playing digital games, HCI occurs when the player does any action on the gaming device, which is playing with game.

In conclusion, examination of the communication process to create social engagement, in addition to studying interpersonal communication or inter-group communication, it is crucial to study mediated communications between the player and the game. This is to ensure that the entire communication process is examined.

## 2.8 Relevant Studies

The researcher has examined relevant studies in the field of game playing of gamers including youth, teenagers, middle-aged adults, and the elderly. This also includes playing games for social engagement, which would be used for the comparative analysis used in this study as explained in the following section.

1) The research titled, “Never Too Old to Play: The Appeal of Digital Games to an Older Audience” (De Schutter, 2011) examined the games popular among adults and the motivation for playing games. The study was conducted online on 124 respondents aged 45-85 years in Belgium. The research found that middle-aged adults and older tend to like playing solitary player games with the main motivation as challenge. In terms of social interaction has the lowest motivation. Games most adults prefer to play are casual game particularly puzzle and traditional games.

2) De Schutter & Malliet (2014) examined motivation and gratification in playing video games of adults aged over 50 years by utilizing Uses & Gratifications (Blumler & Katz, 1974) in the study titled, “The Older Player of Digital Games: A classification based on perceived need satisfaction”. In-depth interviews were conducted on 35 respondents aged between 50-74 years, who were selected from a database built on a pool of 213 sample population. The data was collected from an online questionnaire through online conversation forums, which are the 2 largest Flemish forums. The topic of the conversation included digital games such as Talenet Games and Arena 51 in conjunction with a questionnaire, full page size, published in 2 newspapers, Het Volk and Het Nieuwsbald. The research findings indicated the existence of a relationship between primary motives and satisfaction from playing games. De Schutter and Malliet concluded that the research findings enabled categorization of elderly gamers into five types, which are time wasters, freedom fighters, compensators, value seekers, and ludophiles. This is made based on the analysis of the relationship between motivation and satisfaction. Motivation encompasses factors that are not related to contextual motivation to contentual motivation. Satisfaction encompasses usefulness to pleasure.

Time wasters are the elderly, who play digital games because they have nothing to do or do not do other activities. However, this group like to use their time

fruitfully. Thus, they choose to play games during their free time so they would not waste their time.

Freedom fighters choose to play games in order to avoid other activities that they do not like or play to relax from their daily routine. The difference between time wasters and freedom fighters is the positive attitude towards digital games in creating happiness for players.

Compensators view digital games have utility value and provide happiness. Compensators view games as a replacement of important activities or social activities that have disappeared for a long time. Games are the entertainment that help them to avoid being alone and boredom.

Value seekers is the group that has the motivation from the game. Gamers play because they believe they can learn new things from playing the game. They might be interested to play the game from the content related to their living routine. Value seekers view digital games as important and beneficial to their way of life.

Ludophiles have the highest engagement with playing games. This group would play multiple types of games. They are interested in the game such as digital games and non-digital games for their entire life. They give primary importance to the happiness from playing games.

3) Osmanovic and Pecchioni (2016) examined the relationship between adults and family members through playing video games in the study titled, "Beyond Entertainment: Successful Aging, Motivations and Outcomes of Video Game Playing by Older Adults and Their Younger Family Members" (Osmanovic & Pecchioni, 2016). Data was collected from adult respondents, who played online games, did not play online games, and youth through face-to-face and on-line interviews. After that some of the respondents were selected for a subsequent focus group interview.

The research findings indicated that adults, who played video games with their family were entertained, happy, and most importantly it served as a means to build the relationship with family members of different generations. The elderly gave importance in informal daily communications. Games become a space, where family members interact with each other. Adults, who do not play games with family members, believe it is dangerous. They tend to watch their children and grand children play video games. However, this group of adults believe that playing with

video games with younger family members, as a means of building effective relationships. They are interested in eventually participating with simple games.

The research findings from the view of younger family members, they feel that playing video games with adult family members is a means of building stronger relationships. Most of the youth are careful in selecting games that could be of interest and played together with other family members. In playing games with adults, the younger members would give importance to social interaction and enhancing the relationships within the family. For them playing games with people of the same age, they are satisfied most with the challenge of the competition. Young family members show the intention to play with adults in their family. They would like to play more complex games. However, the complex games available in the market do not suit the preference of adults. Consequently, adults would turn away from playing such games in the end.

4) The research titled, “A Sense of Belonging: Pokémon Go and Social Connectedness” (Vella et al., 2019) examined the social effects of playing Pokémon Go. In addition, it examines the mechanisms that drive social connections from this game. The researcher interviewed 15 players (aged between 17 – 31 years) at a public space designated as PokéStop. Data was also collected from the forum on social media, which is a popular global forum [https://www.reddit.com/r/Pokémon go/](https://www.reddit.com/r/Pokémon%20go/). Data was collected from 880 people, who posted in the forum.

The research findings were categorized in three topics. Firstly, Pokémon Go, assists in strengthening the ties with the family and friends. Secondly, Pokémon Go serves as an icebreaker activity by stimulating conversation and interaction with strangers. Finally, playing games helps to enhance the sense of belonging in the group of players, who play together, and to the location of play.

5) Schoenau-Fog (2011) conducted the study titled, “The Player Engagement Process-an Exploration of Continuation Desire in Digital Games’. The objective of the study is to examine to the inspiration of playing games continuously. The researcher chose to study the perspective of the player in order to comprehensively understand game engagement of players. The research methodology was a qualitative study. Data was collected from 41 respondents (33 male and 8 female). The analysis

was conducted based on grounded theory in order to develop the framework for the process of player engagement with the game.

Schoenau-Fog collected data three times in order to accomplish the goal in identifying the factors that promote motivation for continuous game playing. After the screening and classification of data in each collection stage. The results from the first stage obtained 205 responses from 5 questions about the characteristics of game engagement. After the analytical process, the data was classified in 95 groups of answers. When two follow-up data collection stages, the analytical process yielded 33 groups. After the third stage of data collection, the result yielded 18 groups of concepts about gamer's engagement.

The results of the study yielded 4 main components of gamer's engagement, which are objectives, activities, accomplishments, and affects.

**Objectives-**This is the objective that can be classified as extrinsic and intrinsic objectives. Extrinsic objectives are motivations that are determined by the game such as challenging missions or collection of items within a certain timeframe. Intrinsic objectives are motivations from the player. The gamer determines the goal in playing the game on their own. This includes the goal to expand the city based on their desires in Sim City. Motivations in terms of objectives are limited to the foundations of game engagement. It is one of the reasons that players still continue playing games in order to achieve their objectives.

**Activities-**The motivation from activities or actions. Players take such actions in order to achieve their objectives. This includes solving or overcoming challenges, development of strategies in the game. Sensing or sensory engagement involves the engagement with audio, visual, and the aesthetic atmosphere elements that occur in the game. Interfacing is the motivation derived from having control over the game or physical movement involving the players throughout the game. Exploration is the motivation to search and find new things in the game. This would result new feelings and experiences. Experimentation is the motivation that results from having the opportunity to change the content in the game or dress up one's own avatar. This increases game engagement as well. Creation is the motivation to create in the game promoting user-generated content or opportunities to create new components by the player. This includes the opportunity to evolve the Pokémon from 2 to 3 forms.

Players can choose to utilize special accessories to create a special form. Destruction is a game that emphasizes destruction or creation of objects. Just Cause 2 is a game where players can destroy everything in the game. It is an opportunity that is not available in the real work by creating experiences that result in creating engagement. Experiencing the story occurs when the players have a feeling of engagement with the content or story of the game. Experiencing the characters is the motivation from the development of the avatar by gamers, who want to see their characters continue to develop in the game. Socializing is the motivation that results from social interaction such as cooperation to accomplish missions in the game.

Accomplishments-The motivation that is derived from the successful completion of missions. Achievements occurs when players are successful in accomplishing the mission in the game. Progression is the development in playing the game, which results in the continued engagement. Completion is the motivation from finishing the mission that has been determined by the game successfully.

Affects-The motivation derived from emotions and feelings that result from the game. It can be categorized as positive and negative affect. Positive affect includes feelings such as fun, success, excitement, satisfaction, and surprise. Negative affects are the causes of players quitting the game. This includes lack of interest, waste of time, being annoyed, and dissatisfaction. Absorption is the motivation from feelings and emotions, which are consequences of flow, which is the attractiveness in the world of the game.

6) The master's thesis titled, "Communication Behavior in Playing Online Games" (Piemyoosuk, 2007) examined that communication behavior resulting in player's interaction, while playing online games. It is a qualitative study utilizing non-participant observation as the research methodology. Data was collected from gamers, who play online games in online game shops in Samut Prakarn City District.

The research findings indicated that communication behavior, while playing online games. It results from the interaction in different forms as follows: 1) Communication behavior involves the interaction between gamers and the game. This results in players having playing behavior, which might be the same or different depending on the interaction with the online game. The main factors that contribute to the players willingness to interact with the game continuously include the motivation

for success, social, and addiction to online games (being fixated on playing the game). 2) When players want to interact with others, they would exhibit communication behaviors through their characters to those of other players. 3) Communications among online gamers and the online game, operate under the bounds of the behavior of each character that is determined by the game producers. 4) Communication behavior among the avatar of the gamers. It is a form of online game interaction that creates a virtual social environment. This is the main reason that enables players to become addicted to the online game. Consequently, communications through the characters have the game as the mediation to promote closeness among players. 5) Communication behavior between players and their avatars fosters a learning of the types of relationships and interactions from the components of the online game as a media. Each of the online games have basic components that might be the same or different. This depends on the type of story and content in each of the game as well as the format and game play.

7) The quantitative study conducted by Sae-eug et al. (2017) examined the behavior of playing online games and the impact of playing online games on students in Rajabhat Nakhon Ratchasima University aged between 17-25 years. Data was collected using a questionnaire drawing 450 respondents from students from 6 faculties. It is found that most of the respondents played games on average 2-3 hours a day. They usually play games from 20:00-24:00 hrs., usually playing with their friends. The main objective for playing games is for entertainment, fun, and relaxation from stress. This is followed by playing to learn new things and reduce loneliness. In terms of the popular type of games are MMORPGs. Casual games are the least preferred.

The research findings indicated that the impact from online game affects the physical condition the most. Students admit that when they have played online games for a long time, they would have problems with their eyesight. They report feeling aching sensation and become short-sighted. In terms of impact on the intellect, they report that it makes them more creative. In addition, it improves their skill in using the computer. However, it reduces their interest in studying. At the same time, it is found that their relationship with friends and family tends to suffer because they

communicate with them less frequently. Yet they report having more new friends from playing games.

The researcher has considered all of these studies to analyze and compare the resulting research findings derived from this study.



## 2.9 Conceptual Framework

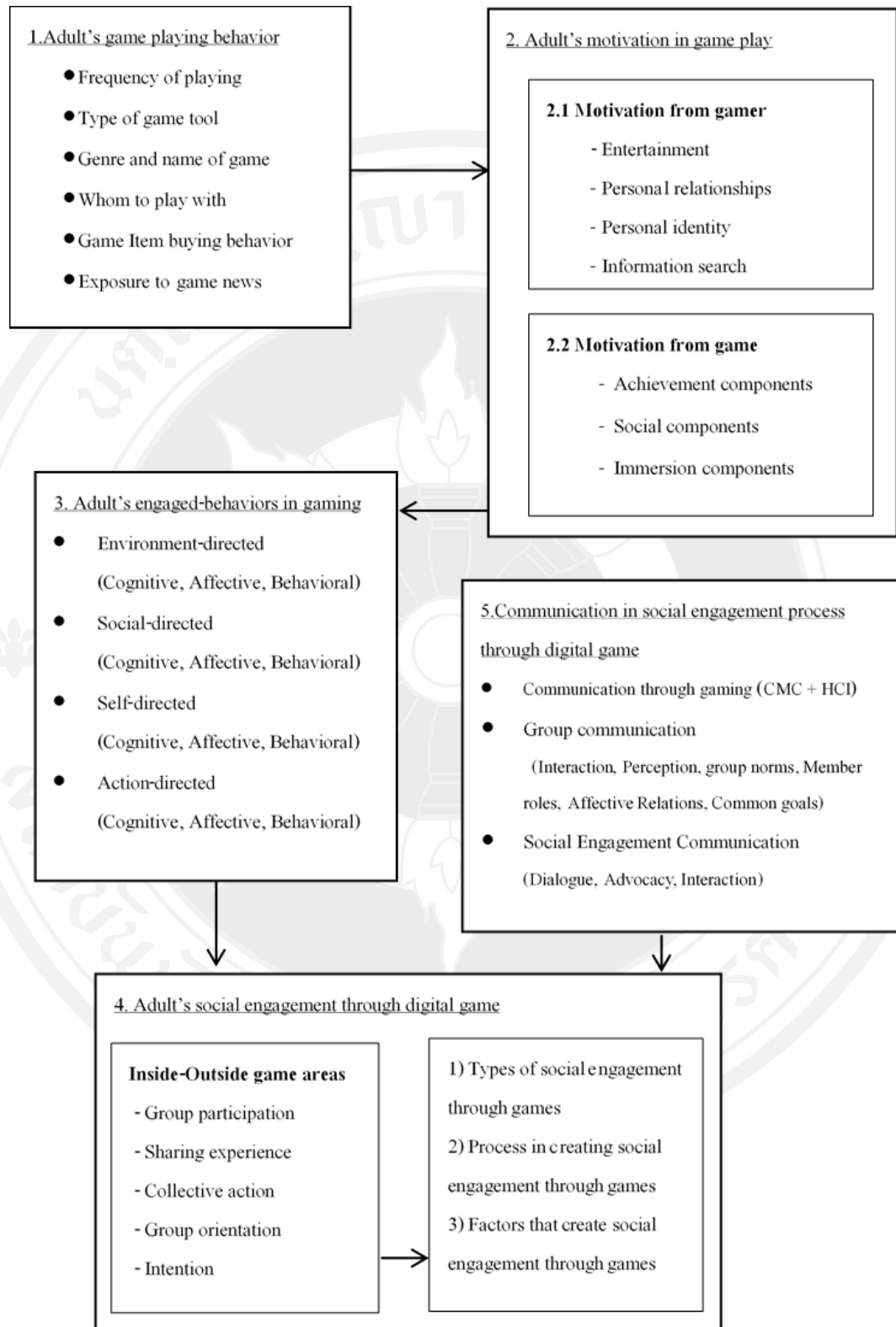


Figure 2.2 Research Conceptual Framework

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

The study titled, “Adult’s Social Engagement through Digital Game” has the objective to study the behavior and motivation of adults in playing digital games. It also includes the study of the characteristics of engagement with games, creating relationship with the social environment through playing games, and communications to create social relationship among adults through playing games.

This study utilizes mixed research methodology combining qualitative and quantitative research designs. The characteristics of the research is phenomenologism, with emphasis on the qualitative research. It is combined with the quantitative research that utilizes survey for data collection regarding game playing behavior and motivation in playing games that would be analyzed in conjunction with the theories reviewed for analysis serving as the framework for analysis.

The research process starts with the qualitative study, which utilizes the in-depth interview for data collection between April 25-October 6, 2019 and the focus group interview was conducted on July 24, 2019. Part of the qualitative study findings would be used to develop the quantitative study. The resulting questionnaire would be used to collect data online between September 10-October 30, 2019. The details of the research methodology would be explained in the following sections.

#### **3.1 Qualitative Research**

The data was collected using the in-depth interview and focus group interview in order. The goal was to examine the game playing motivation and types of games popular among adults. The details of the topics discussed in detail are 1) adult engagement with games; 2) social relationship formats of adults through playing games; and 3) format of communications to create social engagement through games.

### 3.1.1 Data Collection Tools

3.1.1.1 In-depth interviews were conducted using open-ended questions in the format of a semi-structures question guide. Some of the questions were designed based on the objectives. The goal is to ensure that the respondents can express their views regarding playing games freely. The researcher has determined the issues to be examined as explained in the following section.

1) How do adults engage in game playing behavior? (Study the behavior of game playing behavior by measuring 6 indicators as the question guide. This includes the frequency or length of time spent playing games daily, device used for playing games, popular games among adults, people adults play games with, paying to buy items in games, and opening to news about games.)

2) What motivates adults to be interested in playing games or choosing to play a certain game? In addition, what is the motivation for continuing to play games? (Study the motivation of the elderly in playing games)

3) How do adults engage in game playing? (Study the engagement at the individual level and engagement with the game)

4) How do adults engage with others in the game? (Study the social engagement through digital games)

5) How do adults communicate with other gamers and with the game? (Study the communications process to create engagement)

Table 3.1 Topics Examined in the In-depth Interview

Topics to Examine	Example Questions
Introduce to the interview session	- Introduce interviewer
Background of informants	- Introduce the research's objective and topics to interview
	- Asking name, age, working experience, family matter, and lifestyle
To study informants' game playing behavior, games and types of game play,	- How long you have been playing digital game?

Topics to Examine	Example Questions
duration of playing, tools for playing, Item to buy, who to play with, perception of game information, etc. (To study game playing behavior and type of game that middle adult like to play)	<ul style="list-style-type: none"> <li>- What type of game and which game that you are playing at the moment?</li> <li>- And why do you play these games?</li> <li>- How often do you play game?</li> <li>- Estimate time that you play within 1 day</li> <li>- Whom do you play with?</li> <li>- Have you ever bought any game item?</li> <li>- Etc.</li> </ul>
What are adult's motivations to play and to select game? (To study reason or motivation behind adult's game playing)	<ul style="list-style-type: none"> <li>- When did you first start playing game?</li> <li>- What was the motivation that make turn out to play game? (for example, persuasion from someone,</li> </ul>
Conceptual idea: <ul style="list-style-type: none"> <li>- Motivation from player (for entertaining, social relationship, building up identity, finding information)</li> <li>- Motivation from game (achievement component, social component, game immersion component)</li> </ul>	<ul style="list-style-type: none"> <li>to cure loneliness, to find out about game, to catch up trendy, to kill time)</li> <li>- What do you like in playing game?</li> <li>- What inspire you to continue playing game until now (For example challenging, competition, avatar, teamwork, etc.)</li> </ul>
How does an adult engage to game? (study game engagement at individual level)	<ul style="list-style-type: none"> <li>- Feeling about recent game played</li> </ul>

Topics to Examine	Example Questions
<p>Concept:</p> <ul style="list-style-type: none"> <li>- Cognitive engagement</li> <li>- Affective engagement</li> <li>- Negative engagement</li> <li>- Behavioral engagement</li> <li>- Engaged-behaviors in digital gaming (environment-directed, social-directed, self-directed, action-directed)</li> </ul> <p>Adult's social relationship with other game players (Study social relationship between adult and other players through digital game)</p>	<ul style="list-style-type: none"> <li>- What do you like most in a game?</li> <li>- Feeling toward game character/avatar, environment or playing atmosphere</li> <li>- Talking about game in the past</li> <li>- Have you ever been angry while playing game? Why?</li> <li>- Have you talked with other players? What topic?</li> <li>- Is there any cooperation in playing game? How?</li> <li>- Talk about buying game item</li> <li>- How do you feel when you get promotion to higher level or win over an opponent?</li> <li>- How long have you been playing continuously?</li> <li>- Who do you usually play with?</li> <li>- Are you a part of a team or game player group?</li> <li>- Do you know other players in your team before?</li> </ul>
<p>Concepts:</p> <p>Engagement dimension</p> <ul style="list-style-type: none"> <li>- Group participation</li> <li>- Sharing experiences</li> <li>- Collective action</li> <li>- Group orientation</li> <li>- Intention</li> </ul>	<ul style="list-style-type: none"> <li>- How do you communicate with other players?</li> <li>-Do you have conversation with other players?</li> <li>- Talk about group communication channel such as Line, Facebook</li> </ul>

Topics to Examine	Example Questions
<p>How adult communicate with other players and with game play? (Study engagement communication process)</p> <p>Concept:</p> <ul style="list-style-type: none"> <li>- Communication through gaming</li> <li>- Group communication</li> <li>- Engagement communication</li> </ul> <p>(Interaction level 0-4)</p>	<ul style="list-style-type: none"> <li>- Does the group create any rule?</li> <li>- Who takes the lead role in the group?</li> <li>- Talk about group activities</li> <li>- What kind of tool that you use for playing game?</li> <li>- Do you like playing game alone or playing with others?</li> <li>- Who do you usually play with?</li> <li>- Feeling when playing alone and playing in group</li> <li>- Where do you receive game news/information</li> <li>- What topics are raised in the group?</li> <li>- How long has your group been established? Talk about the group establishment</li> <li>- What are characteristics of the group? Who takes the lead role?</li> <li>- How do you participate in playing game? (liking, sending sticker, sharing/posting opinion or experience, etc.)</li> <li>- Do you have close acquaintance in the group?</li> <li>- Is there any activity outside game area?</li> </ul>

3.1.1.2 Focus Group Interview was conducted using open-ended questions in the format of a semi-structures question guide. The goal is to have respondents express their views together in order to achieve the objectives that have been set. The researcher has determined the questions as explained in the following section.

- 1) How do adults develop social engagement through digital games? (At the group level)
- 2) How is communication used by adults to develop social engagement through digital games?

Table 3.2 Topics Examined in the Focus Group Interview

Topics to Examine	Example Questions
Introduce to the interview session	- Introduce interviewer
Background of informants	- Introduce the research's objective and topics to interview- Asking name, age, working experience, family matter, and lifestyle
To study social engagement through gaming	- How did you start to join the game group? - Have you ever known others before?
Concepts: Engagement dimension	- How do members share their experiences?
- Group participation	- Who is the main informant?
- Sharing experiences	- Have the group member gathered together to do group activities? Give example of the activities
- Collective action	- Talk about group rules, for example how the group accepts new member, etc.
- Group orientation	- Objective behind the establishment of
- Intention	

Topics to Examine	Example Questions
	the group
To study group communication	- Personalities of group members: active member / non active member
Concept:	- How was the group form?
Group communication	- Who takes the lead role in the group?
Engagement communication (Interaction level 0-4)	- How often do members communicate with each other? - What topics do group members usually talk about? Are there any topics other than gaming? - What are the communication channels of the group? - Who takes responsibility for the group communication channel? - How the group rules were created? - Are there any problems in the group? How did the members solve the problems? - Are there any activities outside game world? Give an example.

### 3.1.2 Population and Sampling Frame

The population is adult Thais aged over 40 years both male and female, who play a specific or many digital games.

#### 3.1.2.1 Sampling methodology respondents for the in-depth interview -

This research utilized the snowball sampling technique as the sampling methodology. The respondents were identified from relatives, friends, colleagues, and acquaintances. They were then asked to identify others, who fit the criteria as respondents, to be contacted for the in-depth interviews. After the interviews, these respondents were also asked to recommend other gamers, who could be interviewed.

Based on the criteria the respondents have been identified for the in-depth interview as explained in the following section.

There were 32 respondents for the in-depth interview. They include both male and female gamers aged over 40 years, who play either one or more digital games continuously for no less than 1 year.

#### In-depth Interview Respondents Profile

Data for the in-depth interview was collected within 6 months from April 25 to October 6, 2019. The respondents were aged between 40-72 years and played games for more than 1 year. They include 19 women and 13 men. The names of the respondents are pseudonyms in order to safeguard their privacy. The details of the respondents are provided in table 3.3.

Table 3.3 In-depth Interview Respondents Profile

No.	Interview Date	Name/Marital Status/Occupation	Gender	Age/years	Game Currently Played
1	25/04/19	<b>Sarocha</b> Widowed/ with kids University Lecturer	Female	69	Manor Café, Lily's Garden, Lost Island, Home Design
2	18/05/19	<b>Tanya</b> Single Lawyer	Female	49	Helix Jump, Homescapes, Word Finder, Dafu Casino
3	20/05/19	<b>Kanok</b> Married/ No kids Business Owner	Female	51	Candy Crush
4	23/05/19	<b>Dech</b> Married/ No kids Company employee	Male	50	RoV, Mobile Legends, PUBG
5	27/05/19	<b>Kant</b> Single	Female	51	Toy Blast, Homescapes

No.	Interview Date	Name/Marital Status/Occupation	Gender	Age/years	Game Currently Played
		Government employee			
6	27/05/19	<b>Ura</b> Married/ with kids Housewife	Female	52	Hay Day
7	28/05/19	<b>Tong</b> Married/ No kids Retired	Female	62	Line Pop
8	29/05/19	<b>Mas</b> Single Government employee	Female	44	Gardenscapes
9	29/05/19	<b>Thitima</b> Married/ with kids Business owner	Female	48	Hay Day, Toy Blast
10	30/05/19	<b>Piradee</b> Single Government employee	Female	43	Homescapes
11	30/05/19	<b>Raksa</b> Married/ with kids Business owner	Male	49	Alien shooter, Hay Day, Line Pop, Pokémon Go, Word Crossy, Line Bubble, Candy Crush
12	02/06/19	<b>Marut</b> Married/ with kids Company employee	Male	50	Candy Crush

No.	Interview Date	Name/Marital Status/Occupation	Gender	Age/years	Game Currently Played
13	02/06/19	<b>Hathai</b> Married/ with kids Housewife	Female	60	Candy Crush
14	03/06/19	<b>Wee</b> Married/ with kids Company employee	Female	51	Angry Bird, Tricon
15	05/06/62	<b>Warut</b> Married/ No kids Freelance	Male	40	Marvel's Strike Force, Seven Knights, Durango, Fishing Strike, etc.
16	12/06/19	<b>Samon</b> Married/ No kids Independent employment	Female	47	Fashion Fantasy, Fishing Strike, Food Fantasy, etc.
17	16/06/19	<b>Anucha</b> Married/ with kids Retired govt. official	Male	66	Candy Crush
18	16/06/19	<b>Pawinee</b> Married/ with kids Housewife	Female	62	Candy Crush
19	17/06/19	<b>Sombat</b> Married/ with kids Retired	Male	66	Candy Crush, Sudoku
20	17/06/19	<b>Krit</b> Married / with kids Retired	Male	72	Candy Crush
21	18/06/19	<b>Napha</b>	Female	48	Candy Crush,

No.	Interview Date	Name/Marital Status/Occupation	Gender	Age/years	Game Currently Played
		Single Company employee			Gardenscapes, Monster Blasters
22	18/06/19	<b>Suphan</b> Married/ with kids House wife	Female	64	Candy Crush
23	22/06/19	<b>Panee</b> Married/ no kids Company employee	Female	49	Homescapes, Fishdom, Pokémon Go
24	25/06/19	<b>Sarunya</b> Single Company employee	Female	49	Candy Crush, Hay Day
25	26/06/19	<b>Chatr</b> Married/ no kids Company employee	Male	41	PUBG, Ragnarok
26	27/06/19	<b>Jirapetch</b> Single Company employee	Female	46	Angry Bird, Hay Day, Homescapes
27	24/07/19	<b>Suthep</b> Single Investor	Male	56	Pokémon Go
28	19/09/19	<b>Pitak</b> Married/ with kids University lecturer	Male	42	Summoners War, Ragnarok
29	20/09/19	<b>Pichai</b>	Male	52	Pokémon Go,

No.	Interview Date	Name/Marital Status/Occupation	Gender	Age/years	Game Currently Played
		Single University lecturer			Summoners War, Mutant
30	05/10/19	<b>Nicha</b> Married/ no kids Company employee	Female	40	Homescapes, Cookie Adventure
31	05/10/19	<b>Tanakorn</b> Married/ no kids Company employee	Male	41	RoV
32	06/10/19	<b>Pongthorn</b> Single Government official	Male	43	RoV, Ragnarok, DOTA

3.1.2.2 Sampling methodology respondents for the focus group interview-A total of 4-6 participants would be selected from both male and female adults aged over 40 years, who play one or more games continuously for no less than one year. They should also be group members in at least one game, where they interact with other group members. This group should be established for no less than 1 year.

The focus group is defined to examine the formation of gamers' groups (study social engagement) as well as communications among members (study communications process role in building engagement). Therefore, additional conditions for the focus group interview are presented as follows:

1) Participants in each group should play the same game, but they do not necessarily need to be in the same group.

2) The games selected from the study are determined from the in-depth interviews. The games are selected from the most popular games because it has a large concentration of players. Also, there are groups that have been formed

from the beginning. In-depth interview results show that Pokémon Go, has clear group formation with the goal for playing the game. Thus, the researcher has selected gamers, who are members in Pokémon Go as the case study in the group formation in playing games.

Participants for the focus group interview were conducted on July 24, 2019. The data collected from the four groups, who are Pokémon Go players in various districts in Bangkok. They have all played the game for more than one year. They agreed to join the focus group and provided the name of their group. The names appearing in this study are pseudonyms in order to safeguard the respondents' privacy and to avoid the negative impact on the third party in a real situation.

1) Ake: male/ married with no kids, staff at Private University, aged 42 years old, member and admin of group A

2) Tri: male/ single, lecturer at Tutor School, aged 58 years old, member of group B, C, and D

3) Jin: male, married with kids, retired, aged 62 years old, member of group E, and F

4) Chai: male, married with kids, retired, aged 65 years old, member of group D

#### 3.1.2.3 Data Collection Period

The data collection period for the in-depth interviews and focus group took a total of 6 months from April to October 2019.

## 3.2 Quantitative Study

The goal is to examine the game playing behavior (use 6 indicators which are time spent playing games daily, device used in playing games, type of game played or favorite game, people played with, buying items in game, and receiving information about game) as well as motivation to play games among adults. The data was collected using an on-line survey. The findings would be analyzed in conjunction with the qualitative study.

### 3.2.1 Data Collection Tools

Adults coming together to play games in public is a rare occurrence today. Therefore, it is necessary to use on-line survey for data collection because it can best access the sample. The on-line questionnaire would examine the issues of development of adult's social engagement through digital game. The questionnaire is comprised of three parts as follows:

Part 1 This part is comprised of the general respondent demographics information including gender, age, marital status, monthly income, education, and number of people in household.

Part 2 This part is comprised of the game playing behavior. The questions in this part are based on the theory about behavior and media exposure. It also includes the results of in-depth interviews from 32 respondents about game playing behavior from the qualitative study.

Part 3 This part is comprised of the questions about motivations in game playing. The questions are developed based on the Uses and Gratifications Theory of media as well as game playing motivation.

Detail of on-line questionnaire (draft)

On-line questionnaire (Translated from original Thai)

#### 3.2.1.1 Part 1 Respondent's general information

Respondent answers by marking √ in ( ) which is the right answer.

##### 1) Gender

( ) Male      ( ) Female

##### 2) Age

( ) 40 – 49 Years old

( ) 50 – 59 Years old

( ) 60 – 69 Years old

( ) Over 70 Years old

##### 3) Marital status

( ) Single, Widow, Divorce      ( ) Married

( ) Having children      ( ) No children

##### 4) Monthly income

( ) Less than 15,000 Baht

- ☐ 15,001 – 25,000 Baht
- ☐ 25,001 – 50,000 Baht
- ☐ 50,001 – 100,000 Baht
- ☐ More than 100,000 Baht

5) Education background

- ☐ Elementary-Middle school
- ☐ High school/Vocational certificate
- ☐ High vocational certificate
- ☐ Bachelor degree
- ☐ Master degree and higher

6) Number of people living in the same house

- ☐ Live alone      ☐ 2 persons
- ☐ 3-5 persons      ☐ More than 5 persons

3.2.1.2 Part 2 Questions about game playing behavior

Respondent answers by marking √ in ( ) which is the right answer.

1) How many hours do you on spend playing game in 1 day?

- ☐ Less than 1 hour      ☐ From 1-2 hours
- ☐ From 3-4 hours      ☐ From 5-6 hours
- ☐ More than 6 hours per day

2) Types of game tool being used for playing game

(Respondent can choose more than 1 answer)

- ☐ Computer (desktop or laptop)
- ☐ Smart phone
- ☐ Tablet computer
- ☐ Game console (PS3, Nintendo Wii, etc.)
- ☐ Portable game console (PS, Vita, DS, etc.)

3) Which game you play in recently? (Respondent can choose

more than 1 answer)

- ☐ Candy Crush
- ☐ Line Pop
- ☐ Hay Day
- ☐ Pokémon Go

- ☐ Ragnarok
- ☐ RoV
- ☐ Pub G
- ☐ Home Scapes
- ☐ Garden Scages
- ☐ Marvel's Strike force
- ☐ Fashion Fantasy
- ☐ Fishing Strike
- ☐ Game that is not stated here, Please write down the

game name

1. \_\_\_\_\_

2. \_\_\_\_\_

4) Who do you usually play game with? (Respondent can choose more than 1 answer)

- ☐ Play alone
- ☐ Play with family members
- ☐ Play with friends/colleagues
- ☐ Play with unknown gamers

5) How much have you spent for game? (such as buying item, buying software game)

- ☐ Never
- ☐ Seldom buy
- ☐ Average buy less than 500 Baht per month
- ☐ Average buy from 501-1000 Baht per month
- ☐ Average buy from 1001-2000 Baht per month
- ☐ Average buy more than 2000 Baht per month

6) Which channel do you receive game news or game information? (Respondent can choose more than 1 answer)

- ☐ Family members/relatives
- ☐ Friends/Colleague
- ☐ Game magazine/book
- ☐ Social media (Facebook, Line, etc.)

- ( ) Blog/Micro blog (Twitter, Instragram, etc.)
- ( ) Web board (Pantip, etc.)
- ( ) Game web board
- ( ) Other channels (Discord, Play store, steam community, YouTube, etc.)

3.2.1.3 Part 3 Questions about game playing motivations (Respondent answers by marking √ in the box that match your opinion.

Explanation: Please read and evaluate the important level of motivations, then mark √ in the box that match your opinion. There are five level of evaluation which are:

- Most important
- Very important
- Moderately important
- Slightly important
- Least important

1) Motivations from player What is the reason or motivation behind your decision to play game? (digital game, video game, computer game, smartphone game, console game, etc.)

Table 3.4 Draft of Survey Questions on Motivations from Player

Type of Motivation	Reason to Play Game	Important Level			
		Most	Very	Moderate	Slightly Least
1) Entertainment motivation	<ul style="list-style-type: none"> <li>- Escaping from boring daily routine</li> <li>- Escaping from problem in life</li> <li>- Reduction of stress or emotional relaxation</li> <li>- Making use of free time</li> <li>- Entertaining and fun</li> </ul>				
2) Relationship motivation	<ul style="list-style-type: none"> <li>- Family member or friend recommendation</li> <li>- Using games as conversation piece with other</li> <li>- Playing to reduce loneliness</li> <li>- Building relationship with family members, friends, and people in society</li> </ul>				
3) Personal identity motivation	<ul style="list-style-type: none"> <li>- Games create new roles in society (for example, being a fighter or planner)</li> <li>- Playing game to keep up with changes in society</li> <li>- Playing game to find identity (through game character)</li> </ul>				

Type of Motivation	Reason to Play Game	Important Level			
		Most	Very	Moderate	Slightly Least
4) Information search motivation	- Playing game to answer curiosity and interest				
	- Playing game to learn about the game				

2) Motivations from game What do you like in playing game? (digital game, video game, computer game, smartphone game, console game, etc.)

Table 3.5 Draft of Survey Questions on Motivations from Game

Type of Motivation	Reason to Play Game	Important Level			
		Most	Very	Moderate	Slightly Least
1) Achievement motivation	- Moving up levels, advancement, getting rewards, and wealth in game				
	- Interest in the system, rules of the game, and improving character performance				
2) Social motivation	- Challenge and competing to win				
	- Being fond of communicating with other players				
	- Building up long-term relationship with other				

Type of Motivation	Reason to Play Game	Important Level			
		Most	Very	Moderate	Slightly Least
3) Game immersion motivation	players				
	- Like to be a part of team in playing game				
	- Like to discover new thing about game which gamer has not known before				
	- Interest in creating new story of game character and developing new game story with other gamers				
	- Interesting in character design such as dressing up				
	- Game atmosphere can help escape from thinking about problems in the real world				

### **3.2.2 Population and Sampling Frame**

The population is adult Thais aged over 40 years both male and female, who play a specific or many digital games.

Sampling frame are adults aged over 40 years both male and female, who play a specific or many digital games continuously for no less than 1 year.

#### **3.2.2.1 Sampling Methodology**

1) The on-line survey would be used to collect data from 400 respondents based on the formula presented by Taro Yamane for population of over 100,000 at the error level of  $\pm 0.5$ .

2) The sampling methodology used is convenience sampling. The questionnaire would be uploaded on google drive. The link would be posted on personal Facebook, Facebook group, and Line group of school, university, and colleagues. The researcher requested cooperation to share the link to friends and acquaintances, who might be possible respondents.

#### **3.2.2.2 Data Collection Period**

The data was collected during a 2 months period from September 10 – October 30, 2019.

### **3.2.3 Pre-Testing of Data Collection Tools**

The researcher pre-tested the data collection tools to ensure validity and reliability using the process explained in the following section.

1) In order to test the validity, the researcher presented the questionnaire to the dissertation advisor for initial check. The finished draft was sent to three experts to test the validity of the questionnaire. The experts are comprised of the following:

- (1) Asst. Prof. Dr. Nipakorn Kamjornmenukul
- (2) Asst. Prof. Dr. Nattaphon Yamcharoen
- (3) Asst. Prof. Dr. Saowaluck Jitnom

2) In order to test the reliability before data collection, the researcher pre-tested the questionnaire on-line with 30 respondents, who have similar characteristics as the sampling frame. The results were used to test the reliability and

make the necessary corrections. The completed questionnaire would then be used for data collection.

### 3.2.3.1 Questions Submitted to Validity Testing

The study of adult's game playing motivation

Description: Please read the details of each topic then mark ✓ in the blank that appropriate to each topic. Criteria for the consideration are:

- +1 means the topic is congruent with clear understanding
- 0 means the topic is unclear or not sure whether it related to the study
- 1 means the topic is not Understandable or not related to this study

#### Evaluation

- 1) Topic which its IOC point is between 0.5-1.0 can be used for questionnaire.
- 2) Topic which its IOC point is lower than 0.5 need to be revised and cannot be used for questionnaire.

#### Adult's motivation in playing digital game

- 1) Motivations from player What is the reason or motivation behind your decision to play game? (digital game, video game, computer game, smartphone game, console game, etc.)

Table 3.6 Questions Submitted to Validity Testing (Motivations from Player)

Type of Motivation	Reason to Play Game	+1	0	-1
1) Entertainment motivation	<ul style="list-style-type: none"> <li>- Escaping from boring daily routine</li> <li>- Escaping from problem in life</li> <li>- Reduction of stress or emotional relaxation</li> <li>- Making use of free time</li> <li>- Entertaining and fun</li> </ul>			
2) Relationship motivation	<ul style="list-style-type: none"> <li>- Family member or friend recommendation</li> <li>- Using games as conversation piece with</li> </ul>			

Type of Motivation	Reason to Play Game	+1	0	-1
	other			
	- Playing to reduce loneliness			
	- Building relationship with family members, friends, and people in society			
3) Personal identity motivation	- Games create new roles in society (for example, being a fighter or planner)			
	- Playing game to keep up with changes in society			
	- Playing game to find identity (through game character)			
4) Information search motivation	- Playing game to answer curiosity and interest			
	- Playing game to learn about the game			

2) Motivations from game What do you like in playing game? (digital game, video game, computer game, smartphone game, console game, etc.)

Table 3.7 Questions Submitted to Validity Testing (Motivations from Game)

Type of Motivation	Reason to Play Game	+1	0	-1
1) Achievement motivation	-Moving up levels, advancement, getting rewards, and wealth in game			
	-Interest in the system, rules, and improving character performance in the game			
	-Challenge and competing to win			
2) Social motivation	-Being fond of communicating with other players			
	-Building up long-term relationship with other players			
	-Like to be a part of team in playing game			
3) Game immersion motivation	-Like to discover new thing about game which gamer has not known before			
	-Interest in creating story of character and develop new game story with other gamers			

Type of Motivation	Reason to Play Game	+1	0	-1
	-Interesting in character design such as dressing up			
	-Game atmosphere can help escape from thinking about problems in the real world			

### 3.2.3.2 Results of Validity Tests

Table 3.8 Results of Validity Tests

Type of Motivation	Motivation from Player	Experts			IOC Point	Result
1) Entertainment motivation	- Escaping from boring daily routine	1	1	1	1	Acceptable
	- Escaping from problem in life	1	1	1	1	Acceptable
	- Reduction of stress or emotional relaxation	1	1	1	1	Acceptable
	- Making use of free time	1	0	1	0.67	Acceptable
	- Entertaining and fun	1	1	1	1	Acceptable
2) Relationship motivation	- Family member or friend recommendation	1	1	1	1	Acceptable
	- Using games as conversation piece with other	1	1	1	1	Acceptable
	- Playing to reduce loneliness	1	0	1	0.67	Acceptable
	- Building relationship with family members, friends, and people in society	1	1	1	1	Acceptable
	- Games create new roles in society (for example, being a fighter or planner)	0	1	1	0.67	Acceptable
3) Identity motivation	- Playing game to keep up with changes in society	0	1	1	0.67	Acceptable
	- Playing game to find identity (through game character)	1	1	1	1	Acceptable
	- Playing game to answer curiosity and interest	1	0	1	0.67	Acceptable
4) Information search motivation	- Playing game to answer curiosity and interest	1	0	1	0.67	Acceptable

Type of Motivation	Motivation from Player	Experts			IOC Point	Result
1) Achievement motivation	- Playing game to learn about the game	1	1	1	1	Acceptable
	- Moving up levels, advancement, getting rewards, and wealth in game	1	1	1	1	Acceptable
	- Interest in the system, rules, and improving character performance in the game	1	1	1	1	Acceptable
2) Social motivation	- Challenge and competing to win	1	1	1	1	Acceptable
	- Being fond of communicating with other players	1	1	1	1	Acceptable
	- Building up long-term relationship with other players	1	1	1	1	Acceptable
3) Immersion motivation	- Like to be a part of team in playing game	1	1	1	1	Acceptable
	- Like to discover new thing about game which gamer has not known before	1	1	1	1	Acceptable
	- Interest in creating story of character and develop new game story together with other gamers	1	1	1	1	Acceptable
	- Interesting in character design such as dressing up	1	1	1	1	Acceptable
	- Game atmosphere can help escape from thinking about problems in the real world	1	0	1	0.67	Acceptable

The validity test results have been based on the average of the IOC scores. All of the questions in the questionnaire have average IOC scores of more than 0.5 (IOC scores of more than or equal to 0.5 means the question is acceptable). Thus, every question could be used. However, the committee checking the validity recommended that some of the questions be re-worded for clarity. The researcher then made the necessary corrections and tested the reliability. The data was collected from 30 respondents, who had similar characteristics as the sampling frame. The results were then subjected to reliability tests in SPSS.

## 3.2.3.3 Results of Reliability Test

Table 3.9 Results of Reliability Tests

Motivation from Player	Cronbach Alpha	Meaning
Total 14 motivations from player	.856	Good
- Escaping from boring daily routine	.858	Good
- Escaping from problem in life	.865	Good
- Reduction of stress or emotional relaxation	.859	Good
- Playing game to pass the time	.842	Good
- Entertaining and fun	.850	Good
- Family member or friend recommendation	.861	Good
- Using games as conversation piece with other	.829	Good
- Playing game to reduce loneliness	.851	Good
- Building relationship with family members, friends, and people in society	.847	Good
- Games create new roles in society (for example, being a fighter or planner)	.832	Good
- Playing game to keep up with changes in society	.832	Good
- Playing game to find identity (through game character)	.840	Good
- Playing game to answer curiosity and interest	.840	Good
- Playing game to learn about the game	.838	Good
Total 10 motivation from game	.867	Good
- Moving up levels, advancement, getting rewards, and wealth in game	.873	Good
- Interesting in the system, rules of the game, and improving character performance in the game	.866	Good
- Challenging and competing to win	.860	Good
- Like to communicate with other players	.837	Good
- Like to create long-term relationship with other players	.837	Good
- Like to be a part of team in playing game	.841	Good

Motivation from Player	Cronbach Alpha	Meaning
- Like to discover new thing which gamer has not known before	.846	Good
- Like to create story for game character and co-develop new game story with other gamers	.840	Good
- Interest in character design such as dressing up	.842	Good
- Game atmosphere can help gamer avoid thinking of problem in the real world	.889	Good

The results of the reliability tests based on the Cronbach Alpha revealed that all the scales ranged between 0.80-0.89. This means good reliability. Thus, the questionnaire could be used for actual data collection.

### 3.3 Data Analysis

#### 3.3.1 Report of Research Findings and Data Analysis

The analysis of the qualitative study would be made based on the in-depth interviews collected from 32 respondents and focus group of 4 respondents. The data would be systematically coded and compared. The results of this study would be reported in Chapter 4 (research findings part 1) and Chapter 5 (research findings part 2). The findings would be presented descriptively and categorized systematically based on the 5 research objectives.

The quantitative study from the on-line survey collecting data from 402 respondents, would be analyzed using the SPSS program. The analysis would be comprised of 4 types of descriptive statistics including frequency, percentage, mean, and standard deviation.

The qualitative and quantitative findings would be summarized and discussed based on the theories and relevant research in Chapter 6.

#### 3.3.2 Data Analysis Topics and Details

1) The analysis of game playing behavior based on research objective 1 has the following details:

Study of game playing behavior of respondents based on 6 indicators, which are time spent playing games daily, device used in playing games, type of game played or favorite game, people played with, buying items in game, and receiving information about game.

The qualitative study would be analyzed based on the in-depth interviews and focus group utilizing systematic categorization, coding, comparison, and descriptive explanation together with anecdotes that represent each topic.

The analysis for indicators 1, 2, 4, 5 and 6 would be derived from the on-line survey. The analysis would be conducted using the SPSS program to present the descriptive statistics. The basic statistics used would be frequency and percentage.

For indicator 3, which is about type of game played or favorite game of adults, the researcher collected data from the in-depth interview of 32 respondents. This was then used as the basis for the development of the choices in the on-line questionnaire. In addition, respondents could add the name of the game if it is not in the choice set. Therefore, the findings about the favorite game and games played were used to categorize the types of digital games played. This was then used to classify games played based on descriptive statistics, which are frequency and percentage.

2) The analysis of motivation in playing games is also collected in the quantitative study. The details of the analysis are presented as follows:

The analysis of game playing motivation is taken from the on-line survey in Part 3. The respondents could consider the statement and evaluate the motivation to play games. The Likert Scale was used to measure the level of importance. The five levels are presented as follows:

5	stands for	Most important
4	stands for	Very important
3	stands for	Moderately important
2	stands for	Slightly important
1	stands for	Least important

The criteria for interpretation of the meaning for equally spaced intervals, which is 0.80 based on the formula (Ruangprapan, 1996).

$$\text{Range} = \frac{\text{Highest score} - \text{Lowest score}}{\text{Number of Levels}} = \frac{5 - 1}{5} = 0.8$$

Interpretation of meaning are based on the following criteria:

4.21 – 5.00	is defined as	Having most impact
3.41 – 4.20	is defined as	Having very impact
2.61 – 3.40	is defined as	Having moderate impact
1.81 – 2.60	is defined as	Having low impact
1.00 – 1.80	is defined as	Having least impact

The numerical data would be interpreted from the questionnaire using SPSS program. The statistics used would include mean and standard deviation.

## **CHAPTER 4**

### **RESEARCH FINDINGS PART 1**

This research attempts to examine social engagement in adults through digital games by setting five research questions as follows:

- 1) What is the behavior of playing digital games among adults?
- 2) What is the motivation driving adults to play digital games?
- 3) How do adults engage with digital games?
- 4) How do adult gamers engage in social relationships with other players?
- 5) What is the characteristics of the communications process in creating social relationships among adults in digital games?

Chapter 4 presents the first part of the findings regarding the behavior and motivation in playing games of middle-aged adults and over. This answers to the first research question regarding the behavior of playing digital games among adults and the second research question about the motivation driving adults to play digital games. The research findings are presented into two parts based on the research methodology. The first is the quantitative study and the second is the qualitative study.

#### **4.1 Quantitative Research Findings**

The quantitative study could be classified into three topics as follows:

- 4.1.1 Respondents' Demographics Profile
- 4.1.2 Behavior of Adult Gamers
- 4.1.3 Respondents' Motivation in Playing Games

#### 4.1.1 Respondents' Demographics Profile

The research utilized the online questionnaire for data collection. The link for the data collection was posted on September 10-October 30, 2019. There were total of 402 respondents (n= 402), who answered the only survey. The demographics was analyzed using frequency and percent as presented in table 4.1.

Table 4.1 Respondents Demographics-Gender

Sex	Number of Respondents	Percent
Male	214	53.2
Female	188	46.8
<b>Total</b>	<b>402</b>	<b>100.0</b>

From Table 4.1 there are 402 respondents, of this 214 are male (53.2%) and 188 are female (46.8%).

Table 4.2 Respondents Demographics-Age

Age	Number of Respondents	Percent
40-49 years old	273	67.9
50-59 years old	98	24.4
More than 60 years old	31	7.7
<b>Total</b>	<b>402</b>	<b>100.0</b>

Table 4.2 presents the respondents profile in terms of age. It is found that most of the respondents are aged between 40-49 years of age (273 respondents or 67.9%). This is followed by those aged between 50-59 years of age (98 respondents or 24.4%) and those over 60 years (31 respondents or 7.7%).

Table 4.3 Respondents Demographics-Marital Status

<b>Marital Status</b>	<b>Number of Respondents</b>	<b>Percent</b>
Single*	195	48.5
Married	207	51.5
<b>Total</b>	<b>402</b>	<b>100.0</b>

**Note:** \*Single also include divorce or widow

The marital status is presented in Table 4.3. It is found that 195 respondents (48.5%) are single. In this study single includes widowed, divorced, and separated. The remaining 207 (51.5%) are married.

Table 4.4 Respondents Demographics-Having Children

<b>Children</b>	<b>Number of Respondents</b>	<b>Percent</b>
No child	161	40.0
Having children	241	60.0
<b>Total</b>	<b>402</b>	<b>100.0</b>

In terms of having children 241 respondents (60%) have children, while the remaining 161 respondents (40%) do not have children.

Table 4.5 Respondents Demographics-Monthly Income

<b>Revenue/Month</b>	<b>Number of Respondents</b>	<b>Percent</b>
Less than 15,000 Baht	20	5.0
15,001-25,000 Baht	66	16.4
25,001-50,000 Baht	155	38.6
50,001-100,000 Baht	103	25.6
More than 100,001 Baht	58	14.4
<b>Total</b>	<b>402</b>	<b>100.0</b>

Monthly income is presented in Table 4.5. Most of the respondents (155 respondents or 38.6%) have income ranged between 25,001 baht-50,000 baht per month. This is followed by those, who have income from 50,001-100,000 baht (103 respondents or 25.6%) and 15,001-25,000 baht is ranked third (66 respondents or 16.4%), fourth have income more than 100,001 (56 respondents or 14.4%), and finally are those who have less than 15,000 baht (20 respondents or 5%).

Table 4.6 Respondents Demographics-Education Level

Education	Number of Respondents	Percent
Primary/ Junior High	8	2.0
High school/ Vocational Cert.	23	5.7
Diploma/ High Vocational Cert.	14	3.5
Undergraduate	195	48.5
Graduate	162	40.3
<b>Total</b>	<b>402</b>	<b>100.0</b>

Education level is presented in Table 4.6. It is found that the majority (195 respondents or 48.5%) have a bachelor's degree. This is followed by master's degree (162 respondents or 40.3%). There are those with high school or vocational school (23 respondents or 5.7%) followed by higher vocational certificate (14 respondents or 3.5%) and elementary or junior high school (2%).

Table 4.7 Respondents Profile-Number of Household Residents

House Members	Number of Respondents	Percent
live alone	52	12.9
2 people	90	22.4
3-5 people	210	52.2
more than 5 people	50	12.4
<b>Total</b>	<b>402</b>	<b>100.0</b>

Table 4.7 show that the majority (210 respondents or 52.2%) have 3-5 members in the household. This is followed by 2 members (90 respondents or 22.4%), living alone (12.9%) and more than 5 members (12.4%).

#### 4.1.2 Behavior of Adult Gamers

The research has divided respondent's gaming behaviors into 6 topics which are frequency of playing, gaming device used, game and type of game preferred, partners in playing game, item buying behavior, and exposure to game news

##### 4.1.2.1 Frequency in Playing Games

The 402 respondents from the online study indicated that most of them play about 1-2 hours on average. From Table 4.8, it is found that 181 respondents or 45% spend about 1-2 hours per day. It is also found that 117 respondents or 29.1% spend less than 1 hour a day while 93 respondents or 23.1% play from 3-4 hours a day. About 1.2% and 1.5% said that they play from 5-6 hours and 6 hours a day respectively.

Table 4.8 Average Time Respondents Spend Playing Game in One Day

Time Spent Playing/Day	Number of Respondents	Percent
Less than 1 hour	117	29.1
1-2 hours	181	45.0
3-4 hours	93	23.1
5-6 hours	5	1.2
More than 6 hours	6	1.5
<b>Total</b>	<b>402</b>	<b>100.0</b>

##### 4.1.2.2 Type of Gaming Device

The research findings indicate that most of the respondents play the games via their mobile phones. The findings from Table 4.9 show that adult gamers, who answered the question about the devices used to play games chose more than one answer. The most popular device used in playing games is the mobile phone (330 respondents or 82.1%). This is followed by desktop personal computer (106

respondents or 26.4%), followed by tablet (92 respondents or 22.9%), and console (39 respondents or 9.7%). The mobile gaming device has the least number of users, which is 11 respondents (2.7%).

Table 4.9 Devices Used for Gaming

Type of Game Tool	Responses*	Percent**
Mobile phone	330	82.1%
Computer PC	106	26.4%
Tablet	92	22.9%
Game console	39	9.7%
Portable game	11	2.7%

**Note:** \* Respondent may choose more than one answer.

\*\* Calculated from 402 respondents

#### 4.1.2.3 Game and Type of Game Preferred

The research findings from the in-depth interviews were used to design the online survey questionnaire. They were used as the choice for the question asking middle-aged respondents, what is their favorite game. The results are explained in the following section.

1) Games Popular among Adults – The research findings from Table 4.10 indicate that most of the respondents play Candy Crush (114 from 402 respondents or 28.5%). This is followed by Pokémon Go (65 respondents or 19.6%). The third rank is RoV (50 respondents or 12.5%) followed by fourth rank Homescapes (47 respondents or 11.8%). The fifth rank is Hay Day (43 respondents or 10.8%) followed by Line Pop, Ragnarok, PUBG, Fishing Strike, and Summoners War, which rank from 6-10.”

Questions from the online questionnaire has an open-ended option that allows the respondents to write the name of the game they presently play if it is not among the choices. The respondents can choose more than one answer. The research findings indicate that most of the respondents play a variety of games. They

also play more than one game as the result demonstrates that from 402 respondents, there are 642 responses. Table 4.10 presents the games played by the respondents. The games ranked below 11 have less than 5 responses. These games are in combined of 237 responses or 59.3% of the total respondents. The findings are presented in Table 4.10.

Table 4.10 Games Preferred by Respondents from Most Popular to Lowest

<b>Present Game Playing</b>	<b>Responses (Total 642)</b>	<b>Percent (Calculated from 402 Respondents)</b>
Candy Crush	114	28.5%
Pokémon Go	65	16.3%
RoV	50	12.5%
Homescapes	47	11.8%
Hay Day	43	10.8%
Line Pop	27	6.8%
PUBG	23	5.8%
Ragnarok	23	5.8%
Fishing Strike	7	1.8%
Summoners War	6	1.5%
<u>(List of games which received less than 6 responses - alphabetical order)</u>	237	59.3%
Alien Shooter (4), Angry Bird (5), Astral chain (3), Auto Chess (4), Bejeweled (1), Captain Tsubasa (4), Carrot Defence (3), Castlevania (3), Civ4 (4), Cookie Adventure (5), Cookie Jam (4), Dafu Casino (4), Dark Souls (2), Diamond Dash (4), Dragon City (3), Durango (3), Farmville 2 (5), Fashion Fantasy (4), Fifa 19 (4), Final Fantasy (4), Fishdom (4), Food Fantasy (2), Football		

Present Game Playing	Responses (Total 642)	Percent (Calculated from 402 Respondents)
Manager 2019 (4), Funky Bay (2), Gardenscapes (5), <u>(List of games which            received less than 6 responses) (continue.)</u> Golf Clash (3), Harry potter (4), HelixJump (2), Heroes Guardian (3), Home Design (4), Lily's Garden (2), Line Bubble (4), Line Chef (3), Lost Island (4), Magic Jigsaw Puzzles (3), Mahjong (4), Manor Café (3), Marvel's Strike Force (4), Mobile Legends (4), Monster Blasters (4), Monster hunter world (4), Mutants (4), Nioh (3), NxB NV (3), Panda Pop (4), Path of Exile (3), Pro Snooker (3), Saint Seiya (4), Seven Knights (3), Sim City (4), Solitaire (4), Star Chef (3), Street_Fighter (4), Sudoku (4), Super City (3), Synga Poker (3), The last of us (3),_Tomb Rider (3), Township (3), Toyblast (5), Trigon (4), Tsum Tsum (2), War and Order (4), Word Crossy (4), Word Find Game (2), World of Warships (3), Zelda (4), 2048 (3)		

2) Type of Games Popular Among Adults-The researcher compiled the data from the online questionnaire and interviews yielding 68 games. This data was used for further analysis and categorized into the type of games popular adults. The type of games classification was referenced from the following websites.

[www.thisisgamethailand.com](http://www.thisisgamethailand.com)

[www.sanook.com](http://www.sanook.com)

[www.online-station.net](http://www.online-station.net)

<https://www.idtech.com/blog/different-types-of-video-game-genres>

<https://play.google.com/store/apps>

After getting the answers, the researcher started to categorize the games into categories based on existing criteria. However, it is found that some games might fall into multiple categories. The 68 games selected by the respondents were categorized based on the 9 types resulting in 103 games examined in total. The details are provided in the follow section.

Table 4.11 Games Played by Respondents Classified in 9 Categories

Game Genre/Type	Number of Games	List of Games (Number of Responses)
<b>Action Games</b>	13	Alien Shooter (4), Angry Bird (5), Dark Souls (2), Fishing Strike (7), Monster Hunter World (4), Nioh (3), NxB NV (3), Path of Exile (3), PUBG (23), Saint Seiya (4), Seven Knights (3), Street Fighter (4), World of Warships (3)
<b>Action-Adventure Games</b>	6	Astral Chain (3), Castlevania (3), Harry Potter (4), The Last of Us (3), Tomb Rider (3), Zelda (4)
<b>Adventure Games</b>	2	Cookie Adventure (5), Funky Bay (2)
<b>Role Playing Games</b>	24	Alien Shooter (4), Captain Tsubasa (4), Castlevania (3), Dark Souls (2), Dragon City (3), Durango (3), Farmville 2 (5), Fashion Fantasy (4), Final Fantasy (4), Fishing Strike (7), Food Fantasy (2), Harry Potter (4), Heroes Guardian (3), Marvel's

Game Genre/Type	Number of Games	List of Games (Number of Responses)
		Strike Force (4), Mobile Legends (4), Monster Hunter World (4), Nioh (3), NxB NV (3), Path of Exile (3), Pokémon Go (65), Ragnarok (23), Saint Seiya (4), Seven Knights (3), Summoners War (6)
<b>Simulation Games</b>	14	Dragon City (3), Farmville 2 (5), FIFA19 (4), Football Manager 2019 (4), Funky Bay (2), Gardenscapes (5), Golf Clash (3), Hay Day (43), Homescapes (47), Line Chef (3), Sim City (4), Star Chef (3), Super City (3), Township (3)
<b>Strategy Games</b>	9	Auto Chess (4), Civ4 (4), Heroes Guardian (3), Mahjong (4), Marvel's Strike Force (4), Mobile Legends (4), Mutants (4), RoV (50), War and Order (4)
<b>Sport Games</b>	5	Captain Tsubasa (4), FIFA 19 (4), Football Manager 2019 (4), Golf Clash (3), Pro Snooker (3)
<b>Puzzle Games</b>	26	Angry Bird (5), Bejeweled (1), Candy Crush (114), Carrot Defence (3), Cookie Adventure (5), Cookie jam (4), Diamond Dash (4), Fishdom (4), Gardenscapes (5), Home Design (4), Homescapes (47), Lily's Garden (2), Line Bubble (4), Line Pop (27), Lost Island (4),

Game Genre/Type	Number of Games	List of Games (Number of Responses)
Idle Games	4	Magic Jigsaw Puzzles (3), Manor Café (3), Monster Blasters (4), Panda Pop (4), Sudoku (4), Toy Blast (5), Trigon (4), Tsum Tsum (2), Word Crossy (4), Word Find Game (2), 2048 (3)
		Dafu Casino (4), Helix Jump (2), Solitaire (4), Zynga Poker (3)

The analysis of the number of games presented in Table 4.11 revealed that the most popular type is puzzle games (26 games). This is followed by Role-Playing-Games (RPG) (24 games), and simulation games (14 games). Ranked fourth and fifth are action games (13) and strategy games (9) respectively. Each game category has different number of respondents selecting to play it. Therefore, the 642 responses from the questionnaire were categorized resulting in a total of 782 responses were found. These were then subject to analysis using percentages based on the game category. The results are presented in Table 4.12.

Table 4.12 Respondents' Types of Digital Games Preferred

Game Genre/Type	Number of Responses Categorized by Game Characteristic	Percent of Responses (%)
1. Puzzle Games	271	34.7
2. RPGs	170	21.8
3. Simulation Games	132	16.9
4. Strategy Games	81	10.4
5. Action Games	68	8.7
6. Action-Adventure Games	20	2.6
7. Sport Games	18	2.3

Game Genre/Type	Number of Responses Categorized by Game Characteristic	Percent of Responses (%)
8. Idle Games	13	1.7
9. Adventure Games	7	0.9
<b>Total</b>	<b>782</b>	<b>100</b>

The research findings are presented in Table 4.12. This resulted in 782 responses because some games were classified in multiple groups. The respondents preferred puzzle games the most (34.7%), followed by Role-Playing-Games (RPGs) (21.8%). The third rank is simulation games (16.9%), strategy games (10.4%) at fourth rank, and action games (8.7%) at fifth rank.

#### 4.1.2.4 Partners in Playing Game

From the online survey, the respondents provided a variety of responses as presented in Table 4.13. It is found that most of the respondents prefer to play alone (321 from 402 respondents or 79.9%). This is followed by playing games with those they have not previously known (101 responses or 25.1%) followed by friend at the third rank (75 respondents or 18.7%) and finally family members (55 respondents or 13.7%).

Table 4.13 Partners Respondents Regularly Play Games with

Persons to play with	Responses*	Percent **
Alone	321	79.9%
Unknown gamers	101	25.1%
Friends	75	18.7%
Family members	55	13.7%

**Note:** \* Respondent may choose more than one answer.

\*\*Calculated 402 respondents

#### 4.1.2.5 Payment to Buy Items in Game

The research indicates that about half do not pay any money in buying items in the game. From Table 4.14 it is found that 206 from 402 respondents (51.2%) never bought items or products in games. The remaining 196 respondents pay for the items in the game. About 129 respondents (32.1%) admit to paying for items occasionally while 35 respondents (8.7%) pay monthly on a regular basis (no more than 500 baht). This is followed by about 3%, who spend 501-1,000 baht. The remaining spend 1,001-2,000 baht (2.7%) and more than 2,000 baht (2.2%).

Table 4.14 Amount of Money Spent in the Game

Money Spending for Game	Responses	Percent
Never	206	51.2
Sometimes	129	32.1
Average 500 Baht per month	35	8.7
Average 501-1,000 Baht per month	12	3.0
Average 1,001-2,000 Baht per month	11	2.7
More than 2,001 Baht per month	9	2.2
<b>Total</b>	<b>402</b>	<b>100.0</b>

In this study there is an examination of the purchase made in the item shop of the game. There is no study regarding the payment for the equipment such as the gaming console or mobile phone as well as other supporting equipment.

#### 4.1.2.6 Access to Information about Game

Quantitative Study reveals that most of the information about games comes from social media (such as Facebook and Line). It is found that 239 from 402 respondents (59.6%). This is followed by 129 respondents (32.2%) said they received information from friends. The third rank is family members (83 respondents or 20.7%) followed by game website (18.2%), web boards (12.7%), blogs (6%), micro blogs (4.2%), other sources (3.7%) (YouTube, Discord, Play Store, Steaming Community), and game magazines (1%).

Table 4.15 Channels for Accessing Game Information

Channel Receiving Information	Responses*	Percent**
Social media (Facebook, Line, etc.)	239	59.6%
Friends/colleagues	129	32.2%
Family members	83	20.7%
Website game	73	18.2%
Webboard (Pantip, etc.)	51	12.7%
Blog and Microblog (Twitter, Instagram, etc.)	17	4.2%
Others (Discord, Play store, Steam community, YouTube, etc.)	15	3.7%
Game magazine/ book	4	1.0%

**Note:** \* Respondent may choose more than one answer.

\*\*Calculated 402 respondents

### 4.1.3 Respondents' Motivation in Playing Games

#### 4.1.3.1 Motivation from the Player

From the responses of the online survey, it is found that most of the respondents are motivated by entertainment with ( $\bar{x} = 3.17$  and  $SD = 0.673$ ). This is followed by motivation for information search ( $\bar{x}$  equals to 2.59,  $SD$  equals to 1.056), relationship with others ( $\bar{x}$  equals to 2.48,  $SD$  equals to 0.910), and identity motivation ( $\bar{x}$  equals to 2.40,  $SD$  equals to 0.985), which is the least important.

Table 4.16 Important Level of Motivation from Player

Motivation from Player	Important Level					Mean $\bar{x}$	SD	Translate
	Most (5)	Very (4)	Moderate (3)	Slightly (2)	Least (1)			
<b>1. Entertainment Motivation</b>						<b>3.17</b>	<b>0.673</b>	<b>Moderate</b>
1.1 Escaping from boring daily routine	28 7.0%	80 19.9%	123 30.6%	102 25.4%	69 17.2%	2.74	1.164	Moderate
1.2 Escaping from problem in life	19 4.7%	27 6.7%	106 26.4%	133 33.1%	117 29.1%	2.25	1.091	Low
1.3 Stress reduction or emotional relaxation	139 34.6%	154 38.0%	85 21.0%	12 3.0%	12 3.0%	3.99	0.973	Very
1.4 Playing game to pass the time	26 6.5%	68 16.9%	158 39.3%	103 25.6%	47 11.7%	2.81	1.057	Moderate
1.5 Entertainment and fun	158 39.3%	165 41.0%	51 12.7%	17 4.2%	11 2.7%	4.10	0.963	Very
<b>2. Relationship Motivation</b>						<b>2.48</b>	<b>0.910</b>	<b>Low</b>
2.1 Family member or friend recommendation	21 5.2%	56 13.9%	85 21.1%	102 25.4%	138 34.3%	2.30	1.222	Low

Motivation from Player	Important Level					Mean $\bar{x}$	SD	Translate
	Most	Very	Moderate	Slightly	Least			
	(5)	(4)	(3)	(2)	(1)			
2.2 Using game as conversation piece with other	12 3.0%	35 8.7%	97 24.1%	113 28.1%	145 36.1%	2.14	1.096	Low
2.3 Playing game to reduce loneliness	50 12.4%	95 23.6%	55 38.6%	58 14.4%	44 10.9%	3.12	1.142	Moderate
2.4 Building relationship with family, friends, and people in society	30 7.5%	27 6.7%	121 30.1%	88 21.9%	136 33.8%	2.32	1.217	Low
<b>3. Identity motivation</b>						<b>2.40</b>	<b>0.985</b>	<b>Low</b>
3.1 Games create new roles in society (such as being a fighter or planner)	24 6.0%	76 18.9%	122 30.3%	68 16.9%	112 27.9%	2.58	1.241	Low
3.2 Playing game to keep up with changes in society	10 2.5%	49 12.2%	151 37.6%	82 20.4%	110 27.4%	2.42	1.089	Low
3.3 Playing game to find identity (through game character)	13 3.2%	27 6.7%	123 30.6%	104 25.9%	135 33.6%	2.20	1.079	Low
<b>4. Information search motivation</b>						<b>2.59</b>	<b>1.056</b>	<b>Low</b>
4.1 Playing game to answer curiosity and interest	16 4.0%	52 12.9%	133 33.1%	100 24.9%	101 25.1%	2.46	1.119	Low

Motivation from Player	Important Level					Mean $\bar{x}$	SD	Translate
	Most (5)	Very (4)	Moderate (3)	Slightly (2)	Least (1)			
4.2 Playing game to learn about the game	20 5.0%	79 19.7%	150 37.3%	75 18.7%	78 19.4%	2.72	1.133	Moderate

Motivation in playing game can be divided into 14 topics from Table 4.16. It is found that motivation has the most important impact on the decision to play is entertainment “entertainment and fun from playing the games” with ( $\bar{x}$ ) = 4.10 and Standard Deviation of 0.963. The second most important motivation is entertainment in terms of “reduction of stress or emotional relaxation” ( $\bar{x}$  equals to 3.99 and SD equals to 0.973). There are 4 topics that have moderate importance. This includes “play to reduce loneliness” ( $\bar{x}$  equals to 3.12, SD equals to 1.142), “make use of free time” ( $\bar{x}$  equals to 2.81, SD equals to 1.057), “escape from boring daily routine” ( $\bar{x}$  equals to 2.74, SD equals to 1.164), and “play to learn more about games” ( $\bar{x}$  equals to 2.72, SD equals to 1.133) respectively.

In terms of motivation that are not important in terms of entertainment, there is one topic “use games as escape from problems in life” ( $\bar{x}$  equals to 2.25, SD equals to 1.091). There are 3 relationship topics, which are “play with family or invited friends” ( $\bar{x}$  equals to 2.30, SD equals to 1.222), “use games as conversation piece with others” ( $\bar{x}$  equals to 2.14, SD equals to 1.096), and “build relationship with family members, friends, and people in society” ( $\bar{x}$  equals to 2.32, SD equals to 1.217). There are 3 identity topics, which are “games create new roles in society” ( $\bar{x}$  equals to 2.58, SD equals to 1.241), “keep up with changes in society”  $\bar{x}$  equals to 2.42, SD equals to 1.089), and “play games to find identity” ( $\bar{x}$  equals to 2.20, SD equals to 1.079). In terms of information search, there is one topic “play games to answer curiosity and interest” ( $\bar{x}$  equals to 2.46, SD equals to 1.119).

#### 4.1.3.2 Motivation from the Game

The research findings from the quantitative study collected through the online survey showed that success is the most important factor for respondents in playing digital games. It has moderate importance at  $\bar{x}$  = 3.17 and Standard Deviation 0.949, while social motivation and atmosphere in the game, which are  $\bar{x}$  = 2.36 and 2.47 respectively as shown in Table 4.17.

Table 4.17 Important Level of Motivation from Game

Motivation from Player	Important Level				Mean $\bar{x}$	SD	Translate
	Most (5)	Very (4)	Moderate (3)	Slightly (2)	Least (1)		
1. Achievement motivation					3.17	0.949	Moderate
1.1 Moving up levels, advancement, getting rewards, and wealth in game	55 13.7%	108 26.9%	154 38.3%	46 11.4%	39 9.7%	3.23 1.126	Moderate
1.2 Interesting in game system, rules, and improving character performance	45 11.2%	114 28.4%	155 38.6%	53 13.2%	35 8.7%	3.20 1.083	Moderate
1.3 Challenging and competing to win	62 15.4%	101 25.1%	111 27.6%	64 15.9%	64 15.9%	3.08 1.289	Moderate
2. Gamer society motivation					2.36	1.020	Low
2.1 Like to communicate with other players	12 3.0%	73 18.2%	104 25.9%	101 25.1%	112 27.9%	2.43 1.161	Low
2.2 Like to create long-term relationship with other players	16 4.0%	30 7.5%	112 27.9%	119 29.6%	125 31.1%	2.24 1.092	Low
2.3 Like to be a part of team in playing game	14 3.5%	42 10.4%	153 38.1%	83 20.6%	110 27.4%	2.42 1.101	Low
3. Game immersion motivation					2.47	0.952	Low

Motivation from Player	Important Level					Mean $\bar{x}$	SD	Translate
	Most	Very	Moderate	Slightly	Least			
	(5)	(4)	(3)	(2)	(1)			
3.1 Like to discover new thing about game which gamer has not known before	17 4.2%	61 15.2%	150 37.3%	90 22.4%	84 20.9%	2.59	1.104	Low
3.2 Like to create story for game character and co-develop new game story with other gamers	14 3.5%	43 10.7%	126 31.3%	104 25.9%	115 28.6%	2.35	1.106	Low
3.3 Interest in character design such as dressing up	32 8.0%	56 13.9%	109 27.1%	101 25.1%	104 25.9%	2.53	1.236	Low
3.4 Game atmosphere can help gamer avoid thinking of problem in the real world	27 6.7%	40 10.0%	117 29.1%	120 29.9%	98 24.4%	2.45	1.158	Low

Analysis of the motivation from the game that leads to continuous playing could be further divided into 10 topics. From Table 4.17 it is found that motivation for success has an impact on respondents' decision to play the game. There are three topics that have moderate level of importance, which are "moving up levels, advancement, getting rewards, and wealth" ( $\bar{x}$  equals to 3.23, SD equals to 1.126), "interest in the system, rules of the game, improving character performance in the game" ( $\bar{x}$  equals to 3.20, SD equals to 1.083), and "challenge and competing to win" ( $\bar{x}$  equals to 3.08, SD equals to 1.289) respectively.

Motivation from the game has an impact on the respondents' decision to play games at the fourth and fifth rank are from the atmosphere within the game. These topics include "like to discover new things which gamer has not known before" and "interesting character design" with  $\bar{x}$  equal to 2.59 and 2.53 respectively. The motivation from society in the game, "want to have long-term relationship with other players"  $\bar{x} = 2.24$  has the least impact on playing the game continuously.

## 4.2 Qualitative Research Findings

The research findings of the qualitative study could be presented in three sections as follows:

### 4.2.1 Past Experience in Playing Games

### 4.2.2 Game Playing Behavior

### 4.2.3 Motivation in Playing Games

#### 4.2.1 Past Experience in Playing Games

In the study titled, "Adult's Social Engagement through Digital Game", it is important to understanding the basis of awareness and experience that adults have with games. From the in-depth interview of 32 informants in combination with focus groups of 4 people, it is found that digital games are not a new thing for adults. They are familiar with digital games from their youth. Many of them started playing games in elementary school. Some have started playing since their teenage years, junior high school, in university, or in their workplace. Some have started playing games only recently, however, they have known about digital games prior to that. This study

classifies the experience in playing games into four groups based on the starting point in playing games and type of gaming device they started using. The research findings indicate that the 36 informants have experience in playing games by starting with arcade games (4 informants). There were 10 respondents, who started with gaming device or game consoles, while there were 13, who started with using the personal computer. Also, there were 9 informants, who started with using the mobile phone.

1) Experience starting with arcade games-Informants, who had the experience, starting with arcade games, later developed to play games through other devices. There are four informants in this group including Dech, Tanya, Raksa, and Marut.

I played arcade games when I was in elementary school. I then graduated to playing console games. As a kid I usually played fighting games but now I don't play them that much. I prefer strategy games more like Pacman. (Dech, personal communication, May 23, 2019)

I started playing games since high school. I started with arcade games. I was not addicted to it then. I then played computer games that are quite old such as Tetris. I started playing seriously with The Sim. It was very popular at that time. I think it was 2007. Back then I bought the disk and loaded it into my computer. Later, PSP was launched. I became totally addicted because it is very convenient and has nice graphics. (Tanya, personal communication, May 18, 2019)

I was 12-13 years at that time, in junior high school. I started with arcade games. I then started playing games on devices such as Tetris and fighting games such as Mario. (Raksa, personal communication, May 30, 2019)

I started playing games at the aged of 24-25 years. I started with arcade games in particular fighting games in department stores. When I was free and saw people playing, I tried to play too. (Marut, personal communication, June 2, 2019)

2) Experience starting with gaming devices, console games, and portable gaming devices-Informants started playing games with gaming devices,

console games, and portable gaming devices. They played these devices at home. There are ten respondents, who used this type of gaming devices. They are Warut, Pitak, Wee, Samon, Pichai, Thitima, Anucha, Chatr, Tanakorn, and Ake. There responses are presented as follows:

Since I can I remember I feel I have always grown up around games such as console and gaming devices. In those days, games include diver or throwing bottles. At that time the screen was still black and white. (Warut, personal communication, June 5, 2019)

I have known games since I was 4-5 years old since the very early gaming devices to the day that that console games came into the market. At that time my cousin played the game where the King Kong jumps and parachutes. When I grew up I started playing arcade games and computer games before using mobile phones today. I can say that I have played games in every era. (Pitak, personal communication, September 19, 2019)

I liked to play games, since I was a teenager. During the Entrance Exam, I remembered going to my best friend's house. He had a gaming device, while I did not have any. I felt I really liked it and became serious in playing games, when I have my own money to pay for it. I have devices and console games to play with my children. However, I do not play that much. I am not addicted. I play games on mobile such as Angry Bird and Candy Crush. However, I reduced the time spent playing games. I try to reduce. (Wee, personal communication, June 3, 2019)

I started with the early gaming devices and console games. They were black and white games back then such as tossing bottles to avoid dropping them in the water. As the level went up other objects were falling too. I play alone. I don't like the complexity. (Samon, personal communication, June 12, 2019)

I started with the gaming devices and then graduated to Sim City. I don't play that often. I started to play more when games were on Facebook and Line. I played Farmville and other games. But I don't play fighting games. (Pichai, personal communication, September 20, 2019)

Before my kids often played games that were sold on the CDs. When the kids went to school, I started to try playing. From then, I started playing whenever I have the time. (Thitima, personal communication, May 29, 2019)

I started with Play Station with easy games. My children taught be how to play. I don't remember the name of the game. Today I play on mobile and on the desktop PC. (Anucha, personal communication, June 16, 2019)

I started playing as a kid at about 10 years old. At that time, I was in elementary school. I started with console games, which was family computer. (Chatr, personal communication, June 26, 2019)

Looking back, I have been playing games as a kid. I started with gaming devices and developed to play with the games that are connected to the television. From then, I have always played games. When I was a kid I only played on weekends. (Tanakorn, personal communication, October 5, 2019)

I am a gamer since I was a kid. I played console games and now I play online games. I have followed the gaming in every era. (Ake, personal communication, July 24, 2019)

3) Experience starting with personal computers-Informants, who had the experience, starting with personal computers, is the largest group. There are 13 people in this group namely-Kanok, Kant, Tong, Hathai, Nicha, Piradee, Mas, Jirapetch, Napha, Pongthorn, Suthep, Jin, and Chai. The experiences of the respondents in this group are presented as follows:

I have been playing games for over 20 years. I started with Solitaire, which comes with the computer. At that time, I did not have my own computer so I played at my office to reduce boredom and kill time. When I bought my own notebook, I started to play games continuously. (Kanok, personal communication, May 20, 2019)

I started playing since 1996. I played the games that came with the computer such as Mine Sweeper. At that time, I was taking my master's degree. When I could not do my homework, I felt stressed so I started playing games. I do not remember if anyone recommended me to start playing because

it was so long ago. Once, I started, I have been playing ever since until smartphones came along. Now, I play games on my mobile phone primarily. I also play on desktop PC. (Kant, personal communication, May 27, 2019)

I started playing on desktop PCs. I have been playing games for 10 years now. From then for the past 4 years, I have been playing on mobile phone. I play less on desktop PCs now. Later I started to play games on the Internet such as finding pairs. It helps to enhance observation and memory. There are also puzzle games, Solitaire, and card games. (Tong, personal communication, May 28, 2019)

I remember starting to play games when all my kids have gone to school so I had more time. I started to play games when I have more time on my own. I could spend time with myself. I started playing on the desktop PC such as Tetris and puzzle games. I am lazy to get out of the house. I don't like the heat. Others when they have time they go out to do activities, I prefer to stay home and play games at home. (Hathai, personal communication, June 2, 2019)

I liked playing games since I was a kid. I started playing since we got a computer at home. When I went to university, I played on my friend's computer. I loaded the games on my friend's computer during our time in university such as The Sim. I started playing on mobile when I started working, that was when more games were being developed for smartphones. (Nicha, personal communication, October 5, 2019)

I have been playing games for a long time. I usually played on desktop PCs since I was working during my teenage years. At that time the games I played included Final Fantasy and console games on Play Station. These games are very attractive. I do not play much games on mobile phones because it is too small. I feel frustrated by it. But if I play it is the farm or candy family of games. (Jin, personal communication, July 24, 2019)

I started to know games on desktop PCs. But I was not that interested. I only played easy games such as card games or exploding fruits. (Chai, personal communication, July 24, 2019)

4) Experience starting with mobile phones- Informants, who had the experience, starting with mobile phones, are usually adults. They start when they are in the middle-age. The in-depth interview revealed that there are 9 informants in this group namely- Sarocha, Ura, Krit, Sombat, Pawinee, Suphan, Panee, Karanya, and Tri. The experiences of the informants in this group are presented in the following section.

I have been playing games for the past 5-6 years now. I started playing on mobile phones. I have heard about it before but I never played before. I later saw the young people playing so I became curious. I wanted to try and have been playing ever since. (Sarocha, personal communication, April 25, 2019)

Tetris and Diamond games on mobile phones, were the games I started to play to kill time. I was not serious about it. Today I play Hay Day. I have been playing for 5 years now. I started playing because my child, who was 4 years old, played it. When the child played for sometimes, I had to go in to help harvest so since then I have been playing the game. (Ura, personal communication, May 27, 2019)

I just started playing games about 4-5 years ago. I play games on mobile. My kids invited me to play but I always prefer playing alone. I play Candy Crush. (Krit, personal communication, June 17, 2019)

I have been playing on mobile for about 3-4 years now since I saw the children playing it. I think it is quite enjoyable so I tried playing. At first my son recommended me to play and I found that the game was quite entertaining. The kids enjoyed it so when I had nothing to do, I continued playing games. (Sombat, personal communication, June 17, 2019)

I started playing games on mobile. My elder brother invited me to play. Now I use two phones to play games. When you use two phones it is easier to move up the level. (Pawinee, personal communication, June 16, 2019)

However, most of the informants accepted that digital game that adults, who are in their forties and above, have known since they were kids were not that complicated nor colorful. They were easy to play and can be played alone or in small groups. Therefore, now with the game systems being more advanced with better

modern technology, games are more fun and challenging. This is what makes adults interested in learning more.

#### **4.2.2 Adult Game Playing Behavior**

The qualitative research findings presented information about adult game playing behavior. The main issues are about frequency in playing games, type of gaming device, games currently played, partner in playing games, amount spent buying items in games, and channel for accessing information about games.

##### **4.2.2.1 Frequency in Playing Games**

The in-depth interview collected data from 32 informants. Most of the informants (18) play no more than 2 hours a day. There are 6 informants, who play 2-3 hours a day. There are four, who spend 3-5 hours and another 4, who spend 6 hours a day. The observations made from the interview are presented in the following section.

1) Group of Players, who play no more than 2 hours a day explained that they played games to kill time, find something to do in the free time, reduce stress from work, reduce loneliness, and entertainment.

The informants, who played games to reduce stress from work, are Sarocha, Kanok, Piradee, Tanakorn, and Pichai. Sarocha usually spent time playing games in the evening for 1 hour after reaching home from work. This is different from Kanok, who played games depending on his level of stress from work. There is no fixed amount of time he plays. Some days he spends 30 minutes to about 2 hours playing, “I only play to relieve stress for real.” Tanakorn is a private company employee, who does not have much spare time but at least he plays RoV at least 40 minutes to 1 hour in order to complete his missions four times a day. He also plays to relieve stress during the day.

The informants played games to reduce their loneliness for instance 72-year old Krit and 66-year old Sombat have a lot of time to spare in retirement. They play games to relieve their stress at least 2 hours a day.

The informants, who play primarily for fun are Pawinee (62 years), Suphan (64 years), Napha (48 years), Wee (51 years), and Anucha (66 years). Napha, the Marketing Department Chief, explained, “I play every day for about 2

hours. I usually play before I sleep because I am not free during the day.” Anucha, Suphan, and Pawinee are all in their retirement age. They choose to spend their time playing games for entertainment. They spend no more than 2 hours a day. Wee, a private company employee enjoyed playing games since her teenage years. However, she tries to limit playing to one hour a day.

2) Group of players, who play more than 2 hours per day are more serious gamers as evidenced in the analysis. This group gives more importance to playing games than those, who spend no more than two hours playing games a day. They have different reasons in playing games. For example, Suthep, who plays Pokémon Go 4-5 hours a day to collect the characters in the game. Kant and Tong spend about 6 hours playing games because they want to move up the level. Dech plays about 3 hours a day. The goal is to train to become a professional player. Nicha spends 3-4 hours playing games explaining, “games are a part of my life”. This is the same reason as Warut, who spends about 10 hours a day playing. There are other reasons as presented in the following section.

I liked playing games since I was a child. I play on average 2-3 hours a day. I play while waiting in court for my clients. Whenever, I have time I would play. (Tanya, personal communication, May 18, 2019)

I play all day, whenever I have spare time. I play about 5-6 hours a day. I like to win and want to achieve high levels. (Kant, personal communication, May 27, 2019)

Well in terms of hours, sometimes I spend up to 10 hours playing games. This is because I have nothing to do since I am already retired. However, if I have to go out, I would not play. When I am at home, I use the home Wifi and play all day. The only condition is I don't have to buy it. It will come every half hour. I can play it continuously but sometimes I take a break then come back. (Tong, personal communication, May 28, 2019)

Usually I play up to 6 hours a day. Whenever, I have the free time I play games because I like it. (Raksa, personal communication, May 30, 2019)

Currently, I spend about 3 hours a day playing in total. I usually play during the free time I have, which is when the children have fallen asleep. It is the time I can spend longer time playing games. I play everyday. I dare say

games are a part of my life. (Pitak, personal communication, September 19, 2019)

#### 4.2.2.2 Type of Gaming Device

The in-depth interview of the informants revealed that most of the adults played games using mobile phones. This is because it is convenient to carry around and can be played anywhere (Tanakorn). Graphics in the mobile games today have been developed to be beautiful at the same level as those in the personal computer. Some of the games have been designed to be played on computer, iPad, and mobile phones (Pitak).

The research findings from the 32 informants reveal that most of them 18 informants have more than 2 devices for playing games. Some of the informants play games in devices other than mobile phones such as Kanok, who loaded all the games on the personal computer, iPad, and mobile phone for convenience in playing games. They can choose to play using any device by simply logging in. Tanya plays on the mobile phone and other portable gaming device. She also has not given up on playing games on the personal computer, when he needs to reduce stress from working on it for a long time. This is no different from Samon, Warut, and Anucha, who still occasionally play on the computer in addition to playing on the mobile phone.

Chatr usually plays on the mobile phone and on the iPad. This is same as Jirapetch, Pichai, and Hathai, who plays on mobile phone and tablets. Hathai explained, “I have mobile phones and tablets playing alternately. I don’t play on the personal computer too because I am too lazy to get up to play in front of the computer.” Jin confirmed, “I don’t like playing on mobile phones because the screen is too small and it is not convenient to handle.”

Some of the gamers have many mobile phones to play various games. Pawinee has 2 phones to play alternately one single game because it is easier to move up the level. Kant also has two mobile phones to alternate playing the game. “I have two phones so when my power is used up in one game, I would play another game to wait for it to recharge. I still have a personal computer at home. I think it is Dinosaur

Egg, I can't remember exactly. I also play picture games that I searched on App Store."

Suthep admits he has 9 mobile phones to play games.

I play games on my mobile phone and iPad. I have 9 phones to play Pokémon, for which I have 9 user IDs. I use auto-click program to help me so I do not have to wait for others. (Suthep, personal communication, July 24, 2019)

#### 4.2.2.3 Game and Type of Game Played

The in-depth interview about digital games currently played has the following interesting issue as presented in the following section.

1) From the interviews, it is found that Candy Crush had the largest number of players (11 informants). This is followed by Homescapes (6 informants) and Hay Day (5 informants). The fourth rank and fifth rank are Pokémon Go (4 informants) and RoV (2 informants) and Ragnarok (2 informants) respectively.

2) Most of the informants play many games at the same time and download these games to play alternately. Kanok (51 years) and Hathai (60 years) play all of the Candy Crush family of games namely Candy Crush Saga, Candy Crush Jelly, and Candy Crush Soda. Jirapha (46 years) chose to play Hay Day, Homescapes, and Angry Bird. Sarocha (67 years) provided the reason for loading many games, "I alternate playing them, while waiting to recharge the power. I don't want to waste money to pay coins or items. I play Maner Café, Lilys Garden, Lost Island, Home Design."

3) Selection of games to play depended on the different reasons held by the gamers as follows:

(1) Choose to play games to reduce stress and relax such as Tong (62 years) "I play children games to relax, now I play Line Pop."

(2) Choose to play games that can be enjoyed with family members. Raksa (49 years) chose a game that she can use to teach her children, "I play two games, which are Hay Day and Alien Shooter. For instance, Hay Day is connected to the network and it helps in the planning and knowledge. Alien Shooter is to train skills and concentration. In addition, Word Crossy could be used to learn new vocabulary."

(3) Some choose games that require thinking and strategy. For instance, Dech (50 years) explained, “RoV and Mobile Legend are games that train the eyes. It requires thinking of what has to be done and what the team members need to do...”

(4) Some choose games based on the beauty of the atmosphere or characters. For instance, Nicha (40 years) explained, “I like colorful and beautiful graphics that drives my choices like Homescapes, a home decoration game. It gives me the chance to choose home decorations. I don’t pay much attention to how I get the pieces of furniture to decorate my home.”

(5) Some choose games that fit their lifestyle or interest. For instance, Chatr (41 years) explained, “I play PUBG because it is a shooting game. I like shooting.” Samon (47 years) chose to play Fashion Fantasy because in real life she likes to dress up.

#### 4.2.2.4 Partners in Playing Games

The in-depth interviews from 32 informants, who were adult gamers, regarding their partners in playing games, are presented in the following section.

1) Most of the informants (18) preferred to play alone. The gamers, who played alone were Sarocha, Kanok, Thitima, Marut, and Pichai as follows:

I play alone. I don’t like playing with other people. My son plays his game. We each play our own game. We don’t play together. (Sarocha, personal communication, April 25, 2019)

I play alone. I have never played with anyone. I don’t have any friends playing games. I don’t communicate with others. I just play my own game. (Kanok, personal communication, May 20, 2019)

I don’t talk to others. There might be those, who come in but I am not interested. I don’t even talk to my own child. We play our own game. (Thitima, personal communication, May 29, 2019)

2) Those who like to play games alone but would join missions with others during competitions, for example, asking for hearts, and sending hearts to other players. In Candy Crush players can exchange items or water the plants

for others in Hay Day. There are also links to invite others to play the game. These gamers include Krit, Wee, Panee, Tong, Hathai, Nicha, Ura, and Samon.

I play alone at home. I know I have friends, who play this game. My children play it too. We send hearts to each other but are not interested in the competition. Winning is good. It makes me feel energized. (Krit, personal communication, June 17, 2019)

There is automatic greetings in the game. If you are a member in the game, it would inform us to greet others or share with others. I share to get points. For instance, I might get 50 points for sharing. (Tong, personal communication, May 28, 2019)

I don't play as a team because I have my own style. If I play as a team, there would be rules. Someone would tell us what to do. There is no freedom so I don't like to play as a team. I only compete with the people I know in the office. (Nicha, personal communication, October 5, 2019)

I play alone but sometimes talk to parents of the children's friends. This is because when I play I have to login through Facebook. When we meet, I would thank them for watering the plants (in the game) or I ask favors. However, we usually play on our own and do not form any group. (Ura, personal communication, May 27, 2019)

I play alone but sometimes there are people, who join me. Some will ask for hearts and I give them. However, there is no contact. I am playing Fishing Strike, which has guilds and teams. I join the teams but don't speak with anyone. This is because the game facilitates each person to play on their own. The game assigns us to teams consisting of people we do not know. So I just play without speaking to anyone. (Samon, personal communication, June 12, 2019)

3) There are some of players, who form teams with their friends or colleagues from their workplace. They might play separately offline then send the score in to contribute to their friends in order to compete with other teams. They might sometimes make appointments to play games together online to compete with other teams. This includes Kant, Dech, Piyamat, and Piradee.

Usually I play alone because I don't like to socialize with others. I am afraid I might disturb them for instance asking for hearts. When people ask me, I don't like it either. However, recently, my office mates set up a team on Homescapes to fight the teams that game has randomly assigned to us. We still each play on our own but when teammates die, we can sent points to help them. (Kant, personal communication, May 27, 2019)

I play as a team. When I am in the office, I join a team of 5 office mates. We battle with other teams. When I am at home, I play as a team, if my office mates and friends are online. However, if no one invites me, I will play alone because the game would automatically random a team for me. I would then team up with people I do not know. So, when I am at home and no one on my team is online, I just join with other teams. (Dech, personal communication, May 23, 2019)

I play alone and sometimes I play with my friends, who are mostly from my office. We plan as a team to compete with other teams. We get points when we win. (Mas, personal communication, May 29, 2019)

Sometimes we talk about the game among friends in the office. We set up our team because nowadays the game would invite us to compete with others. Even if we play alone the points would be added up to the team. We form teams to compete with others, whom we do not know. (Piradee, personal communication, May 30, 2019)

4) Some of the informants don't have the time to go online and play with other gamers, whom they did not know to join online missions. For instance, this includes Pitak, Suthep, Tanakorn, Pongthorn, and Warut. Tanakorn and Pongthorn are similar because they often play alone because their work obligations are too much so they do not have the time to play seriously as a team. Thus, they usually play with the team they have been randomly assigned to by the game. Warut often joins team of foreigners.

When I play, the game would organize teams by random selection of players in the country. I join the team but I don't invite anyone. I am not a serious player. I just play to reduce the stress and collect the points. I don't

think I would play professionally so I don't have a serious team. (Tanakorn, personal communication, October 5, 2019)

The game I play needs a team so I need to join others to compete. I need to join a guild to be part of a team with other players, even if I did not know them before. Most of the players are foreigners. I only know them in the game. Sometimes I play alone. (Warut, personal communication, June 5, 2019)

5) There are some of the informants, who use games to strengthen the relationship in the family. This includes Anucha, Pawinee, Sombat, and Suphan, who are in their retirement age. They use games as an activity that they enjoy with their children. Raksa uses games as activities she can enjoy with her children. Chatr revealed playing games with the nephews, nieces, and friends, while Tanya used games to persuade her nephews to eat or do daily activities.

My relatives all play the game. When I get the lead in terms of the points, I have something to say to the rest. It feels really good. (Anucha, personal communication, June 16, 2019)

It is one of the activities I do with my kids. I teach my children how to play games because it helps them to think quickly, have concentration, and perseverance. I used to play with the subordinates in my office. This is because games help to teach planning. I allow my subordinates to play games at work but it should not interfere with the work performance. (Raksa, personal communication, May 30, 2019)

When I was playing PSP, I had a small nephew, who was always interested to watch. He did not always watch us so I used it to get his attention. I will call out that PSP is in the bag, if you don't eat, he won't come out and play. (Tanya, personal communication, May 18, 2019)

#### 4.2.2.5 Paying to Purchase Items in the Game

The in-depth interview about expenditure to make purchases in the game revealed that some of the respondents did not make any purchases in the game.

Some used to make purchases in the game but no longer do today. However, there are those who prefer to pay for in game purchases to develop their characters.

1) Informants, who did not pay to buy items in the game

The research findings indicate that a majority of the informants did not spend money on purchasing items or objects in the game. They had different reasons and found ways to get around it. For instance, Sarocha explained, “I never pay any money. So, I have to have many games to play. When I run out of power in one game, I play another game.” This is the same as Tanya and Hathai, who plays many games without paying any money.

Wee and Kanok admit that they do not pay money in playing games. Kanok explained further, “I sometimes pay to buy games but I won’t pay for hearts or items or weapons.” Dech explained that when he was young he played arcade games but now I never spent to buy items or new characters to fight in the game. He uses his expertise to play games while Kant changed the device and played a different game to wait for the power to come back up.

Some of the informants never spend money to buy in game items because they claim they are not in a hurry and can wait. This includes Ura, Thitima, Pichai, Raksa, and Marut, who said they can wait for the power to come back up or regain hearts, without making any payment.

2) Informants, who used to pay to buy items in the game but no longer do

Some of the informants used to pay for in game purchases but no longer do. This includes Panee, who admitted to paying 2-3 times. The total is no more than 500 baht. She bought the items due to the promotion so she can move up to a different level. Piradee explained, “I used to pay to buy items, it was a battle game and required payment to continue playing. I asked myself why I have to pay to continue playing. I slowly stopped playing and now I don’t even make any payment.” Meanwhile Tanakorn explained, “I only paid to play Cookie Run with my girlfriend. Now I no longer play it. I currently, play RoV. I don’t pay anymore. I am a freebie type.”

In the past, during the peak of my game, I would pay about 300-500 baht a month. At that time there is the monthly ticket function, which means it is a

special privilege for a month so I have to play for all its worth. (Pitak, personal communication, September 19, 2019)

### 3) Informants, who voluntarily pay to buy items in the game

Some of the informants are willing to pay to buy in game items. Most of them explained that they paid to develop their character, the item is worth the money, promotion such as buy one get one free, or being sure that item would help them win the game.

I play Line Pop, for which I must occasionally pay to buy tickets or diamonds in order to win. I have to pay sometimes. I pay through the credit card but for the most part I pay a minimum of 70 baht. However, if I continue paying all month, it would wind up reaching a thousand baht or two. This is because the game has interesting promotions like pay for 4-5 special characters at the price of 300 baht. It feels like a worthy deal. However, if I feel that I have spent too much, I would spend less in the next month. If I travel abroad, in that month, I would not make any purchases. (Tong, personal communication, May 28, 2019)

The respondents, who made purchases in the game can be categorized as those, who don't make regular purchases, and those, who made purchases from the item mall every month. The most important issue is the worthiness of the money spent. The gamer has to be certain that the cost does not become a problem for them in their daily expenditures. It is considered a payment for entertainment.

#### (1) Those Do Not Make Regular Payments to Buy Items

Some of the informants explained that they did not pay regularly every month. Warut explained, "After playing and paying a lot, which is about 1,000-2,000 two times. Today I spend about 100 baht and do not make regular payments." While Samon admitted paying a lot in the beginning but have reduced the payment. "I was really addicted to Fashion Fantasy at first. I like the dresses so I often bought clothes. Later I got bored with the game. I don't regularly make payments in the game. In fact, I only do when there is something interesting and pay only for

buying apparel in the game. If I don't like it I won't buy. Each time I spend about 150-200 baht."

Jirapetch admitted that to buying items in games regularly on average 500 baht per month. Today the expenditure has been reduced. Suthep explained, "I buy items, cards, and gold coins. Since Pokémon Go was launched 3 years ago, I made a record in paying about 7,000 baht part of it is because I have many accounts."

## (2) Those that Make Regular Monthly Payments to Buy Items

There are informants, who pay regularly every month. These include Mas, who explained, "I bought gold coins, investing about 300 baht per month or 100 baht per time." Chatr explained that the amount of money to promote items inevitably is game.

It depends on the game I play. If it is PubG, I don't spend anything, however, I spend some in Ragnarok. I put money in the card sometimes. Ragnarok is different because it is important to collect the level in a short time. When you are playing at higher levels, there are more quests. I am not like the kids, who can play for long hours. So, I have to spend some money to increase the levels faster. PubG has no levels. All the players are the same so it totally depends on the ability of the players. If you want to pay, you can buy for clothing, skills, and guns. However, I think it is unnecessary so I only spend on Ragnarok, at about 300 baht a month. (Chatr, personal communication, June 26, 2019)

Nicha and Ake has a budget limit of 2,000 baht. This is based on the amount of money that won't affect the livelihood of the people involved and provide an opportunity to seek more entertainment.

I pay about 2,000 baht a month on games. I think that I can work and earn money. This is my own money and it is not too much, when compared to my income. However, I have a limit to my spending. If I want anything more I would have to wait for the next month. I pay for the game based on the fact that I have an income. I make sure that the payment made does not cause me any trouble. (Nicha, personal communication, October 5, 2019)

When I add up all of the games I play, I pay about 2,000 baht per month. But I don't go out drinking at night. I consider it entertainment. I pay for Pokémon only on event days to pay special box promotions, which are attractive. For me when gamers buy items in the game it is a way to support the game for continuous development. On Facebook there are many free games and don't last that long. Therefore, I feel that I should spend some money in the game. It is not something pointless but it is a way to help the game survive. (Ake, personal communication, July 24, 2019)

#### 4.2.2.6 Access to Game Information

The in-depth interview showed that informants are open to news regarding games. It found that most of the respondents would do their own research to find out about game issues that is in line with their interest as presented in the following section.

1) Most of the informants seek their own information through the Internet more than asking others. This includes Sarocha and Kant.

I learned on my own. I did not ask anyone. I loaded the game and learned how to play it. In addition, it would pop up on Facebook. So, I was interested and went in to see. In the application that I loaded also recommended the game. (Sarocha, personal communication, April 25, 2019)

Whatever I am interested in I would search for information on Google. Sometimes, when I see people play I would ask what game they are playing and search for information on my own. (Kant, personal communication, May 27, 2019)

2) In searching for information on the Internet, it is found that most of the informants accessed news through social media. For instance, Karanya and Suthep found information about games in the Line Group or Facebook Group like Piradee, Samon, and Pongthorn.

In the Facebook feed, it comes up quite often. When the algorithm sees that I play games, it keeps appearing in the feed. Also, there are

recommendations are in the Play Store. (Samon, personal communication, June 12, 2019)

Most of the time, there are pop ups in Facebook. When it comes up, I get in to see. (Pongthorn, personal communication, October 6, 2019)

3) Some of the informants study about games on YouTube or channels of Game casters such as Dech, Chatr, and Pitak.

News about games can be found on Youtube. This is because RoV allows the game play to be recorded and many good players post it. I go in and watch to learn but never press the “Like” button. Most of the time, ads for new games appear on Facebook regularly. (Dech, personal communication, May 23, 2019)

I search on Google, which would serve many clips from game casters or good gamers, to get knowledge and tips for winning. (Chatr, personal communication, June 26, 2019)

I follow about 2-3 really good game casters. These are really good players, who present great playing techniques on Youtube. (Pitak, personal communication, September 19, 2019)

4) Some informants are open to information about new games from application stores such as App Store, Google Play, or advertising in the feed on the mobile phone.

When you often play games, the app stores, would provide updates about games continuously. I don’t follow such news in other channels. (Raksa, personal communication, May 30, 2019)

I usually get news about new games from Play Store. It would recommend games suited for me. I would go and check it out. If it is my type of game, I would play it. (Warut, personal communication, June 5, 2019)

Sometimes advertising would pop-up on the screen of my mobile phone inviting me to check it out. If it is fun, I would play it. (Panee, personal communication, June 22, 2019)

5) At the same time there are some of the informants, who learn about games from their friends and family members such as Anucha, Pawinee, Sombat, Marut, Wee, Mas, and Tanakorn. For instance, Anucha and Pawinee, they received information about games or asked questions from their family members. This is similar to Sombat and Marut, who in addition to searching for information online, they would ask from their children, who also play games. Wee also receives information from children and colleagues from the office.

Usually, I learn from my friends and younger brother. When I have problems, I ask my friends and my younger brother. I sometimes watch my brother play. However, we play separately based on the individual's style. (Mas, personal communication, May 29, 2019)

Most of the time I get information from my younger friends. When I hear a lot of people talking then I become interested in the game, and search on the Internet. When I was young, I used to buy game books but now I only read online. (Tanakorn, personal communication, October 5, 2019)

### **4.2.3 Motivation in Playing Digital Games of Adults**

The study titled, "Adult's Social Engagement through Digital Game" categorized motivation into two types, which are motivation from players and motivation from games. The qualitative study utilized the in-depth interview methodology from 32 respondents in addition to focus group interview of 4 respondents as presented in the following section.

#### **4.2.3.1 Motivation from Gamer**

The study about motivation from the gamers showed that the motivation in terms of entertainment is the most important factor for most of the informants, when compared to the other three factors, which are relationship to others, identity creation, and information search. However, the research findings indicate that informants are highly motivated in playing many games at the same time. Thus, the data from the interviews can be categorized and presented based on the motivation factors in the following section.

1) Entertainment motivation-From the interview with informants it is found that entertainment is the most important factor in playing games

for most of them. The entertainment motivation found include reducing stress, play to kill time, avoid boring daily routine, play for enjoyment, and avoid problems.

The informants, who play to reduce stress, are Piradee, Mas, Tanakorn, Sarocha, and Kanok. Sarocha reasoned, "I play to reduce stress and sometimes I do not have time to go outside. When I am at home and cannot figure out something, I take a break and play games." Kanok gave the reason that it helped him to stop thinking about work, "I play to reduce stress. It is quite enjoyable and it helps me to stop thinking about work." Mas admitted that in addition to reducing stress, playing games helps to keep it all together, "At first I played to relax, reduce stress, and improve focus. When I play games, I don't have to think about other things it helps me keep it together." Tanakorn explained that at first he played because he saw his friends playing so he was interested. This was before he had more work responsibilities, thus playing games changed from stress reduction to brain training.

Some of the informants including Wee, Samon, Nicha, Tanya, and Warut play for enjoyment. For instance, Wee said, "I like to play games a lot because there is so much variety. I enjoy playing so much it is like breathing that I have to play every day." For Warut he feels that playing games is more entertaining than other activities. He likes games that are novel and have unique identity. Tanya explained, "I started wanting entertainment because it is fun. Later it is about reducing stress and winning, which I find quite challenging."

There are also informants, who play to kill time or avoid boring routines, such as Thitima, "I play to reduce boredom when I have free time waiting for my kids." Marut said "When I have free time and nothing to do I play games to kill time." Panee reasoned that playing games helps to reduce boredom from work. She chooses the games that are popular and fit her preference. Ura started to play games to kill time. Krit is the same. He explained, "I play to kill time so I don't have to think about other things." Pongthorn admitted that he played games when he could not figure out something at work, "I play to kill time or when I hit a snag on a project. I would play for about 2-3 hours before I come back to continue my work."

The informants, who play games to avoid problems include Kant. "At first I played games because there were some problems on the project I was

working on. I did not know what to do so I escaped to play computer games. Once I started playing I found it was fun and continued playing ever since.”

2) Relationship motivation-The research findings indicated that some of the informants have the motivation to play games to reduce loneliness. Some play because people in their family or close social circles recommend them to do so.

Informants have the motivation to play to reduce loneliness such as Sombat, Suphan, Anucha, and Pawinee. They play games to reduce loneliness because they have retired. In addition, they have relatives, who invite them to play games, which have led them to play continuously up to the present. For instance, Sombat admitted, “Games help me to reduce loneliness and makes me think.”

Informants are motivated to play games because of friends or family such as Jin and Chai, who play because of their nephews and nieces. Jirapetch and Karanya are motivated to play games with the same reason as Pichai, because their friends invited them to do so. Ake, who played since he was young, explained that he played Pokémon Go because people close to him begged him to play.

It started with people close to me like my girlfriend, friends, and my boss, who asked me to coach him for which I am very happy. After playing games, I realize it was a lot of fun. I went back to learn the game’s story, which spanned many years. I wanted to know about how the game started and found that it was more attractive and interesting. The game started with the dream of a child, who loved animals, and a traditional Japanese game. When I knew about it, I found it very interesting and appreciated the importance of community. It made me feel the warmth. (Ake, personal communication, July 24, 2019)

3) Identification motivation-Some of the informants started playing from the motivation of being in trend with the times and want to find their identity.

Some informants play game in order to catch the world trend. For instance, Raksa explained, “I like playing games because it is in trend. I want to be in with the times and it is a lot of fun.” Suthep also said he was always following the news about Pokémon Go and was waiting to play this game because he knew the characters before.

I returned to seriously playing games with Pokémon. I play only one game. I am interested in this game because I know the animation so I know how to play it. The characters are also beautiful even in the game. (Suthep, personal communication, July 24, 2019)

Some of the informants play games to show their identity such as Pitak and Hathai, who want to spend more time alone after finishing their duties in raising their children. Thus, they choose to play games as a solution. Pitak explained that playing games is like replacing the sense of self that is lost in the real world.

When the kids have grown, I want more time for myself. I want to do something that reflects, who I am because I felt very tired raising my children. Others might choose to play sports or go out, but I choose to play games. (Hathai, personal communication, June 2, 2019)

When I play games and get top ranks, I feel proud. It is like a representation of my identity. The compliments replace what we have lost at that point in time. I cannot stop developing the character because I need to play to get higher levels and maintain my ranking. (Pitak, personal communication, September 19, 2019)

4) Information Search Motivation-The research findings indicate that some of the informants are motivated to play due to curiosity and would like to learn more about the game as explained in the following section.

I started to see the kids play and became curious about how fun could it be. I have a lot of free time so games help me to think. When I have to wait for something for a long time, I would not feel irritated. Instead of monitoring how long I am waiting, it makes time go faster. (Tong, personal communication, May 28, 2019)

When I started playing games, I was an English tutor with many students. Many of them played games. At first I was against kids playing games but I found that the kids were very sharp. They could get into good universities, despite playing a lot of games. I became curious so I started playing. (Tri, personal communication, July 24, 2019)

#### 4.2.3.2 Motivation from the Game

The motivation in playing games among middle-aged adults is primarily derived from the game that makes them play continuously. In this study, the motivation from the game has been classified into three groups, which are Achievement motivation, social motivation from playing games, and immersion motivation in the world of the game. The qualitative study revealed that informants derive motivation from the game in terms of success, social, and also game atmosphere. Most of the informants give importance to achievement in game playing more than other factors.

1) Achievement Motivation-The research findings indicate that motivation comes from moving up the level and receiving rewards. The motivation from the challenge is the most important driver cited by respondents. Tanya said, “I like to play to win so I can move up to higher levels. I am very proud making it fun to tease the others.” Nicha admitted that playing games is challenging in winning raids and passing levels. She did not compete with anyone but rather competed with the game. This is similar to Piradee, who said she started playing games to reduce stress but later liked it because it was difficult. She moved from just playing simple games to more strategic planning types because thinking about how to win was challenging. This is similar to Kant and Tong.

I want to win. I don't really care for the characters. I like winning by going up to higher levels. I don't really look at the score. I just want to move up to higher levels. If I don't win, I feel uncomfortable. (Karnt, aged 51 years)

I like the challenge the most. I want to win and continue stepping up. The game does not stop developing. Upgrades to the system happen all the time so I have to wait. The games become more difficult. I happen to have

people I know playing in the game so it is more challenging for me. (Tong, personal communication, May 28, 2019)

I like to collect coins and modify the home. I also play arcade game, Fishdom, I like to see the fish and feed them. (Panee, personal communication, June 22, 2019)

However, some of the respondents were not interested in moving up levels or the competition. They played games continuously because they were motivated by the game system, which enables players to train their brain to think or manage the game. This includes Ura, Dech, and Sombat.

I like to manage and plan about products. I think it helps me to train my brain. I don't care about moving up the levels and I don't like competition. (Ura, personal communication, May 27, 2019)

Presently, I like to play because I don't need to think much. I can practice strategy like where should I run and where should the members in the team go. (Dech, personal communication, May 23, 2019)

There is something challenging in the game all the time. Promotions will always pop-up giving away freebies like playing another 3 times free. Sometimes it gives away bombs. It always challenges us to move forward by using tools to entice us. (Sombat, personal communication, June 17, 2019)

2) Social Motivation from the Game – Some of the informants are motivated to play games continuously from their liking of the atmosphere in the playing the game and other gamers. They like the atmosphere of the competition and conversations with the other players. For instance, Anucha, who after playing with his family, felt that it was more fun to move up level. This is similar to Pawinee and Suphan, while Tri was impressed with the cooperation in defeating the boss (joint activity in Pokémon Go).

It is fun because we can see that others are in the lead so we can't just let them do that. As a result, we fight to move forward and when we get ahead, it is a very fulfilling feeling. Sometimes, I send Line to my relatives. We

sometimes talk down to each other, but it is nothing to be angry about. (Anucha, personal communication, June 16, 2019)

When there is an event like the emergence of a black egg in the fountain, I have two accounts so I would invite others to join. We help each other to attack the Pokémon. It is really impressive because we don't know each other before, yet we help each other as a team. (Tri, personal communication, July 24, 2019)

3) Game immersion motivation-The research findings indicate that some of the informants are motivated from the environment in the game such as the creation or development of characters in the game, decorating the garden, or dressing up characters. This also includes the use of the game as a means to escape thinking about problems in the real world. For instance, Jirapetch explained that in addition to the challenge, he liked the beautiful moving images and animation. Warut gave a similar answer saying that the first thing that attracts him is beautiful images. For Kanok, he said games helped him to escape thinking about work.

The beautiful images come first and the game being fun comes next. It has to be novel. New games that are the same as the old ones, I would not play them because I would just stick to the original. (Warut, personal communication, June 5, 2019)

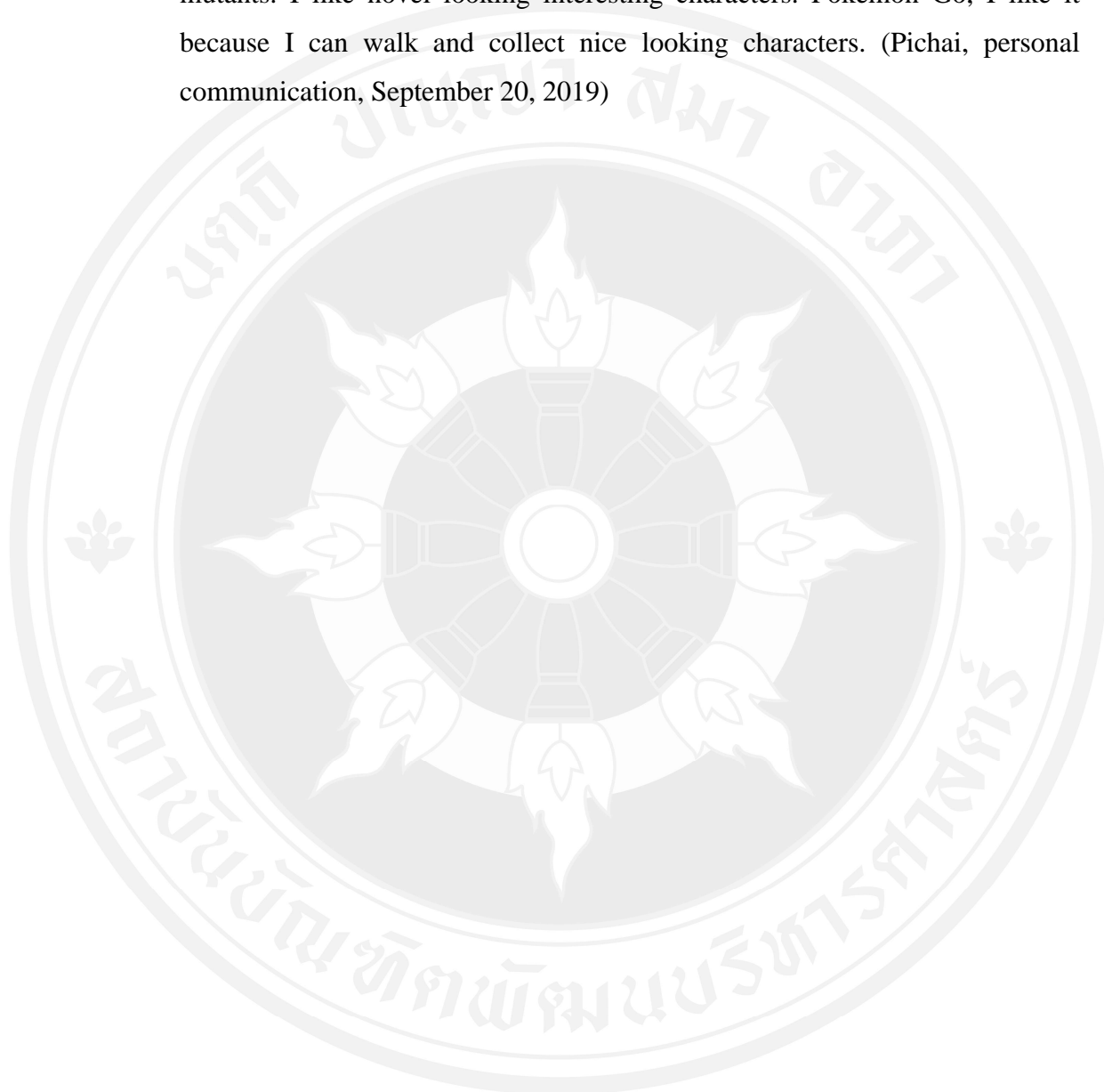
Games enable me to think and escape from my work. For me I don't compete with anyone. I don't care about moving up the level or winning. I just play to relax to stop thinking about work. (Kanok, personal communication, May 20, 2019)

I like games that are colorful, good techniques like bouncing or bombing, realistic effects. It is exciting because I find it more challenging and beat it. (Hathai, personal communication, June 2, 2019)

I like games where I can dress my characters because I like dressing up. One of my favorite games is Food Fantasy. It is a fashion game that is very beautiful. (Samon, personal communication, June 12, 2019)

I like to watch the characters grow. It is my pride since I started with nothing but built it up and developed the characters to where they are today. (Pitak, personal communication, September 19, 2019)

I like games that have nicely designed characters that are unique like mutants. I like novel looking interesting characters. Pokémon Go, I like it because I can walk and collect nice looking characters. (Pichai, personal communication, September 20, 2019)



## **CHAPTER 5**

### **RESEARCH FINDINGS PART 2**

Chapter 5 reports the findings of the second part of the study, examines adult gamers' relationship with digital games. In addition, it examines the characteristics of the social relationships formed from playing digital games and the communications form used to build social relationships in digital games. The data is collected using qualitative research methodology. Data collection was conducted using in-depth interviews and focus group in order to answer research questions 3 (How do adults engage with digital games?); 4 (How do adult gamers engage in social relationships with other players?); and 5 (What is the characteristics of the communications process in creating social relationships among adults in digital games?).

The findings are reported based on three main topics, which are 5.1 "Adult's Game Engagement", 5.2 "Adult's Social Engagement through Digital Game", and 5.3 "Communications Process for Creating Social Engagement through Digital Game".

#### **5.1 Adult's Game Engagement**

In this study, "Adult's Social Engagement through Digital Game" the qualitative research methodology was used in order to examine digital game engagement at the individual level. The study explores the understanding, feelings, and behavior relevant to the game. Data was collected using 32 in-depth interviews and focus group of 4 individuals totaling 36 informants. The data collection tool was an open-ended question guide that allowed informants to freely express their opinions and preferences in playing the game. The results could be classified into four topics, which are engagement with the environment and atmosphere in the game, social engagement in the game, personal engagement, and engagement in playing games.

### 5.1.1 Engagement with Game Environment

The study shows that engagement with the environment and the atmosphere in the game. This can be classified as engagement in terms of understanding, feelings, and behavior in playing the game.

5.1.1.1 The study regarding the understanding informants have to the environment and atmosphere in the game revealed about engagement that comes from familiarity with the environment or atmosphere. This includes familiarity with the content, environment, or characters that have previously been from a book or movie. The similarity of the game with existing games. In addition, the beauty and novelty of the characters and atmosphere in the game also makes it attractive. The informants such as Warut and Samon, like the aesthetics and novelty while Chai and Suthep choose the games based on the characters that they are familiar with since they were young such as cartoon characters. Pongthorn chooses to play RoV because it is similar to DOTA, which he has played in the past.

Beautiful images are the most important factor but the game must be fun too. It should be unique. There are only 4-5 types. Some of the new games are just like the old ones so I don't play it. (Warut, personal communication, June 5, 2019)

I like beautiful images but I bore easily so I change the games I play all the time. I like games that are beautiful and novel like fishing game has new fish coming up all the time or cooking has cute images. (Samon, personal communication, June 12, 2019)

I know Pokémon from my kids. They have watched it since they were young. I also like cartoons a lot so when the kids played the game, everyone in the family joined in. Today the kids have stopped playing the game already but I am still playing it. (Chai, personal communication, July 24, 2019)

I am interested in the game because of the cartoon so I became curious and tried playing the game. I also look at the beauty. When I played Gameboy, I was not too impressed with the graphics. I might be curious about the game but if it does not look good, I would not play it. However, if it looks good, I would play and collect the beautiful characters. (Suthep, personal communication, July 24, 2019)

I used to form groups to play DOTA, but after everyone started working, we had different schedules. I don't have the time to play. RoV is developed from DOTA. The way to play it is very similar so I don't have to learn about the new characters all over again. The game play is the same. (Pongthorn, personal communication, October 6, 2019)

5.1.1.2 The findings regarding the feelings towards atmosphere and environment in the game includes importance given to effects, beautiful graphics, natural sounds, and realism. This creates excitement and fun, while playing the game. For instance, Jirapetch explained that he is attracted to the nice graphics while playing the mobile game. Hathai liked the realistic colors and techniques. Pichai admitted that he enjoyed collecting the strange and beautiful characters.

Games today have beautiful graphics and colorful design. It has numerous techniques like bounce or explosions. The effects are very realistic. I like this a lot, which makes the game fun and exciting. (Hathai, personal communication, June 2, 2019)

The best part of the game is the animation. When I play and see the movement, I think it is very beautiful and attractive. (Jirapetch, personal communication, June 27, 2019)

I like games that have nice character design or novelty such as mutants, with unique interesting looks. I like Pokémon Go because I can walk and collect beautiful characters, which makes it fun to see that I have collected more of them. (Pichai, personal communication, September 20, 2019)

5.1.1.3 The research findings regarding the game playing behavior revealed that the environment or atmosphere in the game contribute to the informants' behavior. For instance, Mas and Napha play Gardenscapes because they like the atmosphere of the garden. They also have opportunity to decorate gardens in the game. This is similar to Piradee and Nicha, who also like Homescapes because she can decorate the home. Panee enjoys collects coins to buy fish tanks and feed her fish. Jin decided to play because of the exciting graphics and the changes to the characters that appear in the Pokémon game.

I like gardens because I can level up enabling me to get coins to decorate the garden as I see fit. (Napha, personal communication, June 18, 2019)

I like to play because I can decorate the house. It is more complex than just mine sweeping because it is necessary to plan in order to win. I have to plan how to get high scores in order to get coins to decorate my home. (Piradee, personal communication, May 30, 2019)

I choose to play games that are colorful and beautiful like Homescapes. I choose it because I can decorate my house. I am not concerned about the steps in getting it. I am interested in choosing furniture to decorate my home. (Nicha, personal communication, October 5, 2019)

For instance, in Fishdom, I have to collect coins to buy fish tanks and decorate it with beautiful fish. Then, I have to feed the fish. It is really fun and enjoyable. (Panee, personal communication, June 22, 2019)

My daughter was playing Pokémon Go and asked me to help her capture the goldfish in the game. When we got 400 of them, she told me to evolve it and when I saw the beautiful results, I loaded the game and started to play in my own phone. I have been playing ever since. (Jin, personal communication, July 24, 2019)

### **5.1.2 Engagement with Gamer Society**

For this topic, the study examined the informants' feelings and behaviors with regards to their game playing behavior and engagement within game social group.

The research findings are summarized in the following section.

5.1.2.1 The study in terms of thoughts and understanding of gamers revealed that engagement could be classified into two groups. First are those who like to play alone or play with those close to them. Second are those, who can play with people they do not know before.

Analysis regarding how open informants were to new relationships revealed that some either played alone or only with those who were close to them, some viewed games as a space for cooperation, and can develop relationships in real life. Mas confirmed that games provide the opportunity to play with others even

though they previously do not know each other. The game provides opportunity to contact with others but prefers playing with friends from work or acquaintances. This is the same as Karanya, who would play with people she knows, which is the opposite of Pitak, who views games as a space for cooperation since it cannot be played alone. This enables him to have more friends. Tri believes that gamer's society could be developed to real life friendships.

...we get to meet friends, who in reality could be anywhere in this world, we meet in the world of the game. We communicate through the game chat. Later chat systems enable conversations through the microphone. There are places in the game, where we cannot play alone. We need to play as a team by bringing together friends to form a community. (Pitak, personal communication, September 19, 2019)

Some of them we know from our old groups and have remained friends to this day. I have this one friend I met while biking around to catch Pokémon. I was thirsty and I realized I forgot my wallet. This friend, who went with me, did not know me before this. We had just met. He told me it was ok and treated me to a drink. From that day onwards, we have been friends. (Tri, personal communication, July 24, 2019)

The next issue is communications. Findings indicate that although some avoid playing with strangers in the game, in the real-world society they use games as a means to communicate both intentionally and non-intentionally. Tanya used games to communicate and get close to the children. Sarocha admitted that games enabled better understanding across the different generations. Raksa believed that playing games is one of the activities that bridges the relationship between family. During the free time she would play with her daughter by choosing the games and joining in the same network. In addition, games can be used to build relationships with subordinates.

Through playing games, I get to talk to more teenagers. It enables me to communicate better with them. Since, I work with the younger generation, I am able to speak the same language with them. (Sarocha, personal communication, April 25, 2019)

It gives us a conversation topic. When I see my nephew playing, I strike up a conversation. Let's say he is playing RoV, I know some of the terms in the game and I use them in the conversations. This makes children feel that I am in the same group as them. (Kant, personal communication, May 27, 2019)

Sometimes I play games with my junior colleagues. I help them out sometimes and they return the favor. This creates a good relationship. (Raksa, personal communication, May 30, 2019)

5.1.2.2 The research findings in terms of feelings towards gaming society revealed that, firstly informants who played game with their relatives felt closer to them and felt more exciting and fun, especially those who are retired such as Pawinee and Suphan. They admitted that playing games with family members enables them to communicate more often. Krit and Anucha explained that the games helped them to reduce loneliness once they were free from work.

I started playing with family members. The kids started playing and taught me how to play. At first I did not think of competing but when I started winning, I felt enthusiastic and it was so much fun. It is a good brain practice and reduces boredom. (Krit, personal communication, June 17, 2019)

My elder brother invited me to play games. In our family of seven, four of us play games. In the beginning we spoke often. We had our family Line group, where we brag about our victories. (Suphan, personal communication, June 18, 2019)

Secondly, regarding playing with strangers online create both good and bad feelings. In terms of good feelings, Suthep confirmed that the more people joined in the more fun it was to play. On the contrary, Panee viewed today there are too many gamers and people end up not knowing each other well. So, she feels afraid and unsafe to play with those she does not know. In addition, some of the informants have had negative experiences with other gamers. For instance, Tanakorn, had been treated badly by other gamers while playing the game. He admits not feeling good. However, Dech has often experienced quarrels among members in the team. He even gave the

advice that it is something that players need not pay attention to. This is because the online world is not the real world.

Pokémon Go that I play requires cooperation. We need a lot of people to defeat the boss. Before this I played alone. I did not know how to play so I started playing alone. This is when I went on Facebook and found groups. We got to know each other and became friends. Having a social group makes it more fun to play. (Suthep, personal communication, July 24, 2019)

When I play as a team, I die often so I get complaints from the other members. Sometimes I feel angry so I just follow them. I do whatever they tell me to do. I don't retaliate because I am not comfortable with chat and try to ignore it. (Tanakorn, personal communication, October 5, 2019)

I am not interested. It is the online world, which is not who I really am. There is no point to talk back. Some people just joke around. They quarrel and challenge one another to battle, it is not like a real fight. It just happens in the game. (Dech, personal communication, May 23, 2019)

5.1.2.3 The study regarding the game playing behavior with regards to the society of gamers, it is found that most of the informants prefer to play games with people they do not know. Some of the informants are engaged with games that require playing as a team. They would even cooperate with other gamers in order to accomplish the mission. For instance, Dech, who prefers to play games that require teamwork, revealed that people in the same team would often talk to each other. They would consult about the game. Those, who join the game and do not know each other previously would just talk about games while playing. When the game is over, they don't talk to one another. They might give likes sometimes. Warut has many accounts for playing games to play with many groups. Suthep, who likes to travel also likes to play games, while he goes around. He would ask to join groups wherever he goes.

Some games like Seven Knight I have been playing with 4 – 5 accounts. The reason I need many accounts is because it has a guild system requiring playing as a team. So when I start again I would need to join a new guild so I need many accounts. I don't have a group to play games with my family because we can't agree on the time to play together. We don't have the

same free time. In addition, this game is played around the world so I join international teams. This is why I have many accounts. (Warut, personal communication, June 5, 2019)

I first I hanged out with those, who lived near my place, then I realized the world was bigger than this. Now when I meet any group, I join them so I am a member in many groups. I have met people from many provinces. My Line is now very cluttered. (Suthep, personal communication, July 24, 2019)

Some of the informants used their experiences from the game to use in their work. For instance, Chatr, who works in creating content marketing, had an interesting outlook. Being part of the game enables better understanding of the target group, who are gamers.

I get to see their spending behavior and what they think while playing games in a big community. I can see their chats and learn what is their interest. I get to see, the interest of people of all ages. Adults don't talk too much. It is usually the younger kids or working people, who chat. In Ragnarok, there is a guild system. For instance, during the election there are many policies. We talk about these things and the various ideas. Thus, in addition to entertainment I can learn about the way gamer's think. This is truly beneficial to my work. (Chatr, personal communication, June 26, 2019)

### **5.1.3 Self or Identity Engagement**

The research about the understanding, feelings, and behavior in playing the game reflect the identity of the player through characters in the game. The research findings are presented in the following section.

5.1.3.1 The research findings in terms of personal engagement was a representation of the player in terms of thinking and understanding. There are two interesting topics. From the interview, it is found that most of the informants would choose the characters that best represent them and their preferences. They do not give much emphasis in terms of dressing up the characters or providing weapons. Most of them explain that they emphasize on playing the game. For instance, Warut explained that most of the avatar in the game he chooses is from his preference. He does not

care much about dressing the characters because the game has already provided it. Tanya explained that she chooses the characters provided in the game. Pongthorn likes to play tank characters in RoV because it is his preference and skill in playing.

In the game we use characters. There are no real names. We choose what the game offers us. I don't really care about the character design so I don't add any accessories. I am primarily interested in the game. (Tanya, personal communication, May 18, 2019)

It has to do with our own aptitude. I am good with tanks so I bulldoze the way. In the game there are different aptitudes. I does not necessarily represent me, but it is what I am good at so I regularly play this role. (Pongthorn, personal communication, October 6, 2019)

However, the findings regarding 2<sup>nd</sup> topic revealed that some people gave a lot of importance to the avatar they have selected. They view that the character represents them in the game. Pitak uses his character to meet friends in the game. He admits that he chooses characters in the game that is similar to him. It is part of social development driven by technology, which enables us to immerse ourselves in the game through the characters we create. I get to know friends through these characters. (Pitak, personal communication, September 19, 2019)

I choose the avatar is similar to me. For instance, in RoV, I would try different characters. I would choose the character that I like and I can play well. I have three such characters now. My goal is to be platinum so I have to develop the skills in playing my existing characters. (Dech, personal communication, May 23, 2019)

5.1.3.2 The research findings in terms of feelings and emotions reveal that some of the players feel a sense of success and pride, when the characters that represent them show progress or become successful as expected by the player. For instance, Pitak loses sleep playing the game to develop his character. The findings indicate that in some of the games replace or fulfill roles that cannot be done in real life. For instance, Ake uses the experience as a Pokémon trainer in his life.

Sometimes the game creates a sense of pride. It is like a substitute. In the game I can be a top player admired by many people. This is a substitute at a time of loss. At that time, I could not stop developing my character. I just keep on playing to get to higher level to maintain my status on the top. (Pitak, personal communication, September 19, 2019)

AR games have come to play an important role in modern life. We can live together with playing games. In particular Pokémon Go, which makes players take the role of trainers. It feels real that our life can go hand in hand with being a Pokémon trainer. The game can be referenced in our daily life. (Ake, personal communication, July 24, 2019)

5.1.3.3 Findings in terms of game playing behavior revealed that the type of game is congruent to the lifestyle of the player. This includes engagement with the character that represents the player, which impacts the behavior in playing games. For instance, Samon, who in real life likes fashion and dressing up in style. She is willing to pay for clothing for her character. Suthep likes travelling as part of his lifestyle so he likes Pokémon Go. It becomes the same thing. Pitak, on the other hand, is serious about planning ways to get coins and rewards to develop his character, while watching its growth with pride.

My style is to plan one trip a month. When this game came out, I get to play and gain new friends. For instance, I went to Krabi and met friends there. I met them through the game, while I was sitting around. We met and talked. It is the same wherever I go. Like I met new friends in Petchaboon too. Some of them have 2 accounts or 4 accounts. When we meet, we walk to each other. (Suthep, personal communication, July 24, 2019)

In real life, I like to dress up so I like games that have nice images. I like nice characters. For instance, in the fashion game I spend to buy clothing to dress my character. It is like dressing up a doll or mannequin. We compete in dressing up our characters. The game would random, who we would compete with. We compete on how beautifully we can dress our characters. (Samon, personal communication, June 12, 2019)

I like Turn Base RPGs. Now I am playing Summoners War, which is a game, where we develop a character. We start with a lousy sword and old armor. I lost sleep to plan on how to upgrade the weapons as the level goes up. It is a game that needs a long time to develop the id. It might take as long as 4-5 years. (Pitak, personal communication, September 19, 2019)

#### **5.1.4 Action or Game Playing Engagement**

Based on the topic of game playing behavior engagement or action engagement, an examination was made regarding understanding, feelings or emotions, and game playing behavior.

5.1.4.1 The findings regarding the understanding of game playing behavior reveal that most informants are positive towards game playing behavior. This is because they see the benefits in playing games such as training the brain and concentration (Sarocha, Krit, and Raksa), strategy, planning, and management (Piradee, Ura), tolerance (Hathai), and dedication (Nicha).

Fun is part of it but also I gain knowledge and practice my wits. I gain concentration and train my brain all the time so I don't have to worry about dementia. (Raksa, personal communication, May 30, 2019)

The difficulty lies in the planning. Even in the bomb sweeping games, it is important to plan in order to win as much as possible. (Piradee, personal communication, May 30, 2019)

I like management and planning of the products. It stimulates training of the brain through thinking. (Ura, personal communication, May 27, 2019)

Playing games is like a stimulation. When I want to move up level and fail, I stop because my dedication dissipates. I try to play games to move up level, which is a stimulation for my dedication. (Nicha, personal communication, October 5, 2019)

Games train us to have perseverance and thinking. Sometimes, I have to make sacrifices to get what I want. (Hathai, personal communication, June 2, 2019)

However, some of the adults have pointed out the negative aspects of playing games. For instance, Thitima voiced her concern that games are very influential particularly among youth. This might result in spending too much money. Wee likes to play games very much but is aware that playing too much games might cause problems with the eyesight.

For adults I don't think it has much of an impact, but for kids it does have a major influence. Adults need to monitor how much money is being spent and warnings need to be given yet sometimes they need to get their way. Sometimes kids want to buy certain things, so adults need to make sure it is not too much because they cannot stop themselves. (Thitima, personal communication, May 29, 2019)

I used to be very addicted to games. I always liked playing games. Today, I play much less because it affects my work performance and my eyesight has deteriorated. I eventually stopped. However, I have come back to play again but I try to control and play no more than 1 hour a day. (Wee, personal communication, June 3, 2019)

5.1.4.2 From interviews with informants regarding the feelings they have towards playing games, most of them reveal that they play games to reduce stress. For instance, Tanakorn and Kanok confirm that they play games to reduce stress. When they are stressed from work, they play games. Enjoyment in the game keeps their mind off the work. They enjoy thinking about how to win in the raids and move on to the next level. However, some of the informants admit that while playing games they feel frustrated (Tanya and Kant). They feel that way when playing the game does not go as planned. However, most of them try to control their feelings. They don't want to be too involved in playing the game because the goal is to relax not to become more stressed.

Sometimes I feel a bit frustrated, like 'come on it was really close how come I can't get it'. But I don't get flustered or angry. When I play with my friends and they get ahead of me, I feel excited. I won't give. I can't lose. (Tanya, personal communication, May 18, 2019)

I don't usually get angry. When there is a new quest, I feel really excited because it sparks my curiosity. I get excited. (Warut, personal communication, June 5, 2019)

I like the challenge. I want to win so when I do, the system would update and become more difficult. I want to win so I cannot stop. (Tong, personal communication, May 28, 2019)

...I used to get angry with the game. Like when I was playing Diabo, I was about to kill the boss then I died. Like what? I got very frustrated. (Samon, personal communication, June 12, 2019)

Sometimes I get stuck at a level for weeks without going anywhere. Do I get angry? No. I feel even more determined to win. I believe I must get over it since others can clear that level so can I. (Sombat, personal communication, June 17, 2019)

When I play games, I feel entertained. I usually play while waiting to kill time. I just continue moving up the levels, which is not too difficult. (Marut, personal communication, June 2, 2019)

Jin explained that there is a difference between the emotions of kids and adults in playing games. Kids are not afraid and have the courage to engage in battle more than adults.

When I play game that I want to win. There is one thing that I cannot beat the kids, they are not afraid of anything so I cannot keep up with them. I end up losing, which supports why kids are really good at playing games. They are willing to play bravely to win. As adults, we have lived through numerous life experiences so we feel afraid in playing games as well. (Jin, personal communication, July 24, 2019)

5.1.4.3 Findings regarding the expression of behavior shows that when informants engaged with playing games, they are more serious about playing such as planning to win, buying items in the game, or dedicating time to play the game. For instance, Kant has to play games every day in order to win and move up to a higher level. It is challenging and fun, while failing to play creates feelings of uneasiness.

Ura likes to play Hay Day because it offers a chance to practice planning. Nicha and Tri use experiences from the game adapting it to work and providing guidelines for daily life.

Hay Day is a game where players manage farms to produce food, harvest, and sell the crops. It takes time to take care. I like the management aspect since players need to plan what to do. I have to manage the goods and it helps me to think. I used to play it very serious, however, I realized I used too much energy playing this game. I ended up not being able to keep up with what I had to do since there is so much details. Later I had to reduce how seriously I was playing the game. (Ura, personal communication, May 27, 2019)

I feel involved with the game. For instance, when I put 3-4 blocks together and they explore, I feel that I have been successful. I get the coins to decorate my home. I am very dedicated in decorating my home. (Panee, personal communication, June 22, 2019)

When I interview job applicants, I ask if they play games. If they say they do, I will ask how they plan do they have logic and do they know how to manage their time. If they can play and still have good work performance, it would be one of the considerations for employment. (Nicha, personal communication, October 5, 2019)

Accumulation of characters and rewards in the game is like investment in stocks. It is knowledge that I can use in my real life. For instance, you need to know how much stardust you need to evolve a character. When I get the lucky character, I can evolve it with less stardust. Another thing is the selection of the Pokémon with the right ability to beat the boss in the gym. (Tri, personal communication, July 24, 2019)

The research findings could be summarized showing adult's engagement with games as presented in Table 5.1.

Table 5.1 Adult's Engagement with Games

<b>Adult's Game Engagement</b>		
<b>1) Game environment engagement</b>	1.1) Cognitive engagement	<ul style="list-style-type: none"> <li>- Familiarity with content, environment, or character that have previously seen from a book or movie</li> <li>- Beauty and novelty of the characters and atmosphere in the game make the game attractive</li> <li>- Similarity with previous game played.</li> </ul>
	1.2) Affective engagement	<ul style="list-style-type: none"> <li>- Effects, beautiful graphics, natural sounds, and realism create excitement and fun while playing game</li> <li>- Feeling enjoyable to collect strange and beautiful characters</li> </ul>
	1.3) Behavioral engagement	<ul style="list-style-type: none"> <li>- A chance to decorate game environments or dress up character</li> <li>- Playing game to experience the changing in graphics while playing</li> </ul>
<b>2) Engagement in game society</b>	2.1) Cognitive engagement	<ul style="list-style-type: none"> <li>- Gamer who prefers playing alone or with close group, also accepts social benefit of game as a communication tool for different age group, and as an activity to maintain family relation .</li> <li>- Gamer who welcome to play</li> </ul>

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## Adult's Game Engagement

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		with unknown player view digital game as an activity that requires cooperation to accomplish the mission. Game can also develop relationship among players.
	2.2) Affective engagement	<p>- Playing game with acquaintance avail of closer relationship, enjoy more talking. It leads to the feeling of exciting while playing game, and helps relief from loneliness.</p> <p>- Playing with unknown player, on one hand, playing with many players would make more fun. On the other hand, it may lead to the feeling of non-safe, cause argument, or hate speech.</p>
	2.3) Behavioral engagement	<p>- Players in the same team have to communicate, brainstorm and cooperate in order to accomplish game's mission</p> <p>- Example of behaviors appear in game society can be applied in real life such as working in team.</p>
3) Self/Identity engagement	3.1) Cognitive engagement	<p>- Most of informants do not focus on dress, jewelry or weapon of game character, instead they pay important to their affection and playing.</p> <p>- Some views game character or</p>

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### Adult's Game Engagement

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		avatar as the representative in playing game
	3.2) Affective engagement	<ul style="list-style-type: none"> <li>- Feeling proud when the avatar play success</li> <li>- Game fulfils what real life cannot do.</li> </ul>
	3.3) Behavioral engagement	<ul style="list-style-type: none"> <li>- Game that is consistent with player's lifestyle bear on the selection of game play</li> <li>- The way players engage with their avatar, effects on how serious they play.</li> </ul>
<b>4) Action/Playing engagement</b>	4.1) Cognitive engagement	<ul style="list-style-type: none"> <li>- For positive side: game has benefit on training the brain and concentration, strategy, planning, and management, tolerance, and dedication.</li> <li>- For negative side: games are very influential among youth which may result in spending too much money. Playing too much games might cause problems with eyesight.</li> </ul>
	4.2) Affective engagement	<ul style="list-style-type: none"> <li>- For positive side: playing game helps reduce stress. Player feels enjoyable while playing.</li> <li>- For negative side: Playing game may cause moody and unhappy feeling if the game went uncontrol</li> </ul>

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### Adult's Game Engagement

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4.3) Behavioral engagement	<ul style="list-style-type: none"> <li>- Some informants admitted that they play games seriously such as strategic planning or buying game items in order to win the game.</li> <li>- Some informants brought the experiences from playing game to apply with their work.</li> </ul>
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## 5.2 Adult's Social Engagement through Digital Game

In examining adult's social engagement through digital game, the study utilized qualitative methodology. The data collection method was in-depth interview from 32 respondents and a focus group of 4 informants. The research findings could be divided into three parts: Types of Social Engagement through Digital Games, Process in Creating Social Engagement through Digital Games, and Development of Five Adult Gamer Types in Social Engagement Process

### 5.2.1 Types of Social Engagement through Digital Games

The in-depth interviews were conducted from 32 informants aged over 40 years. The data was used to analyze the characteristics of social engagement that is formed through the foundation of playing games. The findings indicate that players can be classified into two groups. There are 14 single players and 18 guild players.

Analysis of social engagement reveals that there are five types that develop from playing games. Those, who play games alone have two types of social engagement, which are game engagement without social engagement (5 informants) and limited social engagement (9 respondents). The group that has social engagement through games has three types of engagement, which are closed social engagement (9 respondents), virtual social engagement (6 respondents), and real social engagement (3 respondents). This is presented in Figure 5.1, which shows the characteristics and type of social engagement from playing games of the 32 informants.

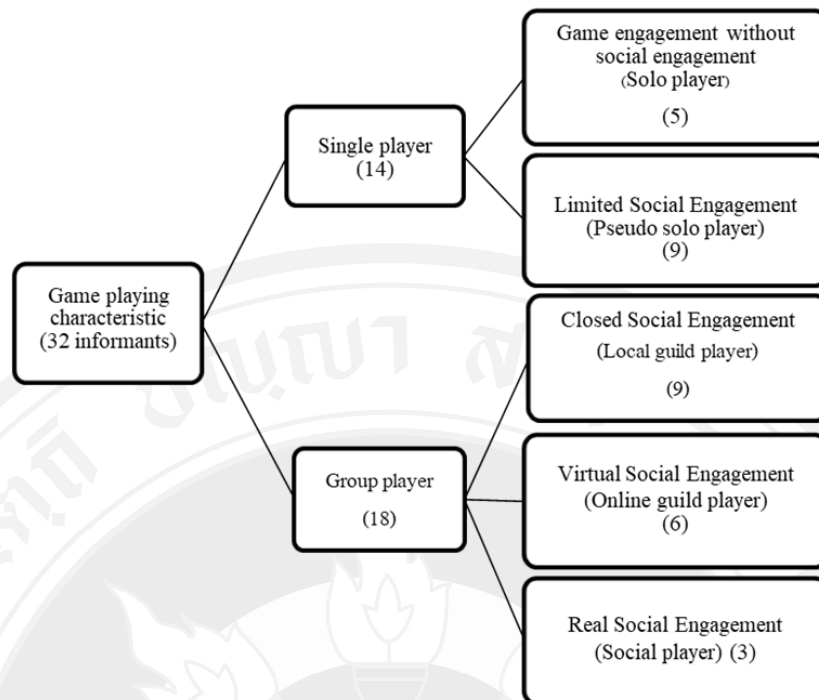


Figure 5.1 Types of Social Engagement from 32 Informants

The study indicates that social engagement through digital games can be classified in five types as presented in the following section.

#### 5.2.1.1 Game Engagement without Social Engagement

Players in this group prefer to play alone and do not want to play with others. They avoid joining missions with other. They are engaged with the game but not the social aspect. Most importantly they prefer playing alone. They do not join missions with others regardless of their level of closeness with other players. While they play the game during missions, they do not ask help or cooperation from other gamers. They prefer to play games allow players to play alone. However, the players in this group might talk or ask their close acquaintances about the game occasionally. They would search for information about the game on their own through the Internet. They would also post their questions on social media. However, they do not interact through the game with other players. These players are classified as having game engagement without social engagement, or ‘Solo player’.

The solo players identified in the research include Sarocha, Kanok, Thitima, Marut, and Pichai.

I play alone, I don't play with others. My son plays on his own. At home we play separately. (Sarocha, personal communication, April 25, 2019)

I play alone. I don't play with anyone. I never had friends, who play games. Sometimes I play Line, which is connected to my Facebook, and get an offer to play five games for free. I would go in and play these games. However, I don't talk to anyone. I don't care to communicate with anyone. I just play. Like Candy Crush, I reached a point I ran out of hearts and could no longer play. I could have asked for people to help but I didn't. I just played another game instead to bid my time to be able to come back and play it again. (Kanok, personal communication, May 20, 2019)

I don't play with anyone. I don't talk about it with my kids. We play different games. There are times when people ask for hearts or add friend, but I never pay any attention to it. I play until the energy runs out then I leave it to do other chores. I come back to play when it is recharged again. (Thitima, personal communication, May 29, 2019)

I play alone sometimes I meet some of those, who are my friends on Facebook. However, we each play our own game. We don't contact with each other. We just know that we have friends playing in the same game. (Marut, personal communication, June 2, 2019)

Most of the time I play alone. I don't like to involve myself with others. I don't like fighting games. I prefer just collecting points. I like Pokémon Go because I can walk around and collect nice characters. (Pichai, personal communication, September 20, 2019)

#### 5.2.1.2 Limited Social Engagement

Gamers in the group of limited social engagement, prefer to play alone. They do not join groups with other players. However, they might join in missions with other gamers. Informants in this group have an important characteristic, which is playing alone. They do not join groups or form teams with other players. But they would join activities through games with close acquaintances such as family, friends, and co-workers. These activities include asking for hearts, exchanging items, joining missions, and competing with teams that the system has randomly selected without

knowing other team members. Sometimes they would talk about games through social media but there is no actual communications. This might include setting up social media groups specifically for communications about the game. In addition, they might form teams with the objective for competition and joining in game missions. The research findings indicate that these informants have limited social engagement, which is known as ‘Pseudo solo player’.

The research findings indicate that those in the pseudo solo player group include Ura, Tong, Anucha, Sombat, Nicha, Hathai, Wee, and Krit.

I never played games as a group because my free time is different from others. I used to meet up with the parents of my kids’ friends because I need to use Facebook to login. We play the same game so sometimes we talk. For instance, we thank each other for helping out watering the plants or exchanging items. Sometimes, we talk on Line or meet up and talk about the game a bit. Nowadays, there are those who steal things from the farm and there are those, who ask to be friends, without knowing each other previously. (Ura, personal communication, May 27, 2019)

I don’t play with people I do not know. The game would set us to compete with others in the same level. There would be an icon that pops up. We can know if the person is our friend or not. If I know them, I would join them. Sharing games with friends gives us more points but I only do so with my friends. (Tong, personal communication, May 28, 2019)

I started playing because my wife invited me and downloaded the game for me. I only play with my family and neighbors. I never tried competing as a team. I never sat down with others to play. Each person plays in their own home. Sometimes we talk and exchange hearts. (Anucha, personal communication, June 16, 2019)

I never played with anyone. When my kids introduced the game to me, I played alone ever since. I know what levels the other family members are in but I just continue playing at my own pace. Now, I have advanced more than the rest of them, I have beat them all and it is very exciting. Sometimes I ask them for hearts, sometimes they ask me to help them out. We send each other hearts but do not talk. Each play their own game and go their own way. In the

Line group my family never ask me for gaming tips. (Sombat, personal communication, June 17, 2019)

When I know that my friends play the same game, it is fun to know someone you know is there. It creates a relationship where we can send power back and forth. Usually, these friends are not from the game, they are usually people we already know from Facebook. There was a time it was a great hit, the game would random our competitors, whom we don't know. It is like promoting me to compete with others and train my friend. I like it very much. (Wee, personal communication, June 3, 2019)

I have seen names in the game and noticed that our friends, office colleagues, and juniors, I know are also playing the same game. I feel I cannot los. I must win since it is competition. We don't talk but we send hearts or weapons to one another. (Hathai, personal communication, June 2, 2019)

I only invite those, who play games together. I ask them if they would like to join for which hearts are usually given. It is like prolonging our life in the game but I don't just ask everyone. I don't play as a team because I play my own style. When you play as a team there are rules and orders that need to be followed. I feel it is very restricting so I don't like playing in a team. (Nicha, personal communication, October 5, 2019)

I play alone at home. I know that there are some of my friends and kids playing the game. We send hearts to one another but we are not that interested in competing. It would be good to win. It makes me feel empowered. (Krit, personal communication, June 17, 2019)

For Panee (49 years) explained she does not play games with others because society in the game is very varied. The system tries to randomly select and pair people. However, she feels that this is risky so she prefers playing alone. Sometimes there are communications in the game with acquaintances to ask items from people she knows.

#### 5.2.1.3 Closed Social Engagement

Gamers in the closed social engagement group play with close acquaintances. The research found there is actual communications among people in the group. The important characteristic of informants in this group is the formation of groups with people they know such as family, friends, co-workers. There is communications among members in the group such as discussing and exchanging experiences about the game through phone, msn, or through social media. Group members might communicate through communication channels that have been created such as Line group, Facebook group, or use personal communications, and doing activities together. This includes exchanging items, giving power by giving hearts between members. In addition, this group of players can be classified as those who have social engagement with people close to them. They might cooperate in setting up teams with their acquaintances to compete with other teams that they do not know personally but have been randomly selected by the game system in order to successfully accomplish their mission. The two teams do not have no interaction or know each other beyond the mission within the game. This study defines such gamers as ‘Local guild player’.

The study found that informants, who were local guild players were Karanya, Tanya, Kant, Mas, Piradee, Raksa, Suphan, Pawinee, and Napha.

From the in-depth interviews it is found that Napha explained that she started playing games because her friend invited her. She has ever since been playing with her friend. They communicate through the Line group to talk about the game and exchange items among friends. Tanya started playing alone and then she started to meet those who liked the same game, which led to the formation of the group.

We started to set up a game playing group when I was studying masters’ degree about 7-8 years ago. The people, who were studying also played games and when they knew I played, they invited me to play Candy Crush. They said it was fun and we decided to compete so I downloaded the game. The group consisted of 4-5 people and we often discussed about the game, challenging one another. At that time there was no Line so we chatted on msn and Facebook. We asked each other for hearts. We played together for a long time even after we graduated but now we have less time to spend as a

group. There is one friend with whom I still play. (Tanya, personal communication, May 18, 2019)

I usually play alone, but nowadays we form a team among the people who hang out for lunch at the office. There are 5 of us, but have 7 devices. We each play our own thing but add up the scores as a group. We compete with other teams that have been randomly selected by game. If someone dies we give them points. There are many challenging missions from the game, the best team would get coins. For instance, yesterday our team was ranked fourth globally. (Kant, personal communication, May 27, 2019)

In the game we compete as a team. Sometimes I join teams with my friends at the office, whom I already know to compete with other teams in the game. However, we still play separately, we only add the scores together. In the game there is the connection system. But I don't contact with other people I don't know. People in the team would sometimes talk about the team like how fun it is. There are times when people ask for tips in playing and what level we are playing in. (Mas, personal communication, May 29, 2019)

I have been playing games for many years now. My friends in the workplace also play so we usually talk, thus creating our team of 7 people. This would be helpful in collecting points, when we compete with other teams. We don't know the people in the other teams but when there is an event we all play on our own and add the points together. (Piradee, personal communication, May 30, 2019)

Most of the time, I play alone or with my kids. I choose to play the same game because it is a way to build a better relationship with my kids. It is a means to train planning and wits. However, when there is an event competing with others from the same level worldwide, I join in. I would talk a bit answering the chats and that is it. I used to play with my subordinates as a means of building a good relationship. I even help them sometimes. Our company has the policy allowing employees to play games as long as it does not disturb their performance. (Raksa, personal communication, May 30, 2019)

We have a family Line group, when I win I go in and brag about it. In the beginning I often asked for hearts, but I later learned of other ways to get hearts quickly and I started sharing it with them. During events we join together as a team and when we succeed we would get the rewards. (Suphan, personal communication, June 18, 2019)

I started playing because my elder brother invited me to play. He has retired so he has a lot of time on his hands so he invited me to play. Now all of the kids have joined in so we have a competition. Sometimes we form a team to compete with others. (Pawinee, personal communication, June 16, 2019)

Most of the time I play alone, or play with my friends on Facebook because some of the games are linked to the account and I see who are playing. Sometimes we form teams to play during events. There are times I play with people I don't know but I have never formed teams with them. I don't talk to them but I only greet my friends and relatives, who play together. (Napha, personal communication, June 18, 2019)

#### 5.2.1.4 Virtual Social Engagement

Gamers in this group form a virtual social engagement. They might form groups with close acquaintances or those they do not know. The most important characteristic is joining teams with those whom they do not know previously. However, the important characteristic is joining teams with people they do not previously know. They might communicate occasionally about game strategy. Yet they do not develop the relationship beyond that. The results of the study show that gamers in the virtual social engagement group join with others they do not know to form teams through the game system. They form teams with the common goal to perform missions in the game. They communicate through communications channels provided in the game or other available channels that would help them accomplish their mission such as Line, Facebook, and Discord. The team formed by people, who do not previously know each other in the online world might be a one-time deal or continuous. They only do missions in the online game and do not develop the relationship beyond the game or know each other outside the world of the game. In

this study, these players who have virtual social engagement are called ‘Online guild player’.

The research findings indicate that the online guild player informants are Dech, Warut, Tanakorn, Chatr, Jirapetch, and Samon.

Usually, I join with my friends and juniors in the office. Our team that competes with others has a total of 5 people. When I am at home and the rest of the team are not online, I join other teams, which the game automatically randomly selects for me. We don’t know each other before hand. How do we communicate? In RoV there is a chat system that enables conversations during the game. I can turn on my microphone and can listen to what others are saying. During the game, we would discuss the strategy to deal with the competition. We don’t talk about other things especially when the team is formed from people, who don’t know each other. The conversation is focused primarily on the game. There are no contacts for knowing each other outside of the game. However, if we are friends playing in the same team, we would talk about stuff beyond the game. It would be like any normal conversation although in the Line group we talk primarily about games. (Dech, personal communication, May 23, 2019)

Warut is another example of a player, who engages in virtual social engagement. He does not have a game playing group in Thailand. This is because the game he plays is popular internationally so he decided to play with gamers from abroad. Warut explained that the members in the team discuss game strategy through Discord, which can upload images. They can communicate more clearly than through the game system. For this group, they only talk about games and do not talk about anything else.

For instance, I have 7 accounts for the game, Seven Knight, because there is a guild. When I start again I would get a new guild. Honestly, I don’t like talking to others so I load the application to play the game. It is quite private there is no need to make appointments to meet up or being friends on Line or Facebook. (Warut, personal communication, June 5, 2019)

In addition to friends, I play with my nieces and nephews. The game can random players, we don't previously know to play with us. However, I have my family to play with me. If they are online I would invite them to play. If they are my friends I would talk with them. However, if it is people I don't know I won't turn on the microphone to talk to them unless they greet me first. (Chatr, personal communication, June 26, 2019)

I am not the serious type. I do not have groups. When I feel like playing I go in to play. Once the game is over, I just join a new team. I play by the rules because there are just 5 positions. I make sure to choose the position that is suitable for me. If there is no such position, I would take whatever there is. I am just a member in the team. Most of the time I play quietly and not talk much, I do whatever is necessary. (Tanakorn, personal communication, October 5, 2019)

I play as a team and with my friends. Sometimes I ask to join the groups that have already formed. How? Well, they sometimes post requests on social media like Facebook. When I see such announcements, I join them. In the game there is a chat but I usually just watch them. (Jirapetch, personal communication, June 27, 2019)

The game I am playing like Fishing Strike has a guild, where people have to form teams to play. But it is our choice to join a team or not. I don't talk to anyone since the game enables us to play separately. When I go in to play the game would random me to join a team of people I have not known before. I just play. I don't talk. I don't like to talk to other players. In the teams where players are randomly selected, there is not much communications. Players might add friends in order to give each energy. If people in the same team ask for energy, I give it to them and they would do the same for me. (Samon, personal communication, June 12, 2019)

#### 5.2.1.5 Real Social Engagement through Digital Games

Gamers in this group have real social engagement through digital games. This means that the players in the game create a new social group that originates from doing activities in the game. Later, the relationship develops from the world of the

game to the real world. Informants in this group have the relationship characteristic, wherein gamers who join in game missions do not know each other previously. They might form groups to play games through the system to complete missions. The team would communicate through communication channels provided in the game or other channels such as Line, Facebook, and Discord in order to successfully complete missions. From being strangers, the relationship gets tangibly stronger by having Line or Facebook groups. They have group regulations, meet, create opportunities to know each other, and interact. They also come together to do activities beyond the game. This study defines these informants, who have real social engagements through digital game as 'Social player'.

The research findings indicate that informants in the social player group include Pitak, Suthep, and Pongthorn.

Pitak aged 42 years explained his experiences as part of the gaming society that he has both type of teams. He has teams formed with people he already knows, who like the same game. At the same time he also has another team, where he looked up people in the game he did not know.

I started playing this game, when it was around for about three years already. Today it is already an E-sport. There is a selection of players representing Asia to compete in international tournaments. I don't play at that level. I just play for fun. In Summoners War there is the party and guild system. Some groups for Line and Facebook groups

He also still has the Line group of the teams he played with before. Although they have stopped playing the game, they still communicate with each other.

Although I might no longer be playing that game, I do not leave the group. The people in there are my friends some of them are on my social media so when there is a new game I recommend it to them. I invite them to play with me. Today we still play many games together like Summoners War.

Suthep aged 56 years started playing Pokémon Go by walking around to find beautiful characters to collect. He walked alone without any friends. At first he did not know anybody. However, later he had the opportunity to join the team SK3 (not

actual name), created by Pokémon Go players (Pokémon Trainers in the game lingo). They share information through Line communications in order to make appointment to successfully complete missions together (work together to beat the boss or join events in the game).

Suthep is one of the members, who created the Pokémon F1 Group through invitation of Chuchart, who is 60 years old. They had previously met in SK3 group. Today the F1 Group has already been established for 2 years. There are 137 members (data retrieved March 11, 2020). They communicate through Line group and make appointment to meet in order to accomplish game missions and also have small group meetings.

Although I might no longer be playing that game, I do not leave the group. The people in there are my friends some of them are on my social media so when there is a new game I recommend it to them. I invite them to play with me. Today we still play many games together like Summoners War.

In addition, Suthep is also a member of the formal group, which is SRT that has 182 members (data retrieved on March 11, 2020).

This group is quite formal. There is the election of the group president and administrator. We even have a group shirt and just recently celebrated our third anniversary. We often have activities. We have Facebook and Line groups. The group president would change as their term ends. The admin is like the group's secretary keeping everyone updated with information posts.

Pongthorn aged 42 years is another informant, who is involved with social groups formed from games creating relationships that last until today. The social group started from playing DOTA together, which led to becoming friends in real life.

I play DOTA since I was almost 30 years. In the past we formed a group and had meetings in the real world instead of just meeting in the game. It was some 10 years ago now. Since we started playing together we have become friends to this very day. Since the game was closed, we no longer had any joint activities. We don't talk much anymore. Most of us have families, children, and work. We talk occasionally but now it is about work and family.

However, because of work requirements he does not have enough time to play as a team. Today Pongthorn still plays online games but prefers those that suit his time. He also still contacts friends he played games with a decade before.

### **5.2.2 Process in Creating Social Engagement of Adult Gamers**

In this study, “Adult’s Social Engagement through Digital Game” revealed that the process in creating social engagement is an important process. Thus, the researcher has further examined the process through data collection using the focus groups of 4 informants, who have been game group members for no less than 1 year.

The study of the social engagement creating process started with in-depth interview in order to find the informants, who have the desired characteristic as a social player or real social engagement through digital game. The formation of this new social group is derived completely from the game. It is found that there are 3 such informants, who have been members in groups from different games such as Summoners War, Pokémon Go, and DOTA. When comparing these three games using the criteria of popularity among the 32 informants. It is found that Pokémon Go is more popular compared to the other two games. This study chooses to collect in-depth information from the focus group using Pokémon Go as the case study in terms of process of social engagement creation of adults through digital game.

The research findings indicate that the process of social engagement creation comprises of 7 stages, which are motivation to play game, immersion of game engagement, communication via game activities, emotional sharing, creating group communication channel, collective activities outside game world, and construction of new society outside game world. The details are presented in the following section.

#### **5.2.2.1 Stage 1 Motivation to Play Game**

The study examining the motivation to play games is the start of the engagement creation process. From the information derived from the four focus group case study informants, who are Pokémon Go players, has identified various motivational factors as presented in the following section.

Tri (58 years, Group B, C, D member) used to be against kids playing games. He used to be curious when he sees them play and wonders why they do so.

Back then some kid challenged me so I started playing Cookie Run. I played until the students changed games and school. We no longer meet anymore. I also did not continue playing eventually the game closed. Now I see on TV that there are many new games like Pokémon. So I was interested. The students were talking about it and they invited me to play. They taught me how to download it and I started playing ever since.

Jin (62 years, Group E, F member), who played games since the heydays of computer games followed by console games, is not interested in mobile phone games. This is because it is too small but played Pokémon Go because his daughter asked him to help her catch Pokémon.

I know Pokémon from the animation. At first I was not that interested but it started with my daughter, who is studying at Thammasat University. I have to pick her up quite often and see her play. One day she passed her phone to me and asked me to help catch Pokémon for her. I went to catch Magikarp near the water edge. She had 400 of them so she told me to evolve it. When I saw it become Gyrados, I was so excited and loaded the game to play on my own mobile. (Jin, personal communication, July 24, 2019)

Ake (42 years, Group A administrator) is an avid gamer, who was never interested in the Pokémon cartoon before. However, he received requests from people around him to play Pokémon Go so he could coach them.

My girlfriend, friends, and even boss also play. They ask me to be their coach. After having fun playing the game, I went to check up on its back story. I realized how long the game was around and its beginning. I find it very interesting and important in creating a community, where I can really feel the warmth. (Ake, personal communication, July 24, 2019)

Chai (65 years, Group D member) was not that interested in playing games. However, since he likes cartoon he tried to play Pokémon Go when his children invited him to play in order to create a good relationship among family members.

In the past I used to only play easy games on the PC like falling fruits and minesweeper. How did I start playing Pokémon Go? It started with my children. At first it started with the animation. I watched it with my children. The kids loved the cartoon and once they started to play, I joined in so everyone in the family plays the game. Now the kids have stopped playing but I am still playing because the characters are so cute. (Chai, personal communication, July 24, 2019)

#### 5.2.2.2 Stage 2 Immersion of Game Engagement

The second stage in the creation of social engagement after informants started playing the game to the subsequent engagement. This is one of the reasons contributing to continuous playing of the game. If the gamer does not engage with the game, this would cause a hiatus in playing the game eventually leading to subsequent abandonment of the game. On the contrary, if the player is engaged with the game, the person would decide to continue playing and joining missions (Information from the in-depth interview, revealed that some of the informants played some games and quit eventually. This is because they are bored since the game has no development. Thitima quit playing some games because it takes too much time to complete a mission. She has no time because she has to do other things. Samon stop playing because she feels tired playing some games rather than feeling relaxed.).

The research findings in the stage of engagement with the game reveal that 4 of the respondents are members of Pokémon game clubs in Bangkok. The engagement with the game differs as explained in the following section.

For instance, Chai explained that Pokémon Go helps to build relationship with his children. He developed a feeling of engagement and liking of the game system. Thus, he has been playing this game to this day. Ake explained that he felt engaged with Pokémon Go because he likes fighting games and the storyline. Tri explained that playing games is like a lesson in investment, business, and life collateral. Jin believes that games create opportunities for other activities depending on the cooperation of members, who are family members.

I think this game is very smart. The system is very good. I like adventure and fighting. I like that we get rewards for doing something. This is what I like to play. (Chai, personal communication, July 24, 2019)

I grew up playing games. My favorite type of game is fighting like Street Fighter, which is what I grew up playing. There are games that have cinematic storytelling like the Legend of Zelda. I like it very much. It comes from Nintendo. Then I noticed too that I was playing Pokémon despite it being 2 different types although they have elements of fighting. Another type of game I like is adventure games. Pokémon Go combines both types of games that I like. I think it is a perfect combination that I like very much. Therefore, the online game that I play on mobile that I like the most and pay the most amount of money is Pokémon. (Ake, personal communication, July 24, 2019)

When I decide to play something, I stick to it. For example, I play Pokémon Go with my students. They have changed to play other games like RoV or PubG but I still play Pokémon Go. I like it because I think it is creative. Players need to collect characters, candies, and stardust to evolve the Pokémon. So, when I get a lucky character that uses less stardust to evolve, I have plan just like investing in stocks. I have to choose the right character that fits the job. For instance, when we raid a gym, we need to choose the character with the right ability. It is like investment in life and business, we need to choose the right character that is worth it. Comparisons can be made to make the right decision. It is not just playing. (Tri, personal communication, July 24, 2019)

After playing with my kids, I went to look up the backstory. I found it to be very interesting. The most important issue is about the location. It promotes exercise and activities. There are so many things that happen. The technology and business work together very well. When I first started, I would take my family to Pattaya. There are many people playing at La Park Pattaya because there are many pillars. So I can travel with my family, while I play the game. (Jin, personal communication, July 24, 2019)

### 5.2.2.3 Stage 3 Communication via Game Activities

Literature review revealed that most digital games today have characteristics that are conducive for social engagement through interactions in game missions through communication channels created by the game system. The mission in each game is different. Consequently, it requires different communications and interactions among players. For instance, in some games, players can ask for and send hearts or life power (Candy Crush) and add friends (Homescapes). The game has a system where players need to form teams to compete. The system would enable communications through the use of microphone for players in the team can plan their strategy (RoV) and meeting to do joint missions (Pokémon Go).

The in-depth interview from informants revealed that Pokémon Go has communication stages players go through during the missions. First, they need to make an appointment to meet up at certain locations where they can catch Pokémon. So, people can get to meet each other face to face and greet each other. They help each other to accomplish missions such as raid battle and raid boss.

Jin explained that he joined missions to catch Pokémon with many groups. This is because the game requires people to go out to do missions. Tri is no different. He traveled around Bangkok to catch Pokémon and making friends doing so. He has made many friends through playing the game. Chai is a member of Group D, near his home. So that there would be no obstacles in raiding the boss with other members. Ake also admitted that Pokémon Go allowed people, who did not speak with one another get to know each other more. This is because they have to join in missions together.

The first group I joined is T Group. Members are varied including students, security guards, and motorcycle drivers. Then I joined F Group but I didn't stay long before moving to E Group. Group membership is quite short-term depending on which character is being collected because it requires going to specific locations. When I started I took my family out to Pataya province. There were a lot of groups being formed around the pillars. I hired a motorcycle driver to take me around to catch the Pokémon. (Jin, personal communication, July 24, 2019)

I have joined many groups, for example, Group B, Group C, and Group D. Now I am primarily in Group D. When I play I drive around hatching eggs (in the game). All of the security guards in my home village (mooban) know me. I sometimes go to Thepleela Temple and take a folding bike to join others, who are playing in the area. (Tri, personal communication, July 24, 2019)

I don't usually go out far from home. When I play, I just stay around my house so I joined this group because we often play together so I follow their news on what they are doing. At times when I go to the department store I would join others to raid a gym. Each person can play we don't need to know each other. The game only requires we play together and there can be no more than 20 players. The moment the number of group members is exceeded, the player would be automatically included in another group. (Chai, personal communication, July 24, 2019)

Pokémon Go is a game that requires a real journey. It is available everywhere so you can play it anywhere. I usually play near my workplace. I meet students, faculty members, and even my own staff, who are security guards or drivers. They normally would not talk to me nor do I talk to them but when we join together in raids, we would talk. So, we can talk together openly. (Ake, personal communication, July 24, 2019)

#### 5.2.2.4 Stage 4 Emotional Sharing

In-depth interview findings revealed that doing missions together created a sense of comradery. Whether success or failure, it becomes a joint feeling among team members. It is happiness in success or sadness in failure that is felt together. This feeling enables a sense of engagement and closeness that fosters a sense of group identification.

When we join to fight a boss, we have to work together our spirits have to join in harmony. Relationships start to strengthen because we really have to help each other. We have to meet each other often and it becomes a feeling of affection. Even if we didn't know each other previously, coming together to play, we feel like we are in the same group. For instance, if we want to beat

Mewtwo, we need many ids but we only have 5 people so we really have to work hard together. You have to choose the best character you have at your level. When only five of us can beat it, I almost cried because it is a great achievement we share. It is not enough to just beat it, we need to capture it too, which is not easy. When someone catches it, the rest would congratulate the person. From not knowing each other previously, we have a shared spirit. It is like cheering for the same sport team. After that we would start asking about personal information like where do you come from or where do you live. Then we would invite each other to play again. This makes us closer. (Tri, personal communication, July 24, 2019)

Ake expressed his view that Pokémon Go is different from other online games. This is because the game system enables players to meet up and do missions together. Players can get to see each other in real life and know their personalities so they can develop feelings of closeness much faster. This stage might take longer in other games.

Most online games require us to sit in front of the screen. There is no interaction. It is like being in a virtual world. This is different from Pokémon Go. It is not just in a virtual world but it integrates the real world. This is because it has AR technology unlike other games that might have VR. So, there is no feeling that you don't know the others you play with. In Pokémon we get to see the face of other players, get to know their personality, and feelings. People have feelings of happiness and sadness through shared missions. In my feeling it makes us closer to one another. (Ake, personal communication, July 24, 2019)

At this point Pitak (from the in-depth interviewed 19/09/2019) also explained that those who played Summoners War admitted it takes many months before players would talk to people they did not know previously and try to make friends. After spending some time observing their personalities and maturity levels, then people can start to get to know one another.

Jin and Chai expressed another view that in the past although people played games together going through happiness and sadness together, caution is necessary in developing relationships with strangers.

I am quite careful so I don't accept everyone. I have a line because a conflict can occur with even those people I know for a long time. This happens sometimes when we have time to drink coffee before or after playing games. However, if I feel that we are not close, I just stay away. If I meet people, whom I often meet, I would greet them. (Jin, personal communication, July 24, 2019)

I think it is part of my personality that I am more careful in getting to know people. I usually play only with my family. It is not that I don't greet others. If I meet them often and remember them, I would greet them. We usually talk about the Pokémon characters but it takes time to cross the line to talk about more personal things. (Chai, personal communication, July 24, 2019)

From the growing feelings that people develop by playing games together often, they become a group that come together. Group members talk to one another more and develop communication channels within the group.

#### 5.2.2.5 Stage 5 Creating Group Communication Channel

The research indicates that the joint feeling experienced through cooperation in game missions, when happening repeatedly it becomes a feeling of closeness. Gamers feel that they are in the same group. This results in the effort to create communications within the group. In some of the modern games, communication channels have been developed to enable players to chat with one another. For instance, Homescapes has a system to add friends or window to ask for hearts. RoV has a communication system that enables players to chat or discuss about the game. They can also turn on the microphone and talk to one another. For Pokémon Go, the system allows players to meet up to do missions. They can exchange items and characters. However, they cannot communicate. The study indicates that members prefer to use Line and Facebook groups.

I walk around to catch Pokémon. So I meet other players. I would then add their Line so we can exchange information. I meet many people while I play so I learned that there are players gathering in Lumpini Park and Siam Paragon. When I meet up with other players, they invite me to join other groups. (Tri, personal communication, July 24, 2019)

I have played in many places. At first I did not have any group. I just kept on walking so when I often meet other players, I invite them to join the Line group. They would post recommendations and invite others to join events like opening the gift box requiring us to meet. Thus, we need to know each other fairly well. I often go in to check the news in the group. At first, I posted some information in the Line group but nowadays I don't post much anymore. (Jin, personal communication, July 24, 2019)

I joined only one group, which is D. I often play with my family. Maybe it is because of the work requirements, people in my work group don't play. There was one time I played at the office and my subordinate came around and asked me about playing the game. I felt embarrassed so I became very careful. For the group, I became a member because I met them often so we formed a Line group. We would set up meetings to raid a gym. I would read the information and if I have time, I would join the raid. (Chai, personal communication, July 24, 2019)

I am the administrator of the Pokémon Group A Line so I am quite active. I need to manage the order in the group. I have to search for information to be passed on to the group members through the Line group. I also have to block unsolicited people, who try to join the group. (Ake, personal communication, July 24, 2019)

#### 5.2.2.6 Stage 6 Collective Activities Outside Game World

The research findings indicate that when players join missions together often enough and have communications through group channels such as Line and Facebook group, they evolve to do other activities together. For instance, they would meet up to eat and get to know one another. In the Line and Facebook group, they would talk more about issues that are not about the game.

In the Line group we often have discussions even now. In addition to topics about the game, we also talk about personal issues. We might invite each other to eat together. Sometimes, when we finish playing or before joining a game event, we might set up a meeting. Let's say we have to join a raid at 4 PM, we might meet up to eat before playing. How often do we meet? Well, I say we meet every month because there is an event every month. Most of the time this is how it is. (Ake, personal communication, July 24, 2019)

Sometimes, while waiting to play, we would grab coffee together and get to know each other a bit. Well, I have to see the person too, whether our personalities can go along. If I feel that the person is not the type I can become close with, I would just stay apart. I concentrate on playing my game but I have to be careful as well. (Jin, personal communication, July 24, 2019)

I am quite open. When I meet someone for the first time, we usually hang around after beating the boss to catch Pokémon in the area. While waiting we would chat and add Line. We use this time to get to know each other and sometimes grab coffee together. (Tri, personal communication, July 24, 2019)

Most of the time we chat in the Line group. Sometimes I post the picture of the Pokémon I caught. I sometimes express my opinions but I don't do so often. When the group gets together to attack a boss, if I have the time I would join them. I would greet the other players but I have never joined them for coffee or meals. I feel I am still new and have joined the group later than others. (Chai, personal communication, July 24, 2019)

#### 5.2.2.7 Stage 7 Construction of New Society Outside Game World

The long-term relationship is developed from doing missions together regularly. It becomes a feeling of familiarity and engagement. The research findings indicate that players, who interact on issues about the game might start to interact in the real world. They would talk on Line and set up appointments to engage in activities that are not game related. This would eventually lead to the creation of new social groups that have its origins from the game.

I have groups in social media such as Facebook and Line as well as offline. Sometimes we come together to party not just in the Pokémon group. I have these activities in all the games I play. I have a lot of activities. Most of the time I would go and talk to others. For instance, when I focus on online games that need cooperation, I would login every day. Most of the time we talk about games but sometimes we also discuss other things such as personal issues. We sometimes help each other out. For example, one of the players was looking for a Chinese translator so he asked for help. We knew this person from the game by meeting him during the raids so we joined the same group. (Ake, personal communication, July 24, 2019)

I have friends in the Pokémon Go group, which I joined since I started playing the game. We are still friends up to today. There is this one guy I met, while we were biking around to catch Pokémon. One day I forgot my wallet and he bought me water. We are still friends today. His daughter is about to enter university so I tutored her for free. (Tri, personal communication, July 24, 2019)

I just joined this Pokémon Line group only for a short time. I came in later than the rest so I am not close to anyone. Some of the people have followed me on my personal Facebook. So, when we meet up to beat the boss, I would greet them. As I have said it is my personality and maybe because of my age, I am more careful so it takes time for me to be close with others. (Chai, personal communication, July 24, 2019)

Sometimes I still talk with those from the group, with which I played Pokémon Go in the early days. We still greet each other in Line. I go in to talk about other stuff other than Pokémon. However, we are not that close. We occasionally go out for coffee since most of them are the same age group. For instance, the person, who invited me into the group is no longer that active but we still greet each other primarily in Line. (Jin, personal communication, July 24, 2019)

The research findings indicate the process in social engagement creation starts with playing games. This leads to the formation of groups in the real world as summarized in the following Figure 5.2.

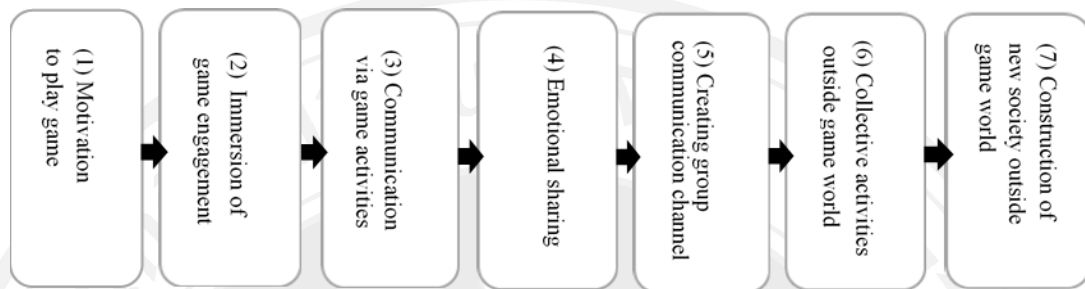


Figure 5.2 Seven Stages of Social Engagement Creation Process

### 5.2.3 Development of Five Social Engagement Types in Social Engagement Process

When social engagements in topic 5.2.1 have been examined in comparison to the process of social engagement creation in 5.2.2, the resulting social engagement types and adult gamer types differ. This happens through the social engagement process through digital games. The research findings can be explained in the figure 5.3.

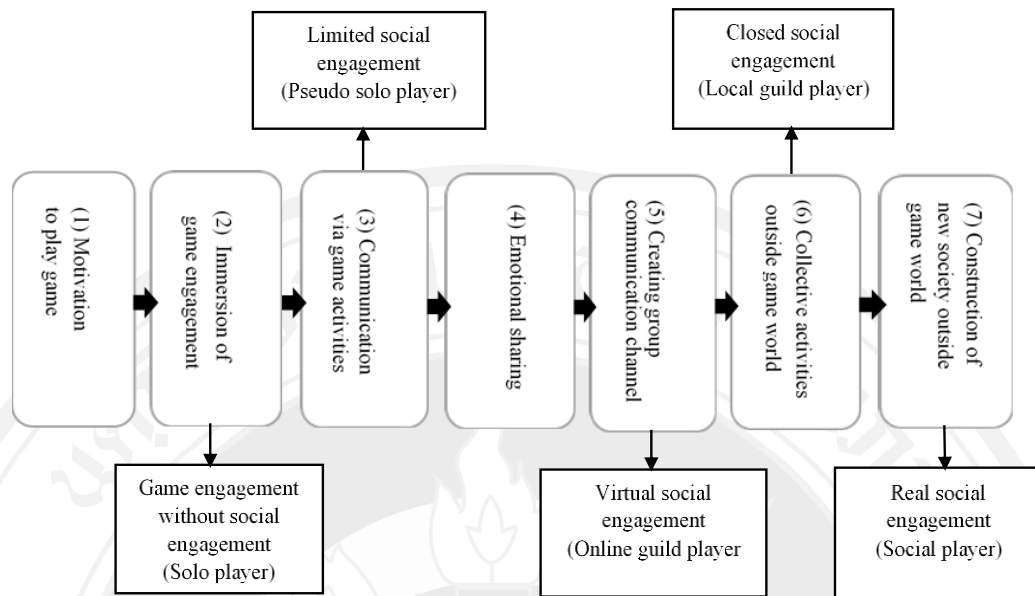


Figure 5.3 Development of Social Engagement Types in Social Engagement Process

The research findings reveal that the social engagement creation process contains seven stages. The development of five social engagement types and adult gamer types occurred at different stages. In the first stage, the informants have the motivation and decide to play the game. The second stage is the engagement with the game played, which leads to continuous playing. Most of the modern digital games are designed for playing alone and playing with others. The research findings indicate that the informants who are solo players prefer to play alone and do not interact with others while playing the game. The engagement is classified as game engagement without social engagement. The development of social engagement is in the second stage of the process.

In the third stage, the social engagement creation through digital games involves players joining each other in missions before moving on to stage 4. In this stage gamers have a sense of being in the same group through shared feelings. They share in success and failure of the team. The results indicate that they have limited social engagement, thus they are known as pseudo solo player. The development in the third stage of the process involves joining in missions together. This includes the

sending and receiving of hearts, join game competitions, or giving likes. However, they do not join teams, thus they do not have the feeling of belonging to the group.

The group creates a common feeling in the fourth stage of the process. This is the result of going on missions together. This feeling lays the foundation for the formation of the group to play games and creation of communication channels in stage 5. From the analysis of social engagement literature about games, stage 4 and 5 could be switched depending on the social characteristics of the game. This is because the games have been designed to be played either alone and as a team. This enables players to choose. However, the study reveals that the development of virtual social engagement or online guild player would be developed in stage 5 of the process.

The closed social engagement or local guild players interact with people they know. Thus, it is possible for them to do activities outside of the game together. However, the real objective of the meetings are still based on the game. They would develop their social engagement through the game. Thus, according to this study, this would be assigned as stage 6.

The real social engagement through digital games are a form of social relationships that adult gamers develop through the social engagement creation process. It is formed when the informants form teams to play with people they have not known previously. They would communicate and get to know each other. This leads to stage 6, where players engage in activities that are no limited to the world of the game. They might meet to spend time together, which leads to stage 7. This is the stage where a new social group is formed based on the foundation of groups in the game that materialized in the real world. In this study, such gamers are classified as the social players.

### **5.3 Communications for Social Engagement Process through Game**

Communications is an important factor in the development of engagement. Therefore, this study examines the communications process in developing social engagement among adults through digital games. The study utilized qualitative methodology collecting data using in-depth interviews of 32 informants about their experiences in communications through the game. The research findings reveal that

the communications format that creates social engagement among adults through digital games can be classified in three topics presented as follows:

#### 5.3.1 Communications through Game

#### 5.3.2 Group Communications

#### 5.3.3 Communications to Create Social Engagement

### **5.3.1 Communications through Game**

The literature review revealed that communications in game can be classified into two types, which are Human Computer Interaction (HCI) and Computer-Mediated Communication (CMC). HCI includes mouse clicks, finger taps, sliding the screen. CMC includes communications among gamers through the game, thus it is something that is inherent in playing games. Modern digital games have been designed with communications systems facilitating conversations among players. This differs depending on the characteristics of the game. Thus, this topic examines only the communications among players, who play together using CMC.

In this study, it is found that informants have experience in game communications. This includes communications through games while playing with other players. This also includes communications through other channels as presented in the following section.

1) Add friends through the game system in order to achieve the mission or create communications channels for playing games again in the future.

Some of the games require playing as a team even though we don't know each other. So, when other players ask to join, I would accept them but we don't talk to one another. This is because I don't really like to talk to other players. (Samon, personal communication, June 12, 2019)

When I join teams that the system randomly select, other players who see that I am good at playing the game would ask to add me as a friend. I just add them but I don't talk to them unless it is in the game system, where we all see each other. Some of them would invite me to play. (Dech, personal communication, May 23, 2019)

2) Giving likes through the game system to show appreciation in gamer's abilities.

When I join teams of people I don't know I just do my duty. In the game I would smash the like button for the strong players. At the end of the game we would send likes and hearts to each other. If you play well, the game would summarize how many hearts, which are the likes, you get. If you get a lot of like, you would get a special reward. (Tanakorn, personal communication, October 5, 2019)

3) Provide assistance in the game such as giving power in the form of hearts or putting up signs requesting for help.

In the Hay Day Game, when we need help, the system would have a function for us to put up a request. Some will come to help us to water the plants. When we meet up, we thank one another for the help or give each other recommendations about how to deal with people who steal from our farm. (Ura, Hay Day)

On Facebook there would be a notification on who are the players. Some of them are my friends on Facebook. They know I play Candy Crush because in the game it would show the name of the players. So, I know whom I can ask hearts from. Sometimes, when I run out of hearts, I would ask for it through "ask for live" window. We always ask for hearts from one another. (Hathai, Candy Crush)

I usually play with my family members. So, when I run out of hearts, I ask from them and I return the favor when they ask too. However, we don't usually talk to one another. (Sombat, personal communication, June 17, 2019)

4) Sharing games to friends and acquaintances through the game system or connect through social media such as Facebook or Line in order to trade for points or rewards in the game.

Line Pop that I play allows me to greet friends on Line by sharing the game so I can more points. Sometimes, I can gain 50 points by sharing so I do so. It

does not matter if the friend would play or not because I would have already gotten the points. (Tong, personal communication, May 28, 2019)

5) Exchanging items or sending gifts to other players through the game system is a means to accumulate points or other objectives.

For instance, in Pokémon Go, there is a collection of the experience point or xp. If we add friends and send gifts every day we can increase our xp and improve our standing becoming “Good Friend”. So, when we reach that status, we can trade Pokémon. (Chai, personal communication, July 24, 2019)

There is a place in the game, where we cannot play alone, requiring team playing. There would be a requirement about the number of players so I need to gather friends in the game. There would be exchanges high level items so it becomes a community in the game. (Pitak, personal communication, September 19, 2019)

6) Communications through the chat in the game could be used to create groups for communications. They would type chats through the game or in some game the microphone could be enabled to allow voice messages.

In the game, Hay Day, there is a chat system available. It allows us to set up our own group. However, I did not form my own group. I rather join existing groups. I don’t usually talk much. Most of the time I read the chats. (Jirapetch, personal communication, June 27, 2019)

Most of the modern games are played online, which supports playing in communities. The game can random players we don’t know to come play together. When I want to play I can choose to play with others or play with my nieces and nephews. So, when I go online I would meet them and invite them to play. When I play with others if they don’t talk to me I would strike up a conversation. If they talk I would respond. (Chatr, personal communication, June 26, 2019)

In RoV, there is a chat system to allow communications among players. We can turn on the microphone. We can choose to listen to their conversations. During the game, players consult with each other to develop

strategies in order to handle the competitors. But people don't usually talk about issues. (Dech, personal communication, May 23, 2019)

7) Communications through application that provide such services enable conversations during the game such as Discord, which is more convenient than the chat system in the game.

I loaded Discord and use it to talk with the team. This is because usually the chat system is not very clear. For instance, in a raid, it is important for the leader to make the order to each of the players to take paths for the attack. The chat in the game does not enable images to be loaded so we need an application to chat. (Warut, personal communication, June 5, 2019)

8) Communications on social media for requesting advice and seeking knowledge about games. In addition to communication channels in the game, social media such as Facebook, Line, and Twitter are popular channels among gamers to discuss and plan the group strategy. It is also the channel for exchanging information about the game. Social media, in addition to being used for group communications, can be used by solo players to search for information about the game. For instance, a gamer might choose to read information about a game on its Fan Page.

When I want to know something, I ask in the family Line group. This is because they started playing before I did. At first, I did not know how to play but I slowly learned about it. (Pawinee, personal communication, June 16, 2019)

When we set up the Line group, we started to expand the number of group members. At first we were a small group so whoever I met I invited them. There are no rules in this group. There is no administrator. Whoever, wants to play can come in to join. If anyone wants information or join raids, they can come in. All members can invite anyone. Members come from all age groups. Other groups that have administrators would need to approve members before they can join. (Suthep, personal communication, July 24, 2019)

There is a way to increase xp by adding friends and giving gifts. But you need to know their code. I have added everyone of my friends. What to do? So, I have asked the world. I post my code on the Pokémon Go Facebook Fan page or on Twitter. Then, there would be those would ask to be friends. There are many foreigners. We give each other gifts to increase our points. (Tri, personal communication, July 24, 2019)

9) Communications via Youtube and Game Casters. The research findings indicate that informants, who play online game especially those that require playing as a team, would use Youtube for planning the game strategy. Game casters, who are good in playing games, are also popular. These game casters would provide recommendations on how to play. All of the video clips and the ability to explain their standpoint through learning to play together. Some prefer to post the clip featuring themselves having a good time, while others might patiently explain the situation. In addition, some of the gamers post video of themselves playing on Youtube.

When there are new characters, we would discuss with one another. In Youtube, there would be those who make videos and our team would go to study it. RoV allows us to record the game play so there would be good players, who post and explain how to play. We learn from them. (Dech, personal communication, May 23, 2019)

Youtube has many contents to provide information. I like to watch Game Casters explain. These people are good at playing games. They would study the game and explain it to others. It shortens the time we need to search for more information because someone has already created the content. If you are interested to know anything about the game like learning how to win, you can ask and they would answer. (Pitak, personal communication, September 19, 2019)

Examples of communications that have been collected through the in-depth interview has been summarized in Table 5.2.

Table 5.2 Sample Communication Types Developed in Games

Communication Types	Example of Communication in Game
<b>1) Communication through game system</b>	1.1) Add friends 1.2) Giving likes 1.3) Giving energy or asking for help 1.4) Sharing game to acquaintance through game system that connect with social media 1.5) Exchanging game items or sending gift 1.6) Communicate through chat system in game
<b>2) Other communication channels</b>	2.1) Communication through application provided specially for game playing such as Discord. 2.2) Communication through social media such as Line, Facebook, Twitter 2.3) Communication via YouTube and Game caster

### 5.3.2 Group Communications

This study examines group communications, the researcher has compared adult gamers into five groups. They are categorized based on the social engagement, which is indicated in section 5.2.1. This includes Game engagement without social engagement, Limited social engagement, Closed social engagement, Virtual social engagement and Real social engagement. The results of the analysis are presented in table 5.3, which shows the group characteristics of each adult gamer type.

Table 5.3 Group Characteristics Based on Social Engagement

Characteristic of Group	Type of Adult who Play Digital Game			
	Game Engagement without Social Engagement	Limited Social Engagement	Closed Social Engagement	Virtual Social Engagement
<b>1. Interaction between players</b>	<ul style="list-style-type: none"> <li>- Play alone without interaction to other player</li> <li>- Talking about game with close friend or relative may occur seldomly.</li> <li>- No actual group interaction</li> </ul>	<ul style="list-style-type: none"> <li>- cooperate with acquaintance or other gamers to complete mission such as sharing game, giving energy, and add friend, etc.</li> <li>- Player may ask for guidance from people around but no group construction</li> <li>- No actual group interaction</li> </ul>	<ul style="list-style-type: none"> <li>- Team up with friends or acquaintances to play or to compete with other teams</li> <li>- Group members communicate through game system or other communication channels.</li> <li>- Conversation topic can be other than game as they have known each other.</li> </ul>	<ul style="list-style-type: none"> <li>- Player teams up with unfamiliar gamers for competition or accomplish game mission.</li> <li>- Members of the team communicate through game system or other communication channels to discuss or exchange experience about game.</li> <li>- Unknown players concretely form group or team.</li> <li>- Group members communicate through social media and other channels.</li> <li>- Conversation topics include and exclude game area.</li> <li>- Members may appoint or getting to know each other in the real world.</li> </ul>

Characteristic of Group	Type of Adult who Play Digital Game				
	Game Engagement without Social Engagement	Limited Social Engagement	Closed Social Engagement	Virtual Social Engagement	Real Social Engagement
2. Perception as group	Not found	- No team or group setting up but players are aware of having acquaintances playing the same game .	- Aware of being a member of team or game club.	- Aware of being a team member only when they are playing game together.	- Aware of being a group member. - Aware of each members' roles in the group.
3. Group norms	Not found	Not found	- The group may or may not formally set group rules or norms	- The group does not have group rules accepts collective understanding or making appointment to play game	- Group norms or group rules are developed. (For example, 'no political discussion allowed' in the group)
4. Member's roles	Not found	Not found	- Having both leader and follower similar to others	- Having both leader and follower only when playing together	- Adult players are found to take both leader role (game club leader, webmaster) and followers.

Type of Adult who Play Digital Game					
Characteristic of Group	Game Engagement without Social Engagement	Limited Social Engagement	Closed Social Engagement	Virtual Social Engagement	Real Social Engagement
<b>5. Affective relations</b>	Not found	Not found	- Group members have closely emotional engagement	- Emotional engagement only happen in short period of time when they are playing together, for example feeling of happiness when the team win the competition	- Collective emotional engagement that is not related to game has been developed gradually.
<b>6. Common goal</b>	Not found	Found	- To compete with other teams, for victory and for game rewards	- To compete with other teams, for victory and for game rewards	- Common goal is gradually changed from game competition to long term friendship.

Table 5.3 presents the group characteristics, which include member interaction, group awareness or perception (as group), group norms, role of group members, Affective relations or emotional engagement, and common goal of adult gamers that could be accomplished.

#### 1) Game Engagement without Social Engagement

Examination of group interaction revealed that gamers in this group play alone and do not engage with other players. Adult gamers in this group might ask about games occasionally from their close acquaintances. However, they do not have any interaction through the game such as asking for hearts, sharing game, or adding friends.

I play alone, I don't play with anyone; I don't have friends, who play; and I don't communicate with others. (Kanok, personal communication, May 20, 2019)

I don't talk to anyone. Some people make requests in the game but I am not interested. I don't even talk with my kids. We actually play different games. (Thitima, personal communication, May 29, 2019)

Thus, when considering the group characteristics within each topic as presented in Table 5.3, it is found that adult gamers in this group do not have social engagement. They do not interact with the group and do not have a sense of group membership. Thus, they do not have any group criteria. There is no group member role. There is no emotional connection among members nor a shared goal among group members.

#### 2) Limited Social Engagement

Gamers in this group have limited social engagement, also like to play alone similar to the group game engagement without social engagement. Although there are no clear structures in the relationship among group members, these adult gamers join others to play through the game system. Sometimes they would discuss about games with their close acquaintances. For instance, Wee (50 years) likes playing games since he was young. Today he plays games that require interaction with other players to accomplish their mission. In addition, when he has questions, he would ask his kids or co-workers.

When considering the group awareness, it is found that they do not form teams but they are aware about friends, who are playing the same game. However, they do not have other group markers such as group roles, membership role, joint emotional connection, and common goal.

I don't play with people I don't know. The game would random us to compete with people in the same level. The image of the person would pop up. We can see if they are our friends. If we know them we can choose to compete with them. In the game we can choose to share it to get points. I usually share it with people I know. (Tong, personal communication, May 28, 2019)

### 3) Closed Social Engagement

Interaction of adult gamers in this group include forming teams with close acquaintances or people they know prior to playing the game such as family members, friends, or co-workers to form teams to join missions in the game. In addition, they would discuss through face-to-face interactions and group communication channels.

Among my friends, we talk about game. We would make recommendations and invite others to play the same game. So, in the game there would be events where there are competitions between teams. The game would random the teams that compete. Players play on their own and then add the points together. (Piradee, personal communication, May 30, 2019)

In terms of group awareness, members acknowledge their membership and know the other members. Each of the group would have a leader and followers just like any regular group. However, they come together to play with people they know. Therefore, when considering the group characteristics, this group is quite formal regardless of the availability of regulations. This is because the goal is to play games only. For instance, Kant (51 years) explained that there are rules where players cannot play for one another. Everyone has to use their ability to move up to the next level. In terms of emotional connection, if it is among people, who are close acquaintances such as family members or friends, they are quite free in expressing the feelings.

#### 4) Virtual Social Engagement

This group interact with others on a short-term basis. They would form groups with people, who are strangers, primarily for the objective in playing the game. The group members communicate through the game communication channels or other channels in order to discuss about the mission. Most of them get together for a short period of time to accomplish mission then they go their separate ways.

For instance, Dech normally play with friends from his workplace. However, if they are not online at the same time, he would join other groups that the game has randomly assigned for him. “We only talk about games. We don’t talk or try to get to know each other outside of the game. If a player is really good we would give them hearts.”

However, if this becomes a repeated interaction, it opens the opportunity for the formation of a new group. When the performance in the game is satisfactory, they would add friends in order to come back to play together again. However, this is only for purposes of playing the game. Adults in this group have social engagement that includes a temporary sense of group membership that occurs while playing the game and being on missions together. This type of group does not have fixed regulations and criteria. In addition, they have to agree to the terms in the game.

In terms of the roles of members during the competition, there would be a leader, who makes the order and those who follow. For instance, Warut (40 years) admitted that he is the follower and prefers not to make any comments. He just follows what has to be done. Dech (50 years) explained that his group has no leader or follower. Jirapetch (46 years) admitted to not posting much usually just reading what others talk about unless he needs help then he would post.

I have to watch my friends. There is no leader and no follower. We might occasionally talk about discussing the moves. For instance, I might tell my friends to move down. Most of the time we would scold each other. For instance, those who play badly they would get scolded or call each other chicken. In RoV it is an online world. When we play it is not us so when we swear at each other it is just for fun. We might challenge each other but it is just in the game. (Dech, personal communication, May 23, 2019)

From the previous discussion, virtual social engagement, has the characteristic of joint emotional connection temporarily. This would only happen when they come together as a team for instance happiness in winning or even feelings of anger when team members say bad things. Adult gamers prefer to keep quiet and play the game to the end. This is because the goal of the group is to win. Once the game is over, they don't have to come back and meet each other again.

I get angry sometimes, when I often die in the game and the other members make fun of me. I just keep playing and follow what they are doing. I don't talk back. I don't mind and don't answer. I just play and when it is over; I join another group. (Tanakorn, personal communication, October 5, 2019)

#### 5) Real Social Engagement

This type of interaction among adult gamers includes those who are involved in the real world. They start the relationship from playing games together. Engagement starts in the game and develops to the formation of groups that have communications among members through the channels created by the group such as Line group, Facebook group, or other channels. This includes face to face meeting such as appointments. Social engagement through digital games extends beyond the virtual world in the game to the real world. The conversation is beyond the game. They talk about other topics such as getting to know each other, learning each other's preferences, sharing experiences, and seeking advice for problems.

In the Line group, we usually talk about the game. We might meet up to join missions. Sometimes, we go out to eat together because we chance up on each other in the department store. When we meet, we don't meet everyone. Rather we meet in small groups of people, who are close to one another. (Suthep, personal communication, July 24, 2019)

We sometimes seek advice about other issues like romance. In my group, however, most are men interested in sports. So, when I learned that people in the group like the same team, we enjoy the conversations even more. We play many games together including Summoners War. From knowing each other in the first game, we have come to play other games with each other. (Pitak, personal communication, September 19, 2019)

The new group formed develops its own rules and standards. Some groups do not allow posts selling products or discuss about politics. Members have a sense of group awareness. Each of the members have their own role to play. In this new type of social engagement most of the adult gamers have the role of leader and follower. For instance, Ake (42 years, focus group) has the role as administrator or being in charge of the Line Group A. Tri (58 years), meanwhile, is a member of group B, C, and D going into the group to take care of the information posted by group members for sharing information.

In terms of emotional connection, it is found that the emotional relationships formed among group members that was not related to the game would slowly develop. This includes holding public running events after successful completion of in game mission. The group goal also slowly changes from competition to creating long-term relationships.

### **5.3.3 Communications to Create Social Engagement**

Analysis of the communications to create social engagement through digital games among adult gamers is presented in the following section.

#### **1) Game Engagement without Social Engagement**

Adult gamers, who like to play alone do not interact with other players, who play the same game, even if they know each other. The communications found in this group are the type of recommendations and invitations using the channels available in the game (adding friends, sharing games, and asking for hearts). There are requests from other players but there is no response from this group. For instance, Thitima (48 years) admitted that there were people, who asked to add friends or request hearts, but she was never interested. There is no response. The communication in the game is one way with no response.

The research findings indicate that this group of adult gamers learn about games from media and people around them. They would ask or access advertising about games then they would load it to try.

I used to ask my kids but later came to study about it on my own. I don't ask anyone. I choose to load the game and play it. I would learn about how to play the game. In addition, I get game recommendations from Facebook. If I find it

interesting, I would check it out. In the application there are also game recommendations. (Sarocho, personal communication, April 25, 2019)

## 2) Limited Social Engagement

Those, who prefer to play alone, also need to join missions within the game with people their acquaintances or others, who play the same game. They might exchange items, ask for hearts, share the game, and add friends. The communication is done to provide recommendations. It is a two-way communications that sends invitations through sharing the game or adding friends. The interaction is generated through activities such as giving hearts back and forth.

However, joining in missions among players, there is no clear structure. This means there is no formation of teams or groups that provide advice regarding playing the game. There is no group communications and there is no relationship development among gamers, who don't know each other personally.

This group of adult gamers might consult people they know about the games. The communications channel might be face to face or personal social media.

Usually I play alone. I don't form groups but I sometimes talk to people I know, who play the same game. There are also parents of my children's friends because I need to login to Facebook to play. I know they play the same game but we don't talk much. Sometimes, we do when we meet like thanking one another for watering the plants. Sometimes, we exchange favors so we chat on Line sometimes or when we meet. (Ura, personal communication, May 27, 2019)

## 3) Closed Social Engagement

Adult gamers in this group would join or set up teams with people they know such as family members, friends, and co-workers. The objective is to successfully complete missions together or compete with other teams regardless of whether they know each other before. The communications found in this closed social engagement group are usually two-way communications providing recommendations and conversations.

The communications providing recommendations are two-way in nature. This is found in the exchanges during missions such as sending and receiving hearts and invitations to join teams. Players in the same team are close acquaintances from whom they can get advice and exchange information about games. This communication is in the form of conversations and all members can express their opinions equally.

We talk among co-workers, who play the same game. This is because there are events in the game requiring players to form teams. So, we set up teams to compete with other teams that the game has randomly selected for us. However, we don't play at the same time. Each of us play and collect our points. In our team, there are 7 members. We sometimes discuss with one another, like when we run into problems. I ask members in the group to help or even play for me. (Piradee, personal communication, May 30, 2019)

I have recommended my friends to play certain games. I would tell them to try it out. It is a topic that comes up often. Sometimes I also ask from friends or my younger brother. (Mas, personal communication, May 29, 2019)

Closed social engagement group usually communicate clearly such as through Line or Facebook group. They might make appointments to play the game together.

... we have a family Line group. When I win I would brag about it in the Line group. At first, I would often ask for hearts. Later I learned that there are other ways to get more hearts faster. Sometimes there are events in the game so we form groups to compete. When we win, we get rewards. (Suphan, personal communication, June 18, 2019)

#### 4) Virtual Social Engagement

Adult gamers in this virtual social engagement group usually join missions with players they do not know online. For instance, they might join players they do not know to compete against other teams. The communications in this group are recommendations, which are two-way in nature in the form of conversations.

The recommendations are a form of two-way communications. It is in the form of invitations from the game to join. This could also be in the form of conversations through applications with the goal to play games. Members in the group might not know each other people but know each other through the game. They talk about the exchange information about the game in addition to planning the game play among each other. They engage in conversations as well as planning for the new players. They also consult each other among group members. There are also consultations among group members. Communications is open so all members can freely express their opinions.

Gamers in this virtual social engagement group would not want to get to know people from real world. Unless data has to be collected regarding age and gender. There has to be communication channels through the game and social media. Sometimes they would go out and meet to do missions together. However, it is considered a temporary engagement with the goal to accomplish missions in the game.

Tanakorn plays RoV but not regularly. Due to the work demands, he and the rest of the members in his group talk less. Thus, when he has time he takes a break so he won't have to ask others if he can join.

The game randomizes the team. After we complete 4 challenges it is the end and I leave the team. I might find a new team. For those, who are really serious, they would practice with their team. I am not the serious type. If I want to play I join the group, when I finish I leave. I don't contact them after that. I don't have any Line group. (Tanakorn, personal communication, October 5, 2019)

The research findings indicate that adult gamers in the virtual social engagement level might develop long-term relationships through repeated interaction. This is the case for Warut (40 years), who explained that he is still joins with players from the same group for Seven Knight game. However, the engagement is still only about the game.

##### 5) Real Social Engagement

New social groups that originate from games come together. They start to have groups that enable communications among group members. The

communications is in the form of social engagement. Adults in this group communicate using conversations. All of the members are equal and can make any suggestion. They can also choose the activities that they want.

The communications in the group, in addition to face-to-face communication, it also includes communication through social media channels such as Line and Facebook. The group activities are still based in the game but have developed to include other aspects. They would nurture the relationship by eating together, knowing each other personally, and other activities. Once they know each other personally, they would engage in other activities such. For instance, group engagement might lead to long term engagement.

In the beginning the game has a guild system, which is similar to a political party that we are part of. We can talk to one another; we might know each other from the game. After we know each other for a long time, we would start to exchange ideas and talk about personal issues. (Pitak, personal communication, September 19, 2019)

I have friends in many groups, who started knowing each other through games. We end up in the same group and talk to each other continuously even now. In addition, we don't just talk about games, we also discuss personal issues. We have meals together sometimes we meet before or after the event. Let's say the event is at 4 PM, we might make an appointment before to eat together before heading out to play. How often we meet? We meet every month because there is an event every month so we meet up quite often. (Ake, personal communication, July 24, 2019)

The research findings can be summarized in the table that compares the communication used in the creation of social engagement and interaction among adult gamers.

Table 5.4 Communications for Social Engagement

Types of Adult Gamers	Forms of Social Engagement Communication		Engagement Level
	Explanation of Interaction	Communication Channels	
<b>Game engagement without social engagement</b>	- Advocacy (One-way communication)	- Interacts with game, does not interact with other gamers - Receive game news from media or from friend and family member	- Low social engagement
	- Advocacy (Two-way communication)	- Communication through game system - Receive game news from media or from family member and friend. - Face to face communication	- Low social engagement
<b>Limited social engagement</b>	- Interact with teammates, other group members, and unknown gamers through game activities	- Communicate through game system	- High social engagement but limited only acquaintances.
	- Team up or set up the group with acquaintances for accomplishing game.	- Receive game news from media or family and friend. - Most groups create communication channel for	
<b>Close social engagement</b>	- Interact with teammates, other group members, and unknown gamers through game activities	- Communicate through game system	- High social engagement but limited only acquaintances.
	- Team up or set up the group with acquaintances for accomplishing game.	- Receive game news from media or family and friend. - Most groups create communication channel for	

Types of Adult Gamers	Forms of Social Engagement Communication	Explanation of Interaction	Communication Channels	Engagement Level
Virtual social engagement	- Advocacy (Two-way communication) - Dialogue	- Have conversation to discuss about game.	members such as the group's Line or Facebook. - Face to face communication	
		- Interacts with teammates who are unknown persons through game mission. -Temporary join the team with unknown persons for only game purpose. - Have conversation to discuss about game with teammates during game play.		
Real social engagement	- Dialogue	- Unknown players interact through game playing before	- Group communication - Communication through game system - Receive game news from media or other gamers - The group may create more communication channels through application for gamer groups (such as Discord) or through social media (such as group's Line, group's Facebook)	- Temporary high social engagement level that can be developed to long-term relationship

Types of Adult Gamers	Forms of Social Engagement Communication	Explanation of Interaction	Communication Channels	Engagement Level
		<p>developing to getting to know each other in real life.</p> <ul style="list-style-type: none"> <li>- Social group, which may be originated from game club, is gradually developed to do activities apart from playing game.</li> <li>- Interaction between group members are as equal as member can freely express whatever they think.</li> </ul>	<p>such as group's Line, Facebook.</p> <ul style="list-style-type: none"> <li>- Topics of conversation expand to other than game.</li> <li>- Face to face communication (Members may do activities outside game world together)</li> </ul>	<p>developed to long-term relationship</p>

## **CHAPTER 6**

### **CONCLUSIONS AND DISCUSSIONS OF RESEARCH FINDINGS**

The study titled “Adult’s Social Engagement through Digital Game” has the objective to study the digital game playing phenomenon. It aims to answer 5 issues including digital game playing behavior of adults, motivation adults have in playing games, engagement adults have with games, format of social relationships adults have through digital games, and the communications to create social relationships among adults. The research methodology used is the mixed methodology that includes qualitative and quantitative methods.

#### **6.1 Summary of Research Findings**

The summary of the research findings is categorized in five topics, which are adults’ game playing behavior, motivation adults have in playing games, engagement adults have with games, format of social relationships adults have through digital games, and the communications to create social relationships among adults through digital games.

##### **6.1.1 Adults’ Game Playing Behavior**

This study aims to examine the digital game playing behavior of adults, which can be categorized in 6 areas. This include frequency in playing games, type of games played, game and type of games preferred, person with whom game is played, payment for items in game, and opening to news about games.

###### **6.1.1.1 Frequency in Playing Games**

The quantitative study conducted on 402 respondents revealed that 45% of them played games for 1-2 hours per day. This is followed by 29.1%, who play less than 1 hour per day and 23.1%, who play on average 3-4 hours per day. The remaining 2.7% play more than 5 hours per day.

The qualitative study, which collected data from 32 informants, revealed that 18 of them played games for no more than 2 hours per day. The remaining 16 informants play games for more than 2 hours per day. Those, who do not play more than 2 hours per day, usually play games to kill their time, need activities to do during their spare time, reduce stress from work, to keep them company, and for entertainment. For those, who play games for more than 2 hours a day, they are more serious in their games, which is why they spend more time. This is because they want to collect characters, move up levels, and train to achieve certain goals such as being a professional.

#### 6.1.1.2 Type of Game Tools

The quantitative study revealed that adult gamers using mobile phone the most (82.1%). This is followed by personal computer (PC) (26.4%) and tablet (22.9%) respectively.

The use of smartphones to play games is in line with the qualitative study. Informants explained that the smartphone is convenient since it could be carried anywhere. They also explained that the graphics on the mobile phone has been developed making it aesthetically beautiful. Although the majority of adult gamers primarily play on the mobile phone, they usually own more than 2 gaming devices. They might even play together on more than one device such as using tablet and personal computer or gaming device. Some even use 2 mobile phones in order to switch between games or use it register for another account. This allows them to play the game by relying less on others.

#### 6.1.1.3 Game and Type of Games Preferred

The quantitative study revealed that most of the adult gamers played Candy Crush (28.5%), which is in line with the qualitative study. This is followed by Pokémon Go (16.3%) at second place and RoV (12.5%) and Homescapes (11.8%) respectively. The fifth most popular game is Hay Day (10.8%). When categorizing based on the type of game, it is found that the most popular games are puzzle games (34.7%), followed by role-playing games (RPGs) (21.8%), simulation games (16.9%) at third place, strategy games (10.4%), and action games (8.7%).

The qualitative study revealed that adult game players usually played more than one game at a time. They would download many games that they can

choose to play. Informants also gave different reasons in playing games. They often chose games that reduce their stress, help them relax, can play with family members, play games that stimulate thinking or strategy, play games that are beautiful, and choose games that fit their lifestyle or interest.

#### 6.1.1.4 Game Partners

The quantitative study reveals that most of the respondents play alone (79.9%), followed by playing with people they do not know (25.1%), third place is playing with friends (18.7%), and fourth place is playing with family (13.7%).

The qualitative research revealed that 18 from 32 informants preferred playing games alone and might join missions with those they did not know. The remaining 14 respondents joined their friends or acquaintances to form teams to play together. Some of them join groups randomly assigned by the game. In addition, the study revealed that some of the informants used playing digital games as a means to develop relationship with family members.

#### 6.1.1.5 Game item buying behavior

The quantitative study revealed that most of the respondents did not spend money in the game (51.2%), while 32.1% revealed that they occasionally pay to buy items in the games. About 8.75% would spend no more than 500 baht per month. About 3% pay between 501-1,000 baht per month, while 2.7% pay 1,001-2,000 baht per month, and the remaining 2.2% spent more than 2,000 baht per month.

The qualitative study classified the spending into three groups. It is found that most did not pay any money to make purchases. Most of the informants download many games to play while waiting for their characters regain their powers, without the need to pay. Some of them said they were not in a hurry to move up the level. They can wait and refuse to pay in order to upgrade their characters. The second group are those, who have bought items in the past but do not do so now. The last group are those who are willing to pay to buy items in the game. These can be further categorized as those who do not pay regularly, and those who buy occasionally during promotions making the purchase worth the price paid. Some of the players are not sure if buying items would help them win. Another group are those, who make purchases every month. Informants explained that payment was made for entertainment and it is well within their budget so it does not cause them any trouble.

#### 6.1.1.6 Exposure to game news

The quantitative study revealed that respondents have access to information from games through social media the most (59.6%), followed by friends (32.2%), and family at the third place (20.7%), and games website (18.2%).

The qualitative study revealed that most of the informants researched about information games on the Internet more than asking people around them. Most of the informants received information about games from Facebook, which would often have Pop Up advertising. The interviews revealed that there were many channels used for accessing information. Some of the informants explained that they accessed information from applications, App Store, and Play Store. Others choose to follow game masters, who provide information and teach game playing techniques on Youtube Channels. There are also some informants, who ask their friends or family members before searching for more information on the Internet.

### 6.1.2 Motivation of Adults in Playing Games

The research classified motivation of adults in playing games into two types, which are motivation from the player and motivation from the game played. The research findings could be surmised as follows:

6.1.2.1 Motivation from Players could be further classified into four groups, which are entertainment motivation, relationship with others motivation, identity creation motivation, and information seeking motivation.

The research findings reveal that the entertainment motivation has the most impact on game playing behavior of adults, when compared to the other three motivations. The findings of the quantitative and qualitative studies are congruent.

The quantitative research indicates that entertainment motivation is the most important at “moderate” level ( $\bar{x}$  equals 3.17, SD equals 0.673). The rest of the three motivations have low rating. The analysis of the 14 items that make-up the 4 motivation categories, show that the most influential aspect on game playing behavior is entertainment, which is “enjoyment, admiration for the game, and challenge” that has high level ratings ( $\bar{x}$  equals 4.10, SD equals 0.963). This is followed by “relax and reduce emotional stress” that has high level ratings ( $\bar{x}$  equals 3.99, SD equals 0.973)

and third is relationship motivation “play games to find friends to reduce loneliness” at the moderate level ( $\bar{x}$  equals 3.12, SD equals 1.142).

In terms of the qualitative study, it is found that entertainment motivation is the main driver for adult game playing behavior among informants in particular the need to reduce stress, playing for entertainment, and kill time or to avoid boring daily routine. Other motivations include playing games to reduce loneliness, recommended by family and acquaintances, keeping up with the times, need to build identity, and curious about the game. The research findings also indicate that many motives work together at the same time influencing the game playing behavior.

6.1.2.2 Motivation from Games could be categorized into three main groups, which are the motivation for success, for socializing with other gamers, and atmosphere within the game world. Respondents gave the most importance to success or achievement motivation in driving game playing behavior.

The quantitative study found that success motivation had the most important impact among respondents at a moderate level ( $\bar{x}$  equals 3.17, SD equals 0.949). Analyzing motivation from the game at subtopic level the research found that, the motivation “moving up level to win gold medal, rewards, and wealth” has the most impact at a moderate level ( $\bar{x}$  equals 3.23, SD equals 1.126). This is followed by subtopics in the success motivation “interest in system and rules of the game to improve character performance” and “challenge in the competition to win over others” at the moderate level ( $\bar{x}$  equals 3.20, SD equals 1.083) and ( $\bar{x}$  equals 3.08, SD equals 0.973) respectively.

The qualitative study is in line with the quantitative study. It is found that most of the respondents give importance to the success motivation aspect that is derived from the game. The most important aspects in driving adult gamers to continue playing are moving up level, receiving rewards, and challenge. However, there are other motivations that attract gamers include the atmosphere in the game or competition with others. Other respondents explained that motivation is also derived from engagement and co-creation in storytelling and character development.

### 6.1.3 Adults Game Engagement

The research utilized qualitative methods in order to examine the phenomenon. The findings were classified into four categories, which are engagement with atmosphere in the game, social engagement with other people in the game, self-engagement, and engagement with playing the game. Each of the categories could further be classified into three aspects, which are understanding and game related thoughts, emotions and feelings with the game, and game playing behavior.

#### 6.1.3.1 Engagement with Game Environment

The findings regarding the understanding respondents have in terms of the game revealed that it results from familiarity in the past regarding content, environment, or character in the game. This familiarity results from exposure to books or movies. Some of the respondents are engaged with the novelty or uniqueness of the game including beauty and atmosphere in terms of game logic. In addition, another group of respondents are engaged with games that are similar to those that they have played in the past.

The study regarding the emotions and feelings towards the atmosphere and environment in the game revealed that respondents gave importance to effects such as lighting, color, and sounds in the game. Beautiful graphics and natural sounds create excitement, entertainment, and thrill in playing the game. In addition, some of the respondents feel entertained in collecting characters in the game that are novel.

The research findings in terms of behavior found that the environment or atmosphere in the game, has an impact on the respondent's game playing behavior. For instance, gamers have the chance to change the environment such as gardening, home improvement, or collecting coins to buy aquariums or feed fish. Respondents explained that they played certain games to observe the changes in the graphics of the characters in the game.

#### 6.1.3.2 Engagement with Game Society

The research findings in terms of knowledge and understanding towards game society and other gamers were categorized into two groups. These include lone gamers or those, who play with their close acquaintances with no interaction in the game or other players they do not know. Respondents, who are more open to new interactions can play with those that they do not know. This is because the game is

considered as a space for cooperation even with strangers, which eventually leads to friendships in real life. Although some of the players avoid playing with strangers, some use games as a tool for communications. Some use games as a means to get close to and foster better understanding with children or those of a different generation. Also, it is an activity that builds a relationship with family and work colleagues.

Findings in terms of emotions and feelings in regards to society in the game and other gamers. It is found that respondents played with people they knew resulting in closeness with each other. They got to talk more resulting in excitement and fun in playing games. In addition, it helps to reduce loneliness. The phenomenon where gamers play with strangers online, reveals a positive engagement. This includes feelings of fun in playing the game that is played by many people. In terms of negative engagement, it includes feelings of fear and lack of safety in playing with people they did not know. This includes experiences of quarrelling and using negative words at one another.

The research findings in terms of game playing behavior impact on gamers' society, found that some of the respondents feel engaged and want to play games as a team. They want to talk and discuss with other players about the game. Some of them have many accounts so that they can play with many teams. Others have lifestyles that compliment playing games such as travelling together with game group. In addition, some of the respondents used the behavior in the gaming society for benefit in real life

#### 6.1.3.3 Self or Identity Engagement

The research indicates that self-engagement or engagement with avatar is derived from understanding. The selection of characters that represent one-self is derived from personal preference. They usually select from the offers given in the game and do not care much about clothing, accessories, or weapons. The emphasis is on playing the game. The second issue is that some players give importance to the avatar selected. They view that the avatar is their representation in the world of the game. They would usually select an avatar that is similar to themselves and train to become experts.

In terms of emotions and feelings it is found that some respondents feel a sense of success and pride when they see that the characters that represent them are developing or become successful in the game. The study also indicated that in some games, people learned to use the skills or roles in the game in fulfilling their real-life issues.

The findings in terms of game playing behavior found that the game type is congruent to the lifestyle of the gamer. The engagement with the character or avatar has an impact on the game playing behavior. It is found that gamers might dress stylishly in real life, while some might pay to dress up their character. Some seriously play the game to collect coins to improve their character and watch the development with pride.

#### 6.1.3.4 Game Playing Engagement

The findings regarding the understanding towards the game revealed that the first issue is about game playing. This is mostly positive since they view that they receive numerous benefits from the game including improving concentration, planning and strategy, and practice perseverance and dedication. The second issue is the negative issue derived from the game. Some think that the game is too influential particularly on children, who might end up spending a lot of money. Playing too much games might also have a negative impact on the eyesight in particular when a lot of time is spend playing the game oftentimes.

In terms of the emotions and feelings, most of the respondents admit that playing games helps to reduce stress and create fun entertainment. However, some of the respondents feel frustrated from playing games, when things don't go as planned. In addition, some of the respondents observed that there is a difference between the way children and adults play the games. Children tend to be more courageous, thus, they are more successful in the games.

Findings in terms of game playing behavior indicate that when gamers are engaged with playing the game, they become more dedicated. This means that they would make plans to win, pay to buy items, or spend time in playing the game. For instance, some of the gamers play every day in order to defeat the game. They want to progress through the levels and even use the experiences in the game to adapt to their work or their own life.

#### **6.1.4 Format of Adults Social Engagement through Digital Game**

The research presents the findings in three parts, which are: Type of Social Engagement in Playing Games, Social Engagement Creation Process through Digital Games, Development of Five Social Engagement Types in Social Engagement Process.

##### **6.1.4.1 Types of Social Engagement in Playing Games**

The research titled, “Adult’s Social Engagement through Digital Game” categorized the characteristics of gamers into two groups-single player and group player. The analysis of social engagement through game playing could be further classified into five types. In single player category there are two types found, which are ‘Game engagement without social engagement’, and ‘Limited social engagement’. In the group player category, there are three types found, which are ‘Closed social engagement’, ‘Virtual social engagement’, and ‘Real social engagement’. These five types of engagement have differing details that would be discussed in the following section.

1) Game Engagement without Social Engagement-The main characteristic is a single player, who has no interaction with other players. They usually select games that are conducive to completing missions alone. However, these gamers might talk to people around them about the game occasionally. This type of gamer is called ‘Solo player’.

2) Limited Social Engagement-The main characteristic is a single player, who might have activities with people in their social circle such as relatives, friends, and work colleagues. They might ask for heart stickers, share games, exchange items, or join missions. However, there is no further communications to better know the others. They might seldom talk about the game or discuss with their acquaintances in the game. But they do not form groups to play the game. They are known as ‘Pseudo solo player’.

3) Closed Social Engagement-The main characteristic is the group playing behavior. They form groups with people they know and communicate with one another regularly. These people would talk using their phone, msn, or through social media such as Line or Facebook. They also join activities such as exchanging items in the game, give life power, and give hearts. The team formed

might compete with other teams that they do not know through the random system of the game in order to fulfill the mission. This type of gamers will not try to extend relationship with other unknown gamers nor interact beyond the mission in the game. These gamers are known as ‘Local guild player’.

4) Virtual Social Engagement-The main characteristic is the formation of groups with players, who are not acquaintances through the game’s system. The goal is to form teams that have a common goal in fulfilling the mission in the game. The team members communicate using the tools provided in the game or use other channels in order to successfully complete the mission. The communication channels include Line, Facebook, and Discord. The formation of such groups that have no prior acquaintance might only be a one-time thing or continuous in order to accomplish the mission. There is no effort to build relationships beyond the game. This type of gamer is known as ‘Online guild player’.

5) Real Social Engagement-The main characteristic is the real social group which originated from member who are not acquaintances but come to join a team through the game’s system. The goal is to form teams that have a common goal in fulfilling the mission in the game. The team members communicate using the tools provided in the game or use other channels in order to accomplish the game mission. Example of communication channels include Line, Facebook, and Discord. Gradually the group members get to know each other. The members then systematically form the group through creation of Line Group or Facebook Group. There is a person, who takes the administrative role to maintain the rules in the group. The members meet up and know each other in the real world. There is interaction and meeting to join activities beyond the game. These gamers are known as ‘Social player’.

#### 6.1.4.2 Social Engagement Creation Process through Digital Games

The research findings indicate that the social engagement creation process could be divided into seven stages as explained in the following section.

Stage 1 Motivation that leads to playing the game, which is the start of engagement-The research findings indicate that respondents exhibit high motivation at the start of playing the game, which is idiosyncratically diverse.

Stage 2 Immersion of game engagement-This stage is important in playing the game. If the gamer does not feel engaged with the game, they would feel bored and eventually give up playing the game. On the contrary if they feel engaged with the game, they would play it continuously and focus on achieving the mission in the game.

Stage 3 Communications via game activities-In this stage there are social factors involved. Gamers need to complete missions with other players, who could be acquaintances or strangers. This happens when group members decide to join missions with other players. Each of the missions would differ and require different communications and interactions between team members.

Stage 4 Emotional sharing-From working on missions together regardless of success or failure, team members would feel a sense of cooperation. For instance, they would be happy when the mission is successfully completed or sad when they lose. This feeling of togetherness is the main driver of engagement and feeling of group membership.

Stage 5 Creation of group communications channels-Once the togetherness feeling is formed, the next stage is the creation of group communication channels. The game system today enables players to communicate with one another. For instance, the function of adding friends or requesting hearts. There are also chat systems available for communications, while playing the game. Players can communicate using their microphones or they can create their own channels such as Line Group or Facebook Group.

Stage 6 Joining activities beyond the gaming world-When players often join missions together, they start to communicate through group channels such as Line Group or Facebook Group. This relationship progresses to other activities beyond the world of the game. For instance, they might make appointment to eat together and communicate about issues that are beyond the game.

Stage 7 Creation of new social group from game to real world-When gamers do activities together often, they become familiar with each other resulting in engagement. The research findings indicate that the relationships that start in the game might become real world relationships. Communications are made through Line then they meet up and do activities together. This eventually leads to the formation of

a new social group that has its roots in the game. These social groups can become lasting friendship. The research findings confirm that this friendship formed based on the game could become a lasting relationship.

#### 6.1.4.3 Development of Five Social Engagement Types in Social Engagement Process

The research found that the 5 social engagement types were developed at the different stages of the social engagement process through digital game playing. The game engagement without social engagement type is found in stage 2 (gamer immersed to the game played). Meanwhile the limited social engagement type developed in stage 3 of the process (communicates through game mission). The virtual social engagement type is found in stage 5 (creating group communication channel). For the next stage which is stage 6 the research found the closed social engagement has developed and then the real social engagement type through digital game is developed at the last stage of the social engagement process through digital game. The last social engagement type will be developed when a group of gamers communicate to getting to know other group members and decide to join activities beyond game world.

#### 6.1.5 Communication for Social Engagement Process through Gaming

The research findings in terms of communications creating social relationships among adults in digital games could be categorized in three types, which are communication through games, group communications, and communications to create social engagement.

##### 6.1.5.1 Communication through Games

The goal of the study of adult communication through games aims to examine the communication among players through playing digital games. The findings indicate that respondents have experiences in communicating through the game, which can be classified as using the gaming system and other channels as follows:

1) Communications through Game System examples include the following:

(1) Adding friends through the game system in order to achieve the mission or create communications channels with other gamers to play together later in future missions.

(2) Giving likes through the game system during or after playing the game. This is done to acknowledge a strong player, who when receiving a lot of likes would be awarded by the game system.

(3) Asking for help in the game such as requesting life power in the form of hearts or creating a sign to ask for help.

(4) Sharing game to friends so they would know about the game through the system. This would usually be connected to social media such as Facebook or Line in exchange for points or rewards in the game.

(5) Exchanging of items or sending gifts to other players through the system in order to accumulate points or for other purposes

(6) Communicating through the chat in the game, which could be used to create groups for communications, gamers could chat in the game and communicate using their microphone to join conversations.

2) Other Communication Channels examples include the following:

(1) Communication through applications and communications for games such as Discord, which provides convenience in communications. It is better than the chat in the game.

(2) Communications through social media such Facebook, Line, or Twitter in order to seek advice or information about the game. These platforms remain popular among gamers in seeking advice for playing the games in their respective teams. In addition, it provides a forum for exchange of knowledge about the game.

(3) Communications through YouTube and Game casters is particularly useful in games that need working in teams. Using YouTube in planning the strategy for playing as a group or studying game play from a game caster, who is knowledgeable to explain how to play the game. Some would even provide video clips of their own game play on YouTube.

#### 6.1.5.2 Group Communications of Adult Gamers

This study utilized the criteria of group membership, which has interaction, group awareness, group rules, role of members, emotional relationships, and common goals. The study examines group communications that creates social engagement among adults through digital games. This is done through comparison of the five adult groups of gamers presented as follows:

##### 1) Solo Player

The study examined the group interaction and found that solo players did not interact with other players. These players might occasionally ask about games from their close acquaintances. However, they do not engage in any interaction through games such as asking for hearts, sharing games, or adding friends. When considering this categorization by topic, it is found that this adult group of gamers are engaged with the game but not the social component. There is no group interaction nor group awareness, thus it does not fit the criteria of being a group. There are no roles for members, no emotional engagement among members, and no common goals.

##### 2) Pseudo Solo Player

This group has limited social engagement. They like to play alone or with groups but do not have any engagement beyond the game. There is no clear group interaction. This group of adult gamers join missions and play with others through the game system. They might occasionally consult with acquaintances about the game. In terms of group, there is no formation of team or group. However, they are aware that they have friends or acquaintances that play the same game. In terms of other characteristics, there is no criteria for group, no membership role, no emotional engagement with group, and no common goals.

##### 3) Local Guild Player

In terms of interaction of this group, it is found that they form groups or set up teams among close acquaintances. They might know each other before playing the game such as family, friends, and work colleagues. They join missions in the game. In addition, they might talk and consult about the game in face-to-face communications or through group communication channels. In terms of group awareness, they know that they belong to a group or team. In this group there is a leader and followers like any other regular group. However, since it is group formed

from people, who have previously known one another, it fits the group criteria. It is found that these groups might choose to have rules or chose not to. Nevertheless, these groups are formed for only the purposes of the game. In terms of emotional engagement, they are already familiar with one another since they are family or friends. Therefore, they express their emotions with one another freely.

#### 4) Online Guild Player

This group has temporary interaction through group formation of gamers, who do not previously know one another. The goal is to play the game. Members in the group communicate through the game system or other communication channels in order to discuss about the game mission. The interaction becomes repetitive, when the previous game mission is satisfactory. Therefore, they would add each other as friends and come to play together again. However, their friendship is for the purpose of playing the game. Their social interaction would only be temporary through joint missions. They do not have specific rules or criteria. Members make an agreement regarding the game. The role of group members are based on the competition. There is a leader, who orders the other group members, and there are followers. In terms of the emotional engagement among group members, it is expressed only when they come together as a team. They might feel happy when they win or get upset when they are scolded by other group members. The research findings indicate that some of gamers, who are scolded prefer to just keep quiet and finish playing the game. This is because the only goal of the team is to complete the mission and win. Once the game is over, they just leave and don't come back to meet the rest again.

#### 5) Social Player

The engagement characteristics of this group is like that in a real social circle. Gamers start by playing together and start their relationship in the gaming world. They later develop tangible groups. The communication among group members are made through channels created by the members such as Line Group, Facebook Group, or other channels. This includes face to face communications such as meeting in person. The creation of this social interaction through digital game crosses from the virtual world in the game to reality. The conversation topics transcend beyond just issues about the game to other topics. Therefore, the members

know each other for real. They exchange their real experiences and discuss the challenges that they face. These newly formed groups develop rules and criteria for the group. Some have rules banning posts selling products or about political views. All of the group members acknowledge membership and know their roles. The emotional engagement reveals that members in the group engage in more topics than just the ones limited by the game. They start to join activities like running in public together after the mission in the game has been accomplished since it is the shared goal of the group that slowly shifts from competition to long-term friendships.

#### 6.1.5.3 Communications to Create Social Engagement

The analysis of the communications to create social engagement through digital games among adult gamers is presented in the following section.

##### 1) Game Engagement without Social Engagement

Mid adult players who belong to this type of engagement prefer playing alone and not to communicate with other. The communications format found in this group may occurs to provide recommendations and invite other players. This is done in the game system (add friend function, share game, or asking for heart) and other members. However, sometimes this communication might not receive the responses. This is because the nature of the communications is one way and there is no feedback. However, people in this group are aware about the game through various media and people around them. They might ask or watch advertising about games and try to download it for trial.

##### 2) Limited Social Engagement

The type of communication is usually used for recommendations. It is comprised of two-way communications, which include invitations through sharing games or adding friends and there is engagement through joining in game activities. For instance, they might send hearts back and forth. However, joining this type of activity there is no clear or fixed group structure. Thus, there is no grooming of groups to seek recommendation about playing the game and there is no group communication channel. In addition, there is no relationship development with gamers that they do not know personally. The gamers in this group might ask advice or information about games from people around them that they know. They would use face to face communications or personal social media to do so.

### 3) Closed Social Engagement

This type of communication is found with those, who have close social engagement. The communications is for providing recommendations, which can be done in two way communications. This includes activities such as receiving and sending heart or invitation to join teams. In addition, the conversation in this group of close acquaintances would be about advice or exchange of game information. The communication format is conversation. Everyone in the group can openly express their opinions as equals. The closed social engagement groups have their own clear communications channels such as through Line Group, Facebook Group, or making appointments to play games together.

### 4) Virtual Social Engagement

The communications format focused on advice in two- way communications and conversation. The two-way communications in providing advice are in the form of invitation through the game system to join groups or invite others through applications to play games together. The group members may not know each other previously. They know each other through the game and have conversations, where they exchange information and plan the game play strategy among members. The communications in the form of conversations enables all of the members to express their views about the game freely through the game system, social media, or might meet at locations to join missions together. This is classified as a short-term engagement among those, who have common goals in joining game missions only. The research findings indicated that adult gamers have virtual social engagement, which might develop to long-term engagement through repeated interactions.

### 5) Real Social Engagement

The communications format in this group to create social engagement among adult gamers are in the form of conversations. All of the members are equal in presenting their opinions or choose to join missions voluntarily. They might use the group communications channels in addition to face-to-face conversations such as Line Group and Facebook Group. The activities are still founded on the basis of the game. The relationships however progress to include other issues. It usually starts with meeting to have meals together. They would start to know

personal information and join in other activities. Thus, the level of engagement in the group becomes a long-term relationship.

## **6.2 Discussion of Research Findings**

The discussion of the research findings is presented in five parts as follows:

6.2.1 Characteristics of adults reflected through playing games

6.2.2 Adult's motivation in playing game

6.2.3 Engagement of Adults in digital games

6.2.4 Factors influence adult's social engagement through digital game

6.2.5 Communications in the adult's social engagement process through games

### **6.2.1 Characteristics of Adults Reflected through Playing Games**

The research titled, "Adult's Social Engagement through Digital Game" revealed that the identity or characteristics of adults are reflected through playing the games. This is in line with Jung (1971, as cited in Papalia et al., 2007), who explained that adults have a sense of individuation. This is the true sense of self that has developed to achieve balance with the personality that has been developed over time to survive with roles in taking care of the family or work. The game playing behavior would reflect the identity of the adult as explained in the following section.

Middle-aged adults prefer to play games alone the most. This is in line with De Schutter (2011), who studied game playing behavior of adults in Belgium and found that Belgian middle age adults also preferred to play games alone. It can be explained that the behavior in playing games alone is because adults at this age mostly dedicate to their work and family (Basseches, 1984, as cited in Chularut, 2005). Thus, a majority of them do not have time left to create new social engagements. The reason is different from elderly, who experience physical changes and reduced social roles, then slowly slip away from society and they have less activities with others (Yodpetch et al., 2017). These characteristics are reflected in playing games alone.

Adults like to play puzzle games the most (34.7%). The finding is in line with the research conducted by Ma (2017), who studied the type of games played by

Canadian adults and report from BBC (Pratchett, 2005). These findings show that gamers aged 51-65 years in England like to play puzzle games. The analysis showed a comparison based on the model developed by Granic, Lobel & Engels (2014), which explains the characteristics of the puzzle game. There is a low level of social engagement. The players engage with only the game without relying on other gamers. In addition, the game is not very complicated and easy to play. These characteristics of puzzle games fulfill the needs to relax from work stress. It is a means to develop socialization for middle-aged adults. In addition, it is suitable for the physical condition and weakening of the senses of the elderly, who need entertaining activities to relieve their loneliness. These games need to be easy to understand.

The research findings also found that in addition to puzzle games that are favored by middle age adults, Role Playing Games (RPGs) is favored second (21.8%), followed by simulation games (16.9%) and strategy games (10.4%). In addition to entertainment and relaxation from stress some of the adults like to plan and strategize. They also like to train their brain and wits. Thus, it can be said that adults are more like 'value seekers' in De Schutter and Malliet (2014). They view playing digital games as being useful in their lives. This is compared based on the ease in playing the different type of games based on the model developed by Granic et al. (2014). It can be seen that RPGs and Strategy Games are more complicated and need more time to plan than other types of games. Simulation games on the other are designed for players to practice various skills (Vince, 2018) such as flying planes or management. These types of games reflect the desire adults have in learning through various experiences. They are interested to explore complex multi-dimensional perspectives (Knowles, 1980, as cited in Clawson, 1997). Some adults like to play complex games that require them to think.

The dedication and experience in life is another characteristic that adults reflect in the way they pay money in the games. The research findings show that half of the adult gamers are not willing to pay to buy items in the game. The remaining can be divided between those who pay occasionally and those who pay regularly every month. The analysis of the behavior in making payments in the game to buy items reveal that adults plan their spending. They consider the worthiness of the payment made. For instance, they would buy during promotion but must be confident to win or

level up in playing game. Those who make monthly purchases give the reason that they do so for entertainment. The money paid should not be a troublesome amount. The behavior is in line with the consumption and lifestyle of Baby Boomers born between 1946-1964 (Shoaff, 2013, as cited in Rouythanasombat, 2015). This generation tends to seek value in consumption and are careful with spending. Generation X (born between 1965-1979) are prudent in spending and can manage their finances well (Kumlangphaet, 2016).

However, one of the characteristics reflected by adult game playing behavior is concern about the culture of the respondents. The study examined adult Thai gamers, who tend to be close to their family, thus the results may differ in countries with different cultures.

### **6.2.2 Adult Gamers Motivation in Playing Games**

The qualitative and quantitative research findings indicated that the motivation to play games which come from gamer, adult gamers give primary importance to the entertainment motivation. However, the success motivation is an important motivation that come from the game.

The research findings show that adults play games for entertaining as the primary motivator in particular the motivation derived from enjoyment and the desire to reduce stress. The finding harmonized with McQuail, Blumler, and Brown (1972, as cited in McQuail, 2010), which stated that media exposure is a result from entertainment motivation. When considering the social development, middle aged adults dedicate time and energy with their work and family. It is the age where they succeed and grow in their career (Chularut, 2005), which is an important reason leading to stress and boredom in their daily routine. They have to face this situation for a long time as working adults. Buasri (2015) conducted an experiment and found that digital games can help reduce stress. Playing games for entertainment, thus is a way to release and help adults reduce stress.

In terms of motivation from the game, success from playing in particular the desire to move up the level, advancement, receiving gold media, rewards, and wealth in the game are major motivators that keep adults playing the game continuously. This is in line with the study by Henrik Schoenau-Fog (2011) under the topic of

accomplishments. When considering the game Wood et al. (2004) explained that winning and losing in the game has been designed to attract players. This is in line with the characteristics of reward and punishment by King et al. (2010).

The element of success is one of the three main motivators that drive people to play games. This is in line with Yee (2006), who studied the motivation in playing online games. The research findings indicate that most adults gave importance to the motivation regarding the system of the game and finding ways to improve the ability of the characters. The motivation in competing for victory is challenging, which fits the component of success. These two latter concepts are achievements that are in line with McClelland (1988). It is the type of success that needs no reward, rather it is a sense of pride that adult gamers receive from playing the game. In psychological terms the development of adults in the middle-age means the onset of deterioration of bodily functions (Chularut, 2005). They experience a sense of boredom especially when they reach the retirement age. Some of the elderly have a sense of insecurity as a result of the changes due to reduced social roles (Yodpetch et al., 2017). Success in the world of games, thus is compared to a replacement of the pride that has been returned the middle-aged and elderly adults.

### **6.2.3 Engagement of Adults in Digital Games**

The research findings reveal that middle age adults, who are engaged with digital games can be classified in four types. This includes the engagement with the environment and atmosphere in the game, engagement with society of people in the game, engagement with the characters that reflect the identity of the gamer, and engagement with game playing. The study expands upon the research of Bouvier et al. (2014), which explained engagement in three aspects, which are understanding, emotions, and behavior based on the work of Fredricks et al. (2004).

In engagement with the environment and atmosphere in the game, the research findings indicate an interesting aspect. Adults feel familiar with the game that have the environment or character that has previously appeared in books, cartoons, or movies. They might choose to play games that are similar to games they have played before. This is knowledge gained from the experience and reasoning (Spender, 1996). This may be another reason adults decide to play games. This engagement conforms

with Benyon et al. (2005), who explained that engagement related to the impressive experience attracts people to try the game. At the same time beautiful graphics, novelty of characters, as well as light, colors, sounds, and environments in the game that appear realistic help to attract adults to play. This is in line with Malone (1980) in terms of the characteristics that create engagement in fantasy games, which found that the environment structure in the game and curiosity in the game can be enhanced through the addition of light, color, and sound.

Adult gamer engages with game society is found to be made utilizing the communications tools. The communications channels are used to create closeness and understanding with children or those from a different generation. It is also one of the activities used to build the relationship with family and friends. This is in line with the study by Osmanovic and Pecchioni (2016), who studied the relationship between adults and family members through playing video games. It is found that playing video games helps to build the relationship between family members of different generations.

When considering the engagement adults have with themselves or characters that represent them in the game, it is found that adults are not interested in dressing or providing weapons for their avatars. However, they feel a sense of success and pride, when they see that their avatars have progress or are successful in the game. This issue is different from the self-directed engaged-behaviors proposed by Bouvier et al. (2014), which emphasized the importance of clothing and weapons to adorn the avatars. Most adults, however, did not give such importance on the issue. On the contrary they give more importance on the aspect of success of the characters in terms of motivation in playing based on Yee (2006).

Finally, it is found that engagement with playing the game in adult gamers results in positive evaluation. They believe the game has benefits such as brain training, development of perseverance, and management skills. Meanwhile, they are also aware of the negative aspects such as deterioration of the eyesight or losing the ability to work, if too much time is spent playing games. The understanding adults have towards playing games harmonized with the emotional development of adults based on reason (Chularut, 2005). Some of the adults adapt the experience they had in the game to their jobs or their way of life. This is in line with adult learning by

Knowles (1970), which stated that adults learn from past experiences. When they play games, adults can use these experiences to use in their daily life.

#### **6.2.4 Factors Influence Adult's Social Engagement through Gaming**

In the process of building social engagement through digital games, there has been a development in five forms, which are 'Game engagement without social engagement', 'Limited social engagement', 'Closed social engagement', 'Virtual social engagement', and 'Real social engagement through digital game'. Each type of social engagement would have a characteristic of players, which are: 'Solo player', 'Pseudo solo player', 'Local guild player', 'Online guild player', and 'Social player' respectively.

The interesting aspect is the reason that drives adult gamers to develop social engagement in different forms. There are four factors that influence or hinder the development of social engagement, which would be discussed. These are characteristics of middle-aged adults, Communications and social characteristics of the game, common goal of the group, and awareness, feelings, and commonness of emotions in doing joint missions.

##### **6.2.4.1 Characteristics of Middle-aged Adults**

The characteristics of middle-aged adults in particular social interaction is the factor that supports or hinders the decision to join a group or interact with other players. The characteristics of adults differ based on the individualism. Knowles (1970) said that individualism would increase based on age. As a result, learning new things such as playing games would differ based on the experience, lifestyle, learning, and interest of each adult.

The characteristic of adults that hinder joining groups, is the propensity for staying away from society. This might result from individual personality or feelings of responsibility towards family and work. This is in line with Basseches (1984), which explained that adults dedicate their time and effort in their work. They might spend less time with their friends and do not build relationships with new friends. The information in this study indicates that adult gamers usually have work that they are responsible for at least in the middle administrative level. This is the reason they play less games. Thus, it is more difficult for them to make appointment

to play with others and work as a team. They usually select games that can be played alone or games that they can occasionally join online. In addition, it is found that some adults maintain a personal space and are careful in meeting new people. It takes some time for them to get to know one another especially through doing joint missions. This includes giving life power to others in the team. However, they do not like to talk to other gamers in the team that they have not known before. This behavior might become a hindrance to interaction while playing games together.

However, it is found that some of the adults do not spend a lot of time getting to know new gamers. Some are more open to new friendships among those, who play the same game. It conforms to the Activity Theory of Havighurst (1963), who explained that middle-aged adults and the elderly want and are interested in joining activities. This makes the individual feel valued. It is a characteristic that adults use as a factor in supporting the creation of social engagement in game space and beyond.

#### 6.2.4.2 Communications and Social Characteristics of the Game

The characteristic of the game is another important variable that creates social engagement through digital game. Since 2000, computer games have become prevalent and popular, however, the game community has not expanded to the extent seen today. Today there are numerous digital games that encourage the creation of interaction structure of gamers. The research findings indicate that the top most popular games are Candy Crush, Pokémon Go, RoV, Homescapes, and Hay Day. These games are examples of modern games that allow gamers to communicate and play together. Players can like, share, send hearts, add friends, and the game can random players, who do not know each other to play together. The communications could be done through chats and some games enable players to communicate within the system, while playing the game. This is in line with King et al. (2010), who gathered the social characteristic that is evident in the game in the form of social formation/institutional features such as the guild or clan system seen in MMORPGs. There are leader board features, which rank the highest scoring players. In addition, games provide support network features such as the channels of communication on the Internet and provide gaming advice. In addition, the model that compares the characteristics of the social engagement in each type of game. Granic et al. (2014)

explained that each type of game has characteristics that facilitate high social interaction such as MMORPG, Strategy, Shooter (multi), and Social Media Game. The type of games with low interaction such as RPG, Shooter (solo), and Puzzle. Therefore, even easy, simple games help to alleviate stress such as puzzle games. Battle games require strategic planning playing as a team or taking on a role online. This allows many players to play together at the same time. The factors about the characteristics of the game is therefore an important variable that has an impact on social engagement among adult gamers.

#### 6.2.4.3 Common Goal of the Group

Playing games with the common goal of the group of gamers, is one of the factors that leads to the development of engagement among members of the group. Feldman and Arnold (1983) explained that group has to have a common goal or interest. Members in the group must have interaction. The research findings indicate that the group of adult gamers, who prefer to play alone, or single player. The only reason these people play games is to relieve stress, kill time, or for entertainment with no other expectations. They are not motivated to develop relationships with other players. They do not have serious goals in playing games, which require cooperation with other players, who have the same goal. However, the adults, who prefer as a team or group player or have a serious objective in playing the game, need to cooperate with other players, who share the same goal. The competition has to be won to get some reward to level up leading to cooperation or in a way a group operations (Bimber et al., 2012). They play games in order to achieve success, thus although they play the same game, the system needs to facilitate interaction. Yet, if the players do not have common goals in playing the game, the opportunity to develop engagement is also slim.

#### 6.2.4.4 Awareness, Feelings, and Commonness of Emotions in Doing Joint Missions

Gamers coming together to join missions create shared emotions and feelings, which become another factor that leads to social engagement. The research findings indicate that groups of gamers, who cooperate together in order to achieve the game mission, have an emotional connection and feelings of happiness in victory and sadness in defeat. This sense inevitably results in engagement and feelings of

being in the same group in a way creating the sense of belonging, which is in line with Vella et al. (2019), who found that playing games results in feelings of ownership or being part of a group. Hartley (2002) explained that the characteristics of being a group means that members would develop emotional engagement with others. This feeling of emotional engagement would become the significant strength of the group. However, the reverse is also true, games that do not generate the feeling of emotional engagement, would mean that there is less chance of creating social engagement. This is in line with the study by Boonmee and Nedpogaeo (2018), which studied the interaction on social media. The study found that satisfaction of online players would lead to the development of relationships outside of the game. This would lead to the formation of creating new social groups that originate from the game to the real world, which happens from the development of relationships in the game to the outside world. It becomes real friendship in the real-world requiring time for adaptation and development to long-term relationships.

The discussion of the research findings regarding the factors that affect the creation of social engagement in adults through digital game can be surmised in the form of a model. This model demonstrates the factors that affect the creation of social engagement in adults through digital game is presented in Figure 6.1.

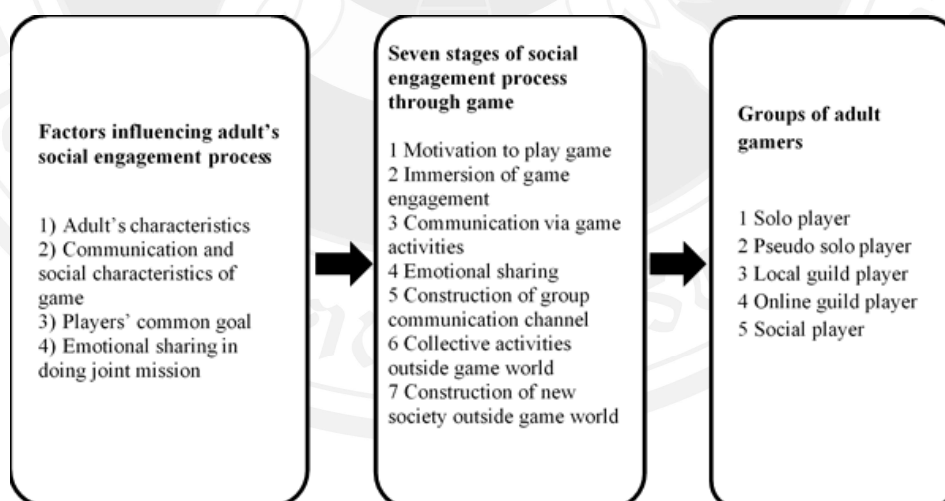


Figure 6.1 Factors Influencing Adult's Process of Social Engagement through Game

### **6.2.5 Communications for Adult's Social Engagement through Gaming**

The research findings indicate that the process of creating social engagement among adults through digital games comprises of three types of communications. These are important tools in stimulating social engagement among players in the game. The three types of communication are: communications through the game, group communications, and communications to create social engagement.

Communications through the game is an important tool for all gamers, regardless of which group they are in. This is because the game space has the characteristics resembling a virtual community. Members in the game community communicate and interact on the network and the computer Rheingold (1993). In this context it includes mobile smartphone and other gaming devices. In every type of social engagement of adults, would communicate through the game in various forms. This depends on the characteristic of the adults and games selected.

The research findings revealed that group communications among adult gamers could be classified as local guild player, online guild player, and social player. However, this is not found among solo and pseudo solo players, which stands to reason given the group characteristics. Hartley (2002) explained that group characteristics including interaction among group members, awareness of group membership, group criteria, members' role, emotional engagement, and common goals of group members. It is found that the two group of adults, who are solo and pseudo solo players, do not fit the criteria of being a group. This is because there is no interaction in the form of groups with other players. Thus, it can be assumed that there is no communications, while playing the game.

The issue that needs to be considered in group communications is being an "online group" or "online community". The analysis could be made in terms of being an "online community" based on Preece (2000, as cited in Kindsmüller et al., 2009), which found that local guild player, online guild player, and social player exhibit qualities that are in line with online community. It comprises of 4 elements, which are social interaction, common goal or common interest, guidelines for membership, and computer system that supports member communications.

At the same time communications for social engagement is found in every type of social engagement. However, there are different details in the communications.

In the group of those who are engaged with the game without social engagement. There are communications about the game. There is access to information about the game through various communication channels and from close acquaintances, without interaction with other players. This is in line with the explanation made by Johnston and Lane (2017) in terms of advice in the form of one-way communications. This is because the form of interaction through the game does not provide the opportunity for response. While adults, who have limited social engagement, communicate through the game system during joint missions with other gamers. This is considered providing advice and two-way communications. In terms of interaction through playing games, it provides an opportunity for response and sending as well as receiving hearts.

For those, who have closed social engagement, the communications creating social engagement is more complex than the previous 2 groups. It is found that gamers in group or local guild players would form group with their close acquaintances to exchange experiences in playing the game and forming teams to compete with others. The communications found is comparison in nature to “conversation”. This is because the interaction is done with the goal of learning together (Ballantyne, 2004). They would invite friends or other players to join missions through communications in form of advice and two-way communications as stated by Johnston & Lane (2017).

In terms of virtual social engagement or online guild player, the communication is similar to the closed social engagement group. It is found that there are “conversations” and advice in the form of two-way communications. They form teams with players that they have not known before. The communications interaction is done to exchange experience and advice to prepare the competition strategy. This is in line with Tsoukas (2009), which found that interaction from conversations and exchanges are the mechanism in creating new knowledge. In this situation it is the exchange of experiences in the game.

The last group is the real social engagement. The communications seen in this group is in the form of “conversations”. It is the main form of communications that has been developed from the world of the game to the real world. The interaction among group members is done equally. This means that everyone in group has the

opportunity to express their opinions freely. This is in line with the conversation characteristic of “mutuality” by Kent and Taylor (2002). It is the willingness to share information without the desire to control the communications.

The three types of communications are important tools in creating social engagement in adults through digital game. The goal is to stimulate social engagement among adults stemming from playing games. The research findings have been surmised in a table comparing the communications found in each group and social engagement type through digital games among adults. The findings are presented in Table 6.1.

Table 6.1 Comparison of Adult Gamers’ Communications Found in Social Engagement through Gaming

Types of Adult Gamers	Communication through Game	Group Communication	Communication for Social Engagement
<b>Game engagement without social engagement (Solo player)</b>	- Communication with game tool	Group characteristic not found	Advocacy (One-way communication)
<b>Limited social engagement (Pseudo solo player)</b>	- Communication through game system		
<b>Limited social engagement (Pseudo solo player)</b>	- Communication with game tool	Group characteristic not found	Advocacy (Two-way communication)
<b>Closed social engagement (Local guild player)</b>	- Communication through game system		
<b>Closed social engagement (Local guild player)</b>	- Communication with game tool	- Group characteristics	-Advocacy (Two-way communication)
<b>Closed social engagement (Local guild player)</b>	- Communication through game system	found.	- Dialogue
<b>Closed social engagement (Local guild player)</b>	- Other communication channels	-The group contains only closed acquaintances	
<b>Virtual social engagement type (Online guild player)</b>	- Communication with game tool	- Group characteristics found	- Advocacy (Two-way communication)
<b>Virtual social engagement type (Online guild player)</b>	- Communication through game system	- The group contains unknown players	- Dialogue

Types of Adult Gamers	Communication through Game	Group Communication	Communication for Social Engagement
<b>Real social engagement type (Social player)</b>	- Other communication channels	teaming up only for game mission purpose.	Dialogue
	- Communication with game tool	- Group characteristic found	
	- Communication through game system	- The group developed from	
	- Other communication channels	unknown members teaming up for game mission to getting to know each other in real life.	

### 6.3 Summarization of Adult's Gamer Social Engagement through Digital Game

The research can be summarized in the Model of Adult's Social Engagement through Digital Game displayed in figure 6.2

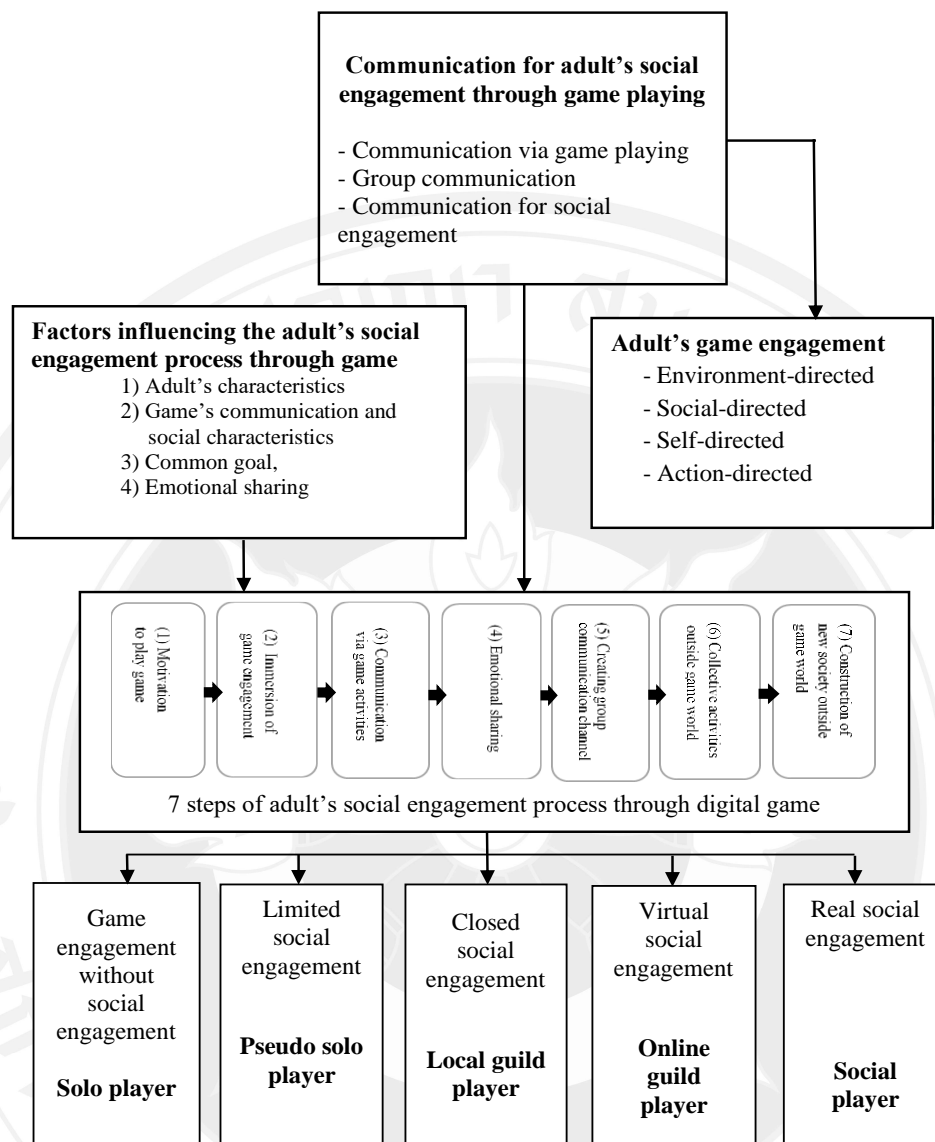


Figure 6.2 Model of Adult's Social Engagement through Digital Game

## 6.4 Research Recommendations

Game technology is one form of modern communications in the digital era that is greatly popular among the youths. This research found that games are not a strange phenomenon for middle-aged adults. On the contrary games are something familiar for adults because they are aware and have had previous experience during their youth, although some do not have prior experience. Games among middle-aged

adults has become a topic of interest among researchers resulting from the growth of the game industry, potential, purchasing power among adults, effort in seeking benefits from digital games to develop the potential of the elderly, and the problem of the aging society.

This study examines the creation of social engagement in adults through digital games. The study examines 5 topics, which are digital game playing behavior of adults, motivation adults have in playing games, engagement adults have with games, format of social relationships adults have through digital games, and the communications to create social relationships among adults. The target are middle-aged adults and the elderly. The research findings could be beneficial to both groups at the level of government policy and social group as discussed in the following section.

#### **6.4.1 Government Policy Recommendations**

In terms of benefits to the government policies, the problem of the aging society is considered a national issue in Thailand. The preparation for the elderly to become a majority of the national populace and live fruitfully is a challenge. This study regarding the creation of social engagement in adults through digital games could be used for development policies to enhance the potential of the elderly on the basis of understanding as explained in the following section.

##### **1) Mental and physical health development using digital games**

The physical development when humans reach the middle age would lead to deterioration of the nervous system. The changes would be gradual and when they reach the elderly age, the body would deteriorate clearly in every way. The mental condition might also be subject to social pressures due to the change. The modern society, which requires children to work out of the home leaving the elderly to be alone to care for themselves. Digital games help to reduce loneliness and entertainment. In addition, it is found in various research both local and international, that there are benefits in recuperating the physical, senses of touch, and brain functions. Today there are games that help to promote physical movements in the market such as Nintendo V Sport, Pokémon Go, or Just Dance. In addition, there are games that require strategic planning to win such as ROV and Homescapes.

Government agencies should take care of the health of the elderly. They can use digital games as tools in recuperating the physical health and train thinking and memory to slow down the deterioration of the nerves and brain cells as well as the mental condition of the elderly. Factors that need to be considered include the design or selection of games that fit the personality and suit the needs of the elderly.

The research enables those who are in charge of the care of the elderly to better understand the game playing behavior of adults and the elderly. This is particularly true in games preferred by adults, motivation to play, and motivation from the games. In addition, other factors that result in engagement driving adults to play games. This is evident in the research topic about social engagement with games. The knowledge gained from these research findings enable the development of guidelines in creating and selecting games to suit the character of the elderly. This would lead to the successful development of the body and mind of the elderly.

## 2) Social policy

The happy adaptation to the modern society of middle-aged and elderly adults is a challenge in this digital age. It is the combination of the aging society issue being faced by various countries. The research findings found that the development of group in the various forms starting from playing games. Thus, the responsible agencies should development social engagement strategies adapted from this study. The findings could be used to develop policies as explained in the following section.

The nature of the middle-aged adults, who are serious about their work and family life, might result in withdrawal from society, friends, and even people close to them. In addition, it has an impact on them entering the elderly age. When the social status changes, it creates uncertainty resulting in withdrawal from society. Government agencies should make use of this study on the topic of social engagement of adults through digital games. They can understand the characteristics of social interaction of adults both in the space of the game and outside as well as the process of creating social engagement. In addition, it promotes the understanding of solo players that leads to the adaptation enabling joining activities with others. The research findings could be used in the development of social skills for the elderly by using digital games as a tool. This is a means to create changes in the behavior in a fun way to reduce pressure.

### 3) Communications Policy

At the same time the research findings indicate that some of the adult gamers use games as a communications tool to connect with people of different generations. The government agency can use the findings to communicate information through games in order to reach people of different generations, who like playing games. In addition, games can be used to reduce the gap between the new and the old generations. It is the stage where people of different generations play with those from other communities. It could also be another way to promote harmony and understanding between people in the community.

#### **6.4.2 Recommendations for Business**

Middle-aged adults are considered as consumers, who have high purchasing power for businesses. The findings of this study could be used for benefits in many ways.

##### 1) Marketing and Sales

Today adult and elderly gamers have increased in number. There is still a gap in the development of this consumer segment. This research findings enables businesses to better understand the game playing behavior of adults. It is particularly true based on the type of game that attracts adults and the elderly. In addition, the spending behavior to buy items in the game. The understanding of the characteristics of different player groups would help businesses to develop successful business strategies. For instance, the research findings in regards to adults and social engagement with other players revealed that games are like communication tools that foster understanding between people of different generations. Therefore, the marketing strategy could be done as a game buffet that consists of games that adults like to play and are popular among youths. This type of marketing strategy would help to expand the customer base.

##### 2) Game Development

The research findings in terms of engagement to the game explains the understanding and feelings that adults with games. This includes environment in the game, light and sound, characters, and game play. These factors lead to the

engagement adults have with the game. These can be used to develop games that are more attractive to adults.

In terms of social engagement adults have with digital games, understanding the characteristics of adult gamers enables them to be classified into various groups. The process of adaptation and joining society of adult gamers, is also a means to develop games that suit the personality and needs of adult gamers in each group.

The research findings reveal the use of game as a means to communicate with people from different generations. Therefore, game developers can use these findings to create or develop games that have a variety of characters and game play that is conducive to members of the different generations to foster cooperation in accomplishing the game mission. This is a way to expand the customer base such as family and friends.

### 3) Adult labor potential development

The research findings indicate that games have benefits beyond entertainment and stress reduction. Adult gamers admit that some games actually help in the development of skills such as management. There is the need to use the brain in planning strategies for victory. Therefore, the game can be used as a tool to develop the potential of employees. As a result, businesses can have the plan to use games to develop the potential of their adult (or young) employees by improving certain skills. This can be done in the form of simulations, which result in effective learning that is not stressful.

#### **6.4.3 Family and Community Recommendations**

The research findings indicate that games could provide benefits at the group and family level. It leads to better understanding adult and elderly game playing behavior in each group. The community management can use the research findings as a means to develop the relationship among those in the community through the transfer of digital technology knowledge through playing games. The elderly can learn in an entertaining way. Family members can also use games to strengthen the relationship between those of different generations. Appropriate games could be selected to suit adults. It can also be used as a means to alleviate loneliness among the

elderly family members, who might have to spend time alone while the young go out and work.

#### **6.4.4 Recommendations for Future Research**

Research on the topic of games that have the goal in studying middle-age adult and the elderly are still limited. Therefore, there is still space to conduct studied in this area. Topics include the design, system development, behavior of gamers, changes in society, and business and marketing.

The study titled “Adult’s Social Engagement through Digital Game” aims to focus on the social relations among gamers. This can be further expanded to study and develop new knowledge structures in the future. Topics that can be further explored include the trend in the long-term sustainable relationships of the social groups that is formed from playing games, comparison of behavior, and engagement with games among those of different generations or those of the same age but compare between genders.

These studies that might be conducted in the future are all beneficial for the academic and serve as the knowledge base for developing government policies about human and social development as well as business success.

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## **APPENDIX**

### **Popular Digital Games Among Thai Middle-Aged Adults**

#### **Candy Crush**

Candy Crush Saga is one of the most popular free-to-play video games among people of all age groups due to the game's simple but engaging gameplay. The game, developed by King Digital Entertainment, was initially released on Facebook before being ported over to the smart phone. The game was the winner of the 'People's Choice Awards for Favorite Mobile Game' in 2016.

Presently there are 4 games in the Candy Crush family: Candy Crush Saga, Candy Crush Soda Saga, Candy Crush Jelly Saga, and Candy Crush friends Saga. The 4 games use the same rules. The player switches, moves, and matches 3 or more candies in a row, using boosters in order to overcome the obstacles in the puzzle adventure to progress to the next level.

**Source:** <https://play.google.com/store/apps/details?id=com.king.candycrushsaga&hl=th&gl=US>

#### **Pokémon Go**

Pokémon Go is a game that uses smart phone's GPS and clock to detect the player's location and position and generate pokémon to catch. The game uses 'Augmented Reality' to integrate aspects of the real world into the game. The idea is to encourage people to travel around the real world to catch Pokémon in the game.

Pokémon (short for pocket monster) is a franchise owned by Nintendo and began life in the mid 90's as a game for the Game Boy. The game centered on fictional characters known as Pokémon which humans, known as Pokémon Trainers, catch and train to battle each other. The Japanese franchise became well known for its

unique graphics and cute characters. The game grew into a massively successful franchise which spanned TV, trading cards, comics and toys. 20 years later Pokémon has made a big come back in the form of a location-based smartphone game.

As users walk around the real world, Pokémon characters appear on the game map. When users come within a close enough range the Pokémon will appear on the device screen and users throw Poké Balls at them to capture them. The aim is to collect as many different characters as possible. The map is a stylized version of Google maps that replaces real street names and landmarks with Pokémon specific buildings.

Another feature of the game are Poké Stops which are real life locations where users can usually collect free Poké Balls (used to catch Pokémon). Players can also find Pokémon eggs that hatch into Pokémon and can be added to a user's collection.

**Source:** <https://www.vox.com/2016/7/11/12129162/pokemon-go-android-ios-game>

### **Realm of Valor (RoV)**

Arena of Valor is multiplayer online battle arena game designed for mobile device. Players will be formed into two teams- RED or BLUE- and must destroy the base of the opposing team to win. In order to destroy enemy's base, players have to control the hero they selected, fight against the opponents, and take down all the Defense Towers in at least one of the three paths. Classic 5V5 mode is the most popular one in Arena of Valor, through which you can demonstrate your skill as well discuss strategies with your team.

Before the battle start, player needs to select a hero to fight for the team. In Arena of Valor, there are various and distinctive heroes to choose, categorized into classes. For example, Tanks are defensive and protect teammates, while Assassins focus on speed and damage. The Marksman or Mage are also damage-focused classes, but use ranged attacks. Less combat-focused classes like Peura focuses on supporting the team thorough buffs and healing.

Battle begins after the hero is selected. Player and teammates will be spawned in their base, along with a continuous supply of minions. The Towers on each lane are

the structures protecting the base, they will land a massive damage on enemies who entered the attacking range. Taking down the towers one by one is the key to victory.

**Source:** [https://www.arenaofvalor.com/webplat/info/news\\_version3/26190/33375/33740/33743/m19427/201801/680175.shtml](https://www.arenaofvalor.com/webplat/info/news_version3/26190/33375/33740/33743/m19427/201801/680175.shtml)

## **Homescapes**

Homescapes is a free-to-play video game released by Playrix in September 2017 for the mobile platform. Homescapes is a Gardenscapes spin-off and shares the same traditional match-3 mechanics with a storyline. The game's protagonist, Austin the Butler, is also the main character of Gardenscapes.

Homescapes' core gameplay loop revolves around swapping two adjacent elements to make a chain of at least three elements. The game also provides helpful power-ups that can be used by double-tapping them or switching with an element on the board.

To complete levels, the player must fulfill all the objectives in each level (e.g. collect a certain amount of an element, place the furniture, clean the floor, etc.). Completing a level provides stars for the player to use for improving the house to progress the story and unlock more of the game.

**Source:** <https://en.wikipedia.org/wiki/Homescapes>

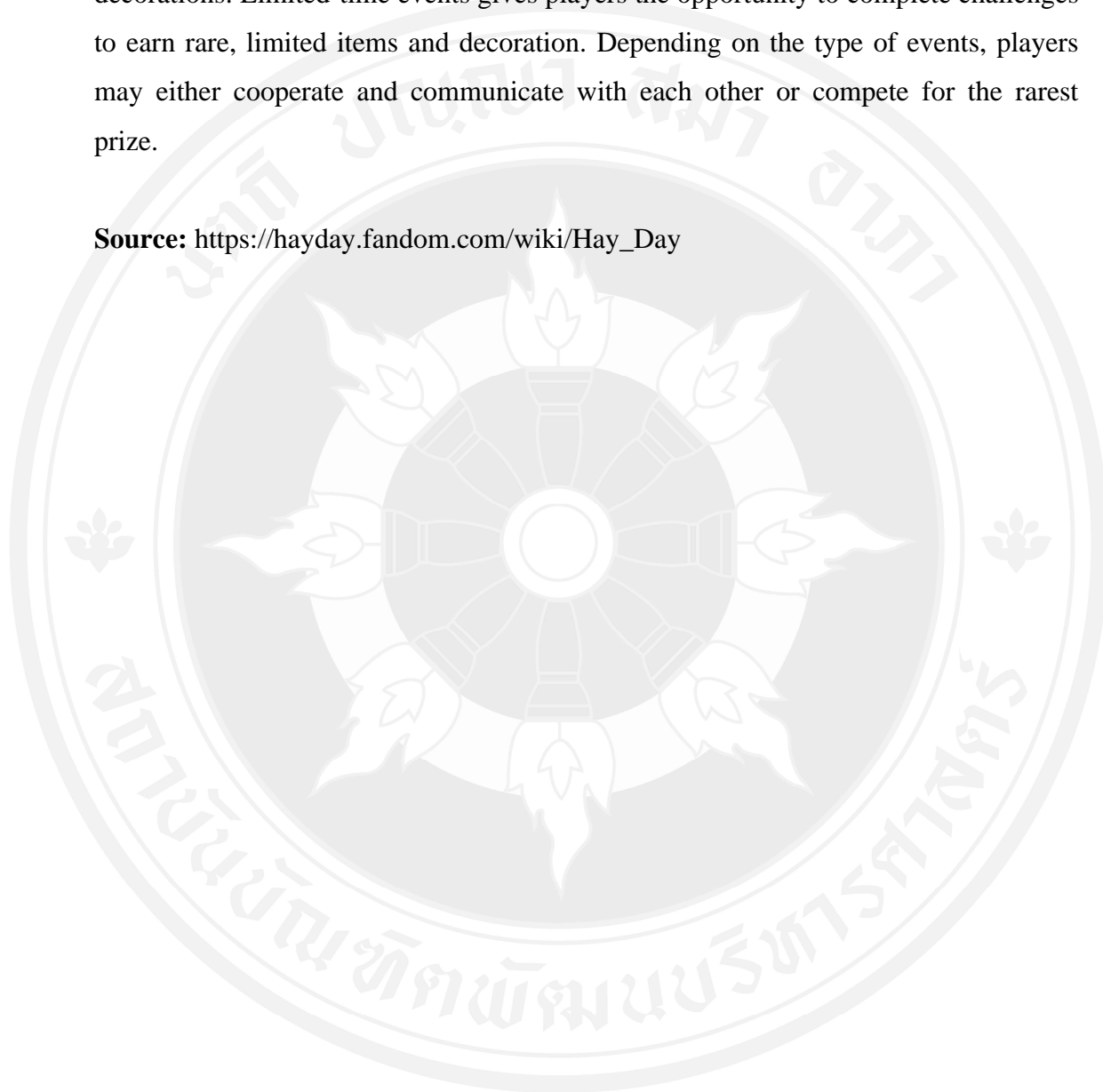
## **Hay Day**

Hay Day is a free-to-play farming simulator developed by Supercell, released on June 21, 2012 on iOS and on November 20, 2013 on Android. Hay Day's core gameplay loop revolves around performing activities to develop a farm, such as growing crops and greenery, creating products for sale and raising animals. Players can trade goods with visitors to the farm, ranging from non-playable characters to other players, and earn currency and experience points to progress in the game.

More items, crops, features, buildings are unlocked by raising the player's Level. At certain level thresholds, the player also gains access to the fishing lake and the town.

Players can customize their farm to their liking through the purchase of decorations. Limited-time events gives players the opportunity to complete challenges to earn rare, limited items and decoration. Depending on the type of events, players may either cooperate and communicate with each other or compete for the rarest prize.

**Source:** [https://hayday.fandom.com/wiki/Hay\\_Day](https://hayday.fandom.com/wiki/Hay_Day)



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