CO-CREATING VALUE IN VIDEO GAMES: THE IMPACT OF GENDER IDENTITY

AND MOTIVATIONS ON VIDEO GAME ENGAGEMENT AND

PURCHASE INTENTIONS

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When games were first developed for in-home use, they were primarily targeted almost exclusively at children and males. However, today's marketplace manifests a more diverse population plays Internet-enabled games that can be played virtually anywhere. The average gamer is now 30 years old. Many gamers, obviously, are much older. Yet more strikingly, and more germane to this study's purpose, 47% of the U.S. gamer population is female, as compared to 40% in 2010. Despite these trends the gaming industry remains a male-dominated culture.

The marketer's job is to facilitate game engagement and to motivate gamers to play. The notion of "engagement" is not new in business. The term was developed in the last decade. Many studies were devoted to understand, explain, and define the term. It suggests that within interactive, dynamic business environments, consumer engagement (CE) represents a strategic position that companies can use to enhance their sales growth, competitive advantage, and profitability. Moreover, there are three levels of engagement in any experiential consumption (i.e., playing video game): presence, flow, and psychological absorption. The findings of this study affirm that consumer engagement, including presence, flow and psychological absorption are explanatory factors that impact gamer's purchase intentions.

Our results show that consumers experience different mental engagement in an interactive environment (i.e., playing video games) compared to passive environments (i.e., visiting a website). These findings change our understanding of consumers' engagement and flow state. We also found that male and female gamers experience different engagement level. However, we did not find a significant result that masculinity and femininity traits impact gamers' engagement or intention.

We argue that macroeconomic factors results in sales fluctuation may have resulted in reject in this hypothesis. Thus, marketers shed a light into the consumer's interactive environment and flow states in that environments.

Consumers not only determine the value in using a product as Vargo and Lusch suggested, but they also create that value. Also, consumer experience is an ongoing process that does not have a specific point to start, making the value creation a temporally accumulative process that includes past, present, and future experience. Therefore, the value created by consumers is not created while physically interacting with a device to play, but it may include imagined and indirect interaction with the product. Therefore, consumers (i.e., gamers) need to maintain a balance between presence and psychological absorption (i.e., flow) to get the best experience in play video gaming. Empirical evidence suggest that consumers' flow state engagement is the most important variable in determining their ensuing purchase intention for video games, regardless of game genre.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

1.1   The Research Initiation

The video game (hereafter, games) industry is booming, surpassing the movie industry in terms of both annual sales and global revenues in the entertainment category. For example, Call of Duty: Modern Warfare 3 earned $1 billion in sales just 16 days from its release (Snider, 2011). Also, combined with sales for mobile devices (e.g., tablet and smartphones) in the year 2012, consumers spent an estimated $67 billion for console and portable hardware, and software sales (Prugsamatz, Lowe, and Alpert, 2010). These revenues are about 500% greater than global music revenues ($16.5 billion in 2011). Games are among the fastest and most exciting category of mass media. While academic research on game content and users has increased significantly over the past quarter-century, there are many research gaps. Far more research has focused on other entertainment categories, such as consumers' attitudes toward and patronage of cinema, special events (i.e., music concerts,) and television (Marchand and Hennig-Thurau, 2013). Thus, marketing academician contributions lags far behind the actual video game industry practices.

The first generations of games were not directly marketed to either gender. The graphic design and the development of characters were at early stages. For example, how were they to make Pacman appeal to one sex? But when the graphics and the characters became more advanced in games, the more valuable they become to marketers. Once we have recognizable characters in games, we can market them more specifically. Also, players became more and more engaged in playing games due to an increase in graphic design.

When games were first developed for in-home use, they were primarily targeted almost exclusively at children and males. However, now, a more diverse population plays internet-enabled

games that can be played virtually anywhere. The average gamer, for example, is now 30 years old. Many gamers, obviously, are much older. Yet more strikingly, and more germane to this study's purpose, 47% of the U.S. gamer population is female, as compared to 40% in 2010 (ESA, 2011). Despite these trends, however, the gaming industry remains a male-dominated culture.

The gaming "product" continues to be dominated by its portrayal of male characters engaged in "manly" activities. The gaming industry continues primarily to target males in their twenties (Jenson and De Castell, 2010). Not surprisingly, the video game industry has been subjected to rightful misogynistic criticism insofar as it continues to view women as passive gamers and treat them primarily as sexual objects inside games (Jenson, 2005).

Marketers' job is to facilitate game engagement and to motivate gamers to play. The notion of "engagement" is not new in business. The term was developed in the last decade (Brodie, Hollebeek, Juric, and Ilic, 2011). Many studies were devoted to understanding, explaining, and defining the term. It suggests that within an interactive, dynamic business environment, consumer engagement (CE) represent a strategic position that companies can use to enhance their sales growth (Neff, 2007), competitive advantage (Sedley, 2008), and profitability (Voyles, 2007). Moreover, there are three levels of engagement in any experiential consumption (e.g., playing video games): presence, flow, and psychological absorption (Brockmyer et al. 2009). Gamer progression from low to high engagement is consistent with a progression from a simple presence to high psychological absorption. In this context, consumers (e.g., gamers) have to be engaged at some level to co-create value for gamers.

The purpose of this study is twofold. First is to conduct a systematic review of gender identity, gamers' motivation, and consumer engagement studies. Also, the author identifies important characteristics, antecedents, and consequences of consumer engagement. The author

organizes the review based on Palan (2001) and Hollebeek et al. (2014). Its second purpose is to empirically examine gamer gender identity and motivation on video game engagement and purchase intention. For example, the author investigate how the masculine side of female (and conversely, the feminine side of male) gamers is impacting female and male gamers perceptions of and motivations toward playing video games, as well as how long they play them. The results and insights that emerge should help video game marketers as they develop, target and position games toward contemporary male and female gamers.

Even though researchers have explored the differences between male and female gamers in game engagement and purchase intention, the psychological gender remains unexplained (e.g., Jansz, Avis, and Vosmeer, 2010; Lucas and Sherry, 2004; Olson, 2010). This article provides this explanation. The author argues that gender identity can explain best the gamer engagement and purchase intention.

This research also investigates how gamers' motivation can predict their game engagement and purchase intention. Brodie et al. (2011) argue that customer engagement co-creates value in an online environment. They examined the use of engagement in social science, and marketing literature and suggested that customer engagement creates the customer outcomes (interactive) for experience consumption. Huang, Kim, and Kim (2013) found that game engagement impact consumption behavior. Also, gamer motivation to play varies from escaping the daily life to advancing the gamers' life. For instance, Yee (2006) has identified three dimensions for gamer motivation to play games: immersion, social interaction, and achievement. Gamer motivation leads to a different level of engagement (i.e., presence, flow, and psychological absorption). Lin (2010) argues that men and women have different patterns of enjoyment with different games. Thus, gamer motivation predicts gamer engagement and purchase intentions.

1.2   Background to the Problem

The fact that a) gamers are not treating younger or older women as viable targets for their products nor b) portraying them equitably in games themselves remain problems. Each has been and will continue to be, the subject of ample research attention. However, the larger problem, as addressed below, is that gamers lack actionable theoretical insight into the role of male and female gender differences; (i.e., males having feminine qualities and females have male qualities), and how these differences may be impacting various male and female gamer engagement and purchase intention. These facts provide valuable insights into the underlying gender differences that exist in consumer propensity to engage in playing games, as well as the consumers' purchase intention of games.

Game developers rely heavily on gender, and they design and target games to a male audience in their twenties. Also, games depend on gender perception. For example, the Tomb Raider developers have stated that they wanted to make Lara Croft, a female character in the game, weaker in order to become more relatable (Dewitt, 2013). Furthermore, the presence of female characters without male characters present in the game is negatively related to sales (Near, 2013). Thus, both practitioners and researchers have realized that females do play, but how and how they play is still in question.

Gamers play games for different motivations (Malone, 1981; Sherry, Lucas, Greenberg, and Lachlan, 2006; Yee, 2006). Yee (2006) argues that gamers play for three motivations: immersion, social interaction and achievement. Moreover, Lacus and Sherry (2003) identified six motivations to play games: competition, challenge, social interaction, arousal, diversion, and fantasy. However, researchers did not examine the impact of gamer motivation on game

4

engagement and purchase intention. Thus, the author argues that gamer motivations co-create value for gamers.

Consumer engagement not only can identify the consumer's level of engagement, but also can predict consumer's future purchases (Hollebeek et al., 2014). Van Deoorn et al. (2010) addresses "consumer engagement," which results from motivational drivers. The authors developed a theoretical model linking customer engagement to customers, firms, and context antecedents and consequences. The customer antecedents include consumer identity and motivations. Also, the contextual antecedents include social factors that increase customer enjoyment. In our study, the author is looking at the consumer identity and motivation to play games.

1.3 Theoretical Foundations

1.3.1 Flow Theory

Flow state refers to the mental state in which a person is fully engaged and involved in a psychological feeling (Czikszentmihalyi, 1990). The optimal experience while playing games is illustrated as a flow state (Sherry, 2004). For example, if the gamers enter the flow state, he or she will engage in playing the game with no external distraction. The people's flow as a result of playing video games is reflected in a variety of daily activities: playing sports, gaming, dancing, shopping, and working on a project (Choi, Kim, and Kim, 2000). This research examines the flow state of consumers, resulting from their engagement in a game. The author used the flow theory as a theoretical framework to examine the level of gamers engagement (D. Hoffman and Novak, 2009).

The term "engagement" was developed in the last decade (Brodie, Hollebeek, et al., 2011). It suggests that within interactive and dynamic business environment, consumer engagement (CE)

represent a strategic position that companies can use to enhance their sales growth (Neff, 2007), competitive advantage (Sedley, 2008), and profitability (Voyles, 2007).

There are three levels of engagement in any experiential consumption (e.g., playing video game): presence, flow, and psychological absorption (Brockmyer et al. 2009). The progression of gamers from low to high engagement is consistent with a progression from a simple presence to high psychological absorption. To illustrate the level of engagement, consider a person standing on the side of a river touching the water. He will feel be present at that experience. If he takes a boat to the river, he will experience flow at that moment and reach the second level of engagement. Sometimes that person is immersed at the moment, not feeling the surroundings while sailing on a boat. This experience is the highest level of engagement a person can experience. In our context, consumers (e.g., gamers) co-create value by engaging in games.

1.3.2   Flow Theory and Hedonic Consumption

Flow theory explains the pleasure found in immersion in everyday activity a (Sherry, 2004). The theory could describe gamer behavior while entertaining themselves using console games such as PlayStation and other handheld devices. Csikszentmihalyi & LeFevre (1989) suggested that when a person reaches the flow state, he or she will be more engaged, active, happy, and satisfied. Thus, gamers will enjoy games and be engaged in it.

Furthermore, flow state is also related to a person's intrinsic motivation, triggering the need for achievement and the need for socialization. For example, Przybylski et al. (2010) found that video games are intrinsically motivating. Gamers who reach a high level of engagement in a game environment also gets the highest value from the play experience. Thus, flow state is one of the main reasons people play video games (Murphy, 2011).

Researchers have struggled to differentiate between hedonic and utilitarian pursuits. Pleasure can result from hedonic consumption and from the level of fulfillment outcomes that can be captured from utilitarian activities (Alba and Williams, 2012). Thus, there is no activity that is purely either hedonic or utilitarian. It depends upon the context. Consider a person who plays a first-shooter game (i.e., American Army) as an example. He or she will enjoy the game while playing, which is considered as a hedonic activity. On the other hand, if the gamer is getting training in pursuit of employment in the United States Army, the activity is considered utilitarian. The United States Army uses the "American Army" game to train soldiers (Stahl, 2011). Thus, games are a high hedonic activity, but could also might have some utilitarian value for the gamers as well (Voss, Spangenberg, and Grohmann, 2003).

Many scholars have studied hedonic consumption in video gaming, which is characterized by deep immersion in an activity (Choi et al., 2000; T.-J. Chou and Ting, 2003; Shin, 2006). However, few authors have used the flow theory in the examination of video gaming. For example, Seger and Potts (2012) found that gamer flow state predicts the player time played. The authors also found that individual differences affect the gamers flow experience and that male gamers reach flow state more often than female gamers. Moreover, Moore, Mazvancheryl, and Rego (1996) argue in their qualitative research that gamers seek flow state. Flow also influences the behavioral intention. For example, flow can influence online purchase intention (Luna, Peracchio, and de Juan, 2002, 2003), revisit intent (Koufaris, 2002; Luna et al., 2002, 2003), and intention to play an online game (Hsu and Lu, 2004). Therefore, being in a flow state leads to purchase intention.

1.3.3   Flow State and Gender

Czikszentmihalyi (1990) argues that flow state occurs at the moment, and the individual's level is the individual level phenomenon. Also, individual differences (i.e., gender identity) have the potential to determine the flow state (Finneran and Zhang, 2005). For example, the people differences such as personal goals, significantly influence flow state in the virtual world (Shin, 2006). However, the author did not find a significant difference between males and females in flow level, and calls for future studies to address the influence of individual differences in video game engagement and purchase intention. Although their individual differences are related to individual demographics, this study investigates gender difference with respect to the flow state and engagement levels. Specifically, we looked at presence, flow and psychological absorption.

1.3.4   Flow and Use and Gratification Theory

Various researchers have made an effort to examine the flow theory in broad online context, such as a website (e.g., Hoffman and Novak (1996), Novak, Hoffman, and Yung (2000) and Pace (2004)). For example, flow theory has been examined during online games (Hsu and Lu, 2004) and in online chat rooms (Shoham, 2004). Many researchers are interested in studying flow beyond traditional websites and toward the new emerging areas in online human-computer interaction. For instance, Takatalo, Nyman, & Laaksonen (2008) looked at a flow in a virtual environment.

Virtual world can be a video game where gamers are presence inside the game. Games like Second Life (http://secondlife.com) have imitated real life. Hoffman and Novak (2009) argue that flow state occurs more often in a virtual world than in visiting a website. They suggest that video games contribute to the flow conceptual model (Hoffman and Novak 1996). They argue that video game (including virtual worlds) are qualitatively different a from Web browser-based

environment. The authors found that flow state is infrequently happening during web browsing, and they expect gamers to experience flow state more frequently while playing video games (e.g., virtual world).

Video games have a social context (e.g., Lucas and Sherry 2006; Yee 2006) that is not incorporated in the Hoffman and Novak flow model (1996). Compared to a web-based store where other people are missing, video games (e.g., League of Legends) can host up to 3 million users (i.e., gamers) at any given time (Evagelho, 2012). These gamers interact with each other and socialize, while users in a website cannot. Moreover, Yee (2006) has identified three motivations to play a video game: immersion, social interaction and achievement. The immersion dimension refers to engaging in the game. The social dimension refers to helping others, and achievement motivation refers to gaining power and status. Also, Sherry and Lucas (2003) added more dimensions to explain the gamers motivations to play video games; competition: to be the best player of the game; challenge: to push oneself to beat the game or get to the next highest level; social interaction: to play as a social experience with friends; diversion: to pass time or to alleviate boredom; fantasy: to do things that you cannot do in real life such as driving a flying car or being a professional soccer player; and arousal: to play because the game is exciting. The flow theory can be further expanded by adding gamers' motivation (e.g., competition, challenge, diversion, social interaction, arousal, and fantasy). Thus, video games are   the ideal prototype to examine flow state (Hoffman and Novak 2009).

1.3.5   Uses and Gratification Theory

Table 1 summarizes seminal works in uses and gratifications theory (UGT) across different media that explain the people motivation to engage in different media. UGT identified the gamers' motivations to play games. Schramm, Lyle and Parker (1961) argue that in order to understand the

media (e.g., video game) impact and effect on people, we have first to understand the people's motivations to use that media. Greenberg (1974) was the first author that used the theory to analyze television viewing and attitude. Greenberg identified and examined children's motivations to watch television. The author developed a scale to measure and analyze television behavior, and television attitude correlates for British children. The author found that age is a predictor of viewing. In general, young viewers watched television more often and identified more strongly with each of the television motivations. The author argues that arousal viewing was a strong predictor for television viewing. The author also found a positive correlation between strength of identification with most viewing motivations and amount of television viewing.

Until today, there have been few attempts to develop sets of games motivation. For example, Selnow (1984) investigated arcade motivation for 244 10 to14 year old children. The author investigated arcade games because most games in the early 1980s were arcade games. The author investigated the relationship between TV viewing and video game playing. The results show a complementary relationship between watching TV and playing game. The study suggests that game qualities provide an opportunity for gamers to escape life and have electronic friendships. Selnow used Greenberg's (1974) scale and added few dimensions that are specifics to games. The study found five arcade game motivations: (a) gameplay is preferable to human companions, (b) gameplay teaches about people, (c) gameplay provides companionship, (d) gameplay provides activities/action, and (e) gameplay provides solitude/escape (Selnow, 1984).

Wigand, Borstelmann, & Boster (1985) published a paper focusing on arcade use. The authors surveyed 447 high school and colleges students motivations to play arcade games. They found that the motivations for using arcade games were excitement, satisfaction of doing well, and tension reduction. All these factors were significantly related to the amount of gameplay.

In 1990s, Myers (1990) found that there are four motivations of playing games: fantasy, curiosity, challenge, and interactivity. All these motivations were significantly related to the amount of time the games was played. Phillips, Rolls, Rouse, and Griffiths (1995) used single-item measures of gamer motivations for 806 students ranging from 11 to16 years old. The motivations given to play were "to pass the time," "to avoid doing other things," "to cheer oneself up," "enjoyment," and "other reasons." Children were playing between half an hour and one hour per day. The study also found that male gamers play for longer time and report feeling better after they play than female gamers. Moreover, Griffith (1991) focused on playing fruit machine because it is the most documented form of gambling played by adolescents. Game addiction added an additional motivation to play games: a) arousal, b) social rewards, c) skill of the game, d) displacement, and e) stress reduction.

In the 2000s, Sherry and Lucas (2003) developed a comprehensive player-based video game uses and gratifications scale, using a methodology similar to the one used to develop Greenberg's (1974) original television uses and gratifications scale. The scale identified gamers' motives that are specifically non-arcade. The authors used focus group and interviews to identify six principal motivations for play:

- Competition: to be the best player of the game

- Challenge: to push oneself to beat the game or get to the next highest level

- Social interaction: to play as a social experience with friends

- Diversion: to pass the time or to alleviate boredom

- Fantasy: to do things that you cannot do in real life such as driving flying car or be a professional soccer player

- Arousal: to play because the game is exciting

In the following year, Lucas and Sherry (2004) used their scale in playing games. The authors surveyed 544 young adults (313 women and 231 men) to investigate their motivations for video game use, game genre preference, and the amount of time games were played. The article examined the gender differences (i.e., biological gender) in gamers' motivations. The authors found that female gamers reported less frequent play, less motivation to play in social situations, and less orientation to game genres featuring competition and three-dimensional rotation than male gamers. Also, Greenberg, Sherry, Lachlan, Lucas, and Holmstrom (2010) distributed a questionnaire to 1242 (551 male and 685 female) 5th, 8th, and 11th grade public schools students to examine the uses and gratifications for male and female gamers. The authors also used the gamer biological gender and found that male gamers play games more in any given week, and preferred physically oriented video games over female gamers. Female gamers, on the other hand, preferred traditional and thoughtful games. Thus, gamers have different motivations to engage in games.

All above works and development of gamer motivation ignore the relationship between gamer motivation and game engagement. The authors in past literature argue that male and female gamers have different motivations for playing games. However, this literature focused on gamers' motivations rather than their flow and engagement in games. Hoffman and Novak (2009) argue that gamer motivation expanded the flow model. Thus, this study is contributing to the flow theory by adding gamer motivation and incorporating the social interaction in games.

Table 1

Summary of UGT across Different Media From 1970s

type of media	author(s)	topic	sample	scale	key finding
Television	Greenberg 1974	Developed a scale for uses and gratifications theory in viewing television	conceptual	developed an original scale for viewing television and examined that scale that show internal consistency and reliability	The author found that age is a predictor for viewing television. In general, young viewers watched television more than other demography. However, age was not a consistent predictor for viewing television. Greenberg argues that arousal is a better predictor of gamers' motivation. The author also found a significant positive correlation between strength of identification with most viewing motivation and amount of television viewing.
Arcade	Selnow 1984	first used in the video game and uses and gratification (the study used arcade)	244 aged 10-24	Greenberg's 1974 television scale plus video game dimensions	The author investigates the relationship between TV viewing and playing video game in arcade. The author found a significant relationship. Also, the author found five factors to play games: a) gameplay is preferable to human companion B) game teaches about people c) game play provides companionship D) game play provides activity/action e) playing arcade game provides solitude/escape. These factors are significantly correlated with the amount of play.
Arcade	Wigand, Borstelmann and Boster 1985	The authors studied the uses and gratification of video game, and they focused on understanding the reasons that adolescents use arcade	477 colleges and high school students	Greenberg's 1974 television scale plus video game immersions	They found that the main reasons for using video game arcade for adolescents were for a)excitement) satisfaction for doing well and d)tension-reduction

(table continues)

13

Summary of UGT across Different Media From 1970s (continued).

type of media	author(s)	topic	sample	scale	key finding
Console video game	Philips et al. 1995	they investigate the uses and gratifications of console video gameplay	429M 387F aged 11-16 years old	The reasons given for playing were single-item measures: "to pass the time", "to avoid doing other things", "to cheer oneself up", "other reasons", and "enjoyment."	the reasons for using video game are: to pass the time, to avoid doing other things, to cheer oneself up, and just for enjoyment
Arcade	Griffiths 1991	research game addiction on arcade gambling game "fruit machine."	The author collected the data by overdriving the students in 33 amusement arcades in five towns in England.	The data were recorded onto pocket take recorder. The approach was, on the whole, empirical and qualitative, and cab be regarded as observational field studies capable of suggesting hypotheses, but not confirming fact.	the reasons for playing video games: a) arousal, b)social rewards, c)skill testing, d)displacement, and e)stress reduction
Console video game	Rubin 2000	uses and gratifications theory is cutting edge theory that provides insights for new mass communication medium: newspapers, radio, and television, and video game	conceptual	conceptual	scholars must prepared to expand their current theoretical models of uses and gratifications and do not continue using traditional tools and typologies to answer questions about new media use.
Console video game	Sherry and Lucas 2003	This article developed a comprehensive scale for game use and gratifications. The author use methodology similar to Greenberg 1974 in Television use and gratifications	544 (313F231M)	Greenberg's 1974 television scale adding plus game dimensions	Gamer play video games for these reasons: competition—to be the best player of the game; challenge—to push oneself to beat the game or get to the next highest level; social interaction—to play as a social experience with friends; diversion—to pass time or to alleviate boredom; fantasy—to do things that you cannot do in real life such as driving race cars or flying; and arousal—to play because the game is exciting. There are gender differences (biological) in playing video game.

(table continues)

Summary of UGT across Different Media From 1970s (continued).

type of media	author(s)	topic	sample	scale	key finding
Console video game	Greenberg et al. 2010	This article provides a social tableau of the different orientations of video game players.	1242(685F551 M)	use Sherry and Lucas 2003 scale	The authors found that males play the video game more in any given week, consistently stronger in all measured motives that female, and preferred physically oriented video game. Female on the other hand preferred traditional, and thoughtful games.

1.4   Gender Research in Consumer Research

Many consumer researcher focuses on sex (i.e., biological gender) and treat it as the only determinant of consumer behavior (Fischer and Arnold, 1990; Hirschman, 1993; Stern, 1999). Also, gender difference is a universal concept and can be applied everywhere and at almost any time. However, the basic argument for gender (i.e., psychological gender) is that the characteristic, attributes, and function for men are masculine and feminine to women (Grosz, 1994). Also, the author argues that men and women have different appropriate social roles. Thus, the social role is important in determining the appropriate role for each gender. But also the social surrounding shapes the individual's behavior, not only the physiological characteristics. This view is widely accepted in psychological and sociological research (e.g., C. Chou and Tsai, 2007; T.-J. Chou and Ting, 2003; Spence, 1993). We are reexamining gender in playing and purchasing video games.

1.4.1   Gender and Sex

People use the words "sex" and "gender" interchangeably. However, gender roles and consumption is complicated because of the confusion of labeling and the meaning of each term. According to Palan (2001) the term "sex" refers to an individual's biological sex, whether one is male or female. On the other hand, gender refers to the psychological traits of masculinity and

femininity that exist in each individual, and it varies from one to another (Fugate and Phillips, 2010; Markus, Crane, Bernstein, and Siladi, 1982). Moreover, Fischer and Arnold (1990) argue that a consumer's sex is not necessarily their gender and gender identity might be a better role than sex regarding a gendered product. Thus, our gender is not exactly our sex. Our gender is more psychologically accurate.

Consumers describe brands choice based on their masculine and feminine traits (Grohmann, 2009). Grohmann (2009) developed a measurement scale for brand personality and argued that consumers' need to express their masculinity/femininity through their choices. Moreover, consumer's associating with a brand that is masculine/feminine will enhance their degree of masculinity/femininity when they use their choices for self-expressive purposes (Fournier, 1998). Therefore, different games represent a different signal that influences gamer engagement and purchase intention.

1.4.2   Gender and Games

Video games have been studied within many disciplines, such as psychology (Federman, 1996) communication (Lucas and Sherry, 2004), and medicine (Baranowski et al., 2011). Few studies have focused on the impact of gender on video game engagement and preference. These studies have focused on addiction, violence, skill development, learning, and health. Although it has not produced nearly as much as studies as the field of psychology, the marketing discipline is in a unique position to provide new insight that can enhance our understanding of video games in general and co-creating value for gamers in particular.

1.5   Game Engagement

The term "engagement" was investigated in a number of different disciplines, such as sociology, political science, psychology, and organizational behavior. In the marketing discipline,

fewer studies were devoted to the terms "consumer engagement," and "customer engagement" before 2005 (Bordie et al., 2011). Customer engagement is defined as "a psychological state that occurs by virtue of interactive, co-creative customer experiences with a focal/ object (e.g., video game) in focal service relationships" (Bordie et al., 2011).

Adults and children across demographic levels play games in their leisure time. They use different types of technologies to achieve the optimal entertainment experience. Many scholars emphasize the importance of engagement in the virtual environment (Wasko and Faraj, 2005). Game engagement was proposed as a topic that is worthy of further study (Brockmyer et al., 2009; Funk, 2002). In this study, we are answering that call by examining gamer's engagement in a different genre and how that impacts games purchase intention.

The ultimate goal of marketers and game developers is to engage gamers in the game. For example, Warcraft III designs the game in a way to encourage gamers to co-create meaningful story (Buchanan-Oliver and Seo, 2012). However, game developers did not fully look at the difference between gamer psychological factors and motivation. Further, Yee (2006) argues that females prefer social, relationship, and teamwork games, whereas males prefer advancement, mechanics, and competition games. The author continues arguing that even male players socialized as much as a female players, but they socialized very differently. Thus, understanding these differences will increase gamer engagement into the game.

This study followed Brockmyer et al. (2009) in that the term "engagement" is used as a generic indicator of game involvement. The game engagements scale that Brockmyer et al. (2009) developed includes immersion, presence, flow, psychological absorption, and dissociation. Thus, gamer presence, flow, and psychological absorption are important constructs to understand how gamers co-create value for themselves by playing games.

1.6   Relevance and Timeless of the Topic

Playing video games is an important issue for both academics and practitioners. For example, games have inspired management scholars to propose the concept of "gamification" to describe the application that is used to engage consumers and motivate employees (Zichermann and Cunningham, 2011). Also, games are applied to various fields such as military training, education, medicine, sales, and virtual showrooms for new products (Marchand and Hennig-Thurau, 2013; Stahl, 2011). Approximately three-quarters of Americans spend money on games, and the number of American gamers is 209.9 million 2013 (raised from 205.9 million in 2012) (Siegal, 2014). Moreover, the average person spent 10,000 hours gaming by the age 21, which is 24 hours less than they spent in the classroom (McGonigal, 2011). Thus, although games impact a wide variety of people, the research in this area is not as scholars hoped.

Nearly half (47%) of gamers in the U.S. are females, and they are playing in record numbers (ESA, 2011). However, the gaming industry is targeting males in their twenties (Jenson & De Castell, 2010). Most of the marketing promotions and activates are towards males. Also, the characters (e.g., avatar) in the games illustrate the male-dominated community. According to Near (2013), the presence of female characters without male characters has a negative relation to sales. Thus, this study suggests economic motives for gaming practitioners to study gamer gender differences.

Gender identity has been significantly linked to consumer activities (e.g., shopping behavior, leisure activities, playing games) (Jenson and De Castell, 2010; Palan, 2001). Also, gender and sex is associated with the consumption process. It is not surprising that there are many researchers who have examined sex and gender. However, less is known about gender in consumer behavior research in general, and in video games specifically. Thus, this study examines the

18

gamers engagement and motivations.

1.7   Research Gap and Research Questions

Researchers have explored the differences between biological gender in game motivation and playing patterns, but gender identity differences remain unexplained (Lucas and Sherry, 2004). This research provides this explanation. Rather than viewing the biological gender differences in playing video games, we argue that gamers' gender identity and motivations can be explained best through gamer engagement and purchase intention.

This research investigates whether males and females have different gaming engagements. According to Yee (2006), males prefer achievement games while females prefer the relationship subcomponent of the game. Therefore, each gender has a different engagement level. Gamer motivations to play games vary from escaping the daily life to advancing the gamer's life. Also, Lin (2010) argues that males and females have different patterns of enjoyment for different games. Due to the growth of consumer choice and the decreasing barrier of playing games, people play more games in more time (Marchand and Hennig-Thurau, 2013). Thus, we want to investigate gamer gender identity and motivations with game engagement and purchase intention.

Gamers seek out flow state in playing video games. Also, gamers seek not only pleasure, but they also they seek personal attributes in playing games (Moore et al., 1996). Flow state refers to the effect an individual feels during an activity such as playing games. Also, Shin (2006) found that there is no gender difference in a flow state, but the author asks for more attention to individual differences, such as gender. In short, this dissertation addresses three major research questions:

- What are the factors that determine video game engagement?
- How gamers reached a different level of video game engagement (i.e., presence, flow, and psychological absorption)?

19

- How gamers' gender identities and motivations influence video game purchase intention?

1.8   Research Population

The sample frame included students at a major university in the southwestern United States. These students fit the study because the average age of college students is 18 to 25 year old, and this age group comprises 60% of gamer population (ESA, 2014). We eliminated students who do not play at least 15 minutes/week. Potential respondents identified through students in disciplinary classes. Convenience sampling was followed to gain a reprehensive sample of the entire population of gamers.

Responses were collected online through Qualtrics, with each student receiving a unique URL to provide their participation. Therefore, while we ensure that the participants are anonymous, we offer extra credit to the students who identify themselves. We removed responses from our analysis that did not take sufficient time to respond or did not play games. Also, respondents were asked questions about their gender identity and motivations. The survey ended with demographic questions.

1.9   Potential Contributions

The video game industry has now surpassed the movie industry in terms of annual sales and global revenues (Prugsamatz et al., 2010). Video games seem to be the fastest and most exciting category of entertainment. While academic research on entertainment has increased, marketing scholars still contribute far less attention to video games compared to other entertainment industries such as movies and music (Marchand and Hennig-Thurau, 2013). Thus, the potential contributions of this study are:

1) Theoretical insight about gamer gender identity and how that affects their game engagement. As Grohmann (2009) explains that consumers describe brand choices based on their masculine and feminine traits. Also, Van Doorn et al. (2010) suggests that individual traits can affect the level of consumer engagement. They argue that individual characteristics can influence cognitive processes and decision-making.

2) Contribution to the flow theory and explanation why people reach a higher level of flow state when they play certain games. Hoffman and Novak (2009) argue that flow state will occur more often in playing video game than in visiting a website. This study contributes to the flow theory by including the social factors in the flow theory. Also, flow state mediates the relationship between consumer motivations and their behavior (L.-Y. Huang, Hsieh, and Wu, 2014). Thus, this study will contribute to the flow theory by including social factors and testing the theory in an interactive context (i.e., video game).

3) Helping marketers segment the market more efficiently and precisely. This study helps marketers and advertisers to segment the market according to the gamer gender identity. The new insights enhance segmenting and targeting because gamer psychological genders influences their game engagement and preference to games. Moreover, this study helps advertisers to promote the right game to the right customers in the correct ways. We believe that both male and female gamers who have feminine characteristics prefer socialized games and want to see socialized cues in the stimulus. On other hand, male and female gamers who have masculine characteristics prefer achievement games and want to see achievement cues in the stimulus. For example, female players are motivated by the common good of the group (social factors) (Van Doorn et al., 2010).

4) Helping managers and game developers design games that encourage consumers to engage. For example, games inspired scholars to propose the concept of "gamification" (using video game elements in-non gaming activities) to describe the application of psychological game design principles for engaging customers and motivating employees (Marchand and Hennig-Thurau, 2013). Moreover, companies are using creative ways to engage customers in their brand. For example, they can design a game to make customers engaged and remind them of their brand. Thus, this study determines consumer motivations for engaging in an experiential consumption.

5) Helping advertising companies identify new media to attract customers. Consumers have more options of skipping ads by zipping and zapping. Moreover, companies have to find creative ways to promote their products and services, such as social network sites (SNS) and video games. The traditional media treats consumers as passive users (Hoffman and Novak, 2009). However, gamers have an active role in a video game. They can choose the product inside the game (i.e., virtual goods). For example, in *Grand Theft Auto V* gamers can choose the car they play with, which influence their decision later on real life. Also, Hoffman and Novak (2009) argue that video game has more interactivity than a regular visit to the website.

6) Determining consumers' motivations to purchase games and virtual goods. The rising importance of virtual goods is similar to purchasing with in-game decisions. The motive to buy is similar to those that drive the choice to play the game at all (Marchand and Hennig-Thurau, 2013). For example, some automakers have a virtual showroom for new products. Also, some games started offering non-gaming content, such as movies,

television, and music. Thus, this study determines the consumers' motivations to purchase games and virtual goods.

1.10   Overview of Dissertation

This dissertation is organized in the following manner. In Chapter 2, gender identity concept and theories, video game engagement, and gamer motivation studies are reviewed. Flow theory and uses and gratification theory are applied to link the gamer gender identity and motivations with video game engagement. Theory explanations are provided as well as empirical support for the role of the theory. Then, the research framework and hypotheses are developed based on the literature.

The research design is presented in Chapter 3 including the research measurement, sampling, data collection, and discussion of the analysis technique. Chapter 4 will be presented to describe and interpret the analysis and results based on statistical techniques that were proposed in Chapter 3. Finally, in Chapter 5 this dissertation provides discussion of the study's theoretical and practical implications along with limitations and suggestions for further research.

CHAPTER 2

LITERATURE REVIEW

This chapter reviews the literature that underlines the seminal constructs of gender identity, gamers' motivations to play, and consumers' engagement. In order to achieve that goal, first we explore the theoretical frameworks that underlie the conception, measurement and operationalization the gender identity and gamers' motivations. Then, the author conceptualizes the consumer engagement for video games and examines the influence of gender identity and gamers' motivations in reaching game engagement. The research to date provides a rich source for finding the potential impact of gender identity on games preference and pattern. Accordingly, this chapter employs extensive review approach to identify both the congruent and incongruent research findings related to gender identity, consumer engagement, and video game. The theoretical and practical gaps provide a rationale for developing hypotheses and proposing research model. Finally, the growing importance of video gaming is discussed as relevant and timely topic for testing and proposed a model.

2.1   Gender Identity

2.1.1   Concept of Gender Identity

Researchers are using the term "sex" and "gender" interchangeably. In this section, we are going to clarify the different between the two. Also, we are going to draw the development and the history of gender identity concept. For example, psychologist and social scientists have debated the different between sex, gender role, and gender identity. Researchers believed for a long time that individual's physiological characteristics of gender were not part of their gender identity. Moreover, male and female are defined by their biological characteristic that is given by birth (Darwin, 1958; Freud, 1933). For long time, the biological essentialist argues that the difference

in gender is biologically driven, and that is consistent across cultures (Bem, 1993). Also, cognitive neuroscientists have improved the basic biological essentialism to include the neural synapses and wiring of the brain. (Meyers-Levy and Sternthal, 1991; Sperry, Zaidel, and Zaidel, 1979). Thus, the different between sex and gender role need more research.

Psychologist and sociologist researchers have challenged the biologist essentialism view regarding the scope and the nature of gender identity (e.g., Bem, 1977; Spence, 1984).The new view of gender identity not only includes the individual's physiology, but also includes the individual's psychology. Robert Stoller in his book *Sex and Gender: On the Development of Masculinity and Femininity* was one of the first researchers who use the term gender identity properly (Stoller, 1994). Gould (1996) argues that gender is a culture concept that serves as self-expression. In this view, gender identity is socially constructed. Also, men and women have different level of masculine and feminine characteristics (Bem, 1993; Thompson, 1996). Thus, the new view has changed the way researchers look at gender identity, and it is widely acceptable in many disciplines such as psychology, sociology, management, and marketing.

2.1.2   Gender Role Attitude

Gender role attitude is based on the gender role concept. The gender role defined as cultural-derived activities related to the masculinity and femininity characteristics the individual choose to adapt (Palan, 2001). Also, gender role attitude refers to the individual's beliefs about their roles, rights and responsibilities that are socially acceptable and appropriate for men and women (Palan, 2001). We are following Palan argument that gender identity is related to both gender role and gender role attitude, but it does not have to be congruent with each other. Gender role attitudes can range from egalitarian (all roles and activities are appropriate for men and women) to more traditional view (most roles and activities are distinct to one gender). For instance,

a woman, who reports favorable attitude towards staying home, may engage in some traditional feminine gender role at the same time (Fischer and Arnold, 1990; Spence, 1984).

Psychological characteristics can establish a relationship between gender identity and consumers behavior. Gender identity can be defined as the psychological sense of maleness and femaleness within an individual (Spence, 1985). However, Lemer (1986) and Firat (1991) argue that gender identity is socially constructed. Thus, gender identity construct is a multi-dimensional construct that include the individual's psychological traits and the individual's gender role in the society (Constantinople, 1973; Deaux, 1985; Palan, 2001).

2.1.3   Sex and Gender

The term "sex" refers to the innate structure, and the physiological characteristics related to reproduction and divide animals to male and female. The presence and absence of certain genitalia (at birth) donate the individual to be male or female. These characteristics are evident and hardly missed. We can notice that men show stronger realistic and investigative interests while women show stronger artistic, social, and conventional interests (Su, Rounds, and Armstrong, 2009). Thus, the individual is assigned to either a male or female based on the genes and the physiological characteristics.

On the other hand, psychological gender refers to psychological attributes that associated with masculinity (male) and femininity (female) (Bem, 1993). Moreover, masculinity traits include independent, assertive, strong personality, forceful, have leadership abilities, willing to take risks, while femininity traits include affectionate, sympathetic, love children, eager to soothe hurt feelings, and compassionate (Bem, 1981; Powell, Butterfield, and Parent, 2002). Thus, psychological gender can classify people to be masculine and feminine regardless of their sex (i.e., biological gender) (Palan, 2001).

2.1.4   Gender Schema Theory

The new approach to gender identity suggests that healthy men and women could possess similar characteristics. Also, gender schema theorists argue that individuals develop naive thinking about their gender, organize information and make decisions based on their gender. Moreover, social environment can lead to a development of gender identity and schema. For example, in some society individuals are encouraged to create information based on gender lens (Bem, 1993). Thus, gender schema theory can predict and explain individual consumer decision.

Gender identity that was proposed by Bem (1993) can be traced back to cognitive development and social learning theories. The cognitive development theory advances the gender theories by emphasizing the concept as the central part of sex process. The individual's understanding of gender concept is essential to gender growth (Kohlberg, 1966). Also, the individual's cognitive process affects the perception of gender role that the individual learned from the surrounding environment. Thus, the cognitive process leads to logical thinking that leads to individual's behavior.

Bem Sex Role-Inventory (hereafter BSRI) was design to examine psychological gender empirically (Bem, 1981). The BSRI challenged the assumption that masculinity and femininity are bipolar apart. Moreover, the BSRI includes separate scale for masculinity and separate scale for femininity that are defined in term of culturally desirable traits for males and females. The individual could possess a number of traits from masculinity and femininity scale (Hoffman and Borders, 2001). Moreover, the basic argument from BSRI is that sex-typing is derived from the individual's willingness to encode and organize information about self in term of the cultural definition of males and female (Bem, 1981).

The BSRI consists of 60 personality traits that respondents rate themselves on a scale of 7 points Likert scale ranging from 1 (*never or almost never true*) to 7 (*always or almost always true*). The 20 personality traits are stereotypically masculine (e.g., independent, assertive, strong personality, forceful, and have leadership abilities), 20 are stereotypical feminine (e.g., affectionate, sympathetic, and love children), and 20 are considered to be filler for either gender (e.g., moody, conceited, and conscientious). The 20 filler items measure the social desirability in response. However, the scale was long, and Bem (1981) constructed a short form of BSRI. The Short form consists of 30 of the original 60 items with 10 items for each of the three scales. Thus, the BSRI gender schema theory changed the way masculinity and femininity are conceptualized. The culture context rather than the sex is considered to determine what is feminine and what is masculine (Hoffman and Borders, 2001). Moreover, the sex differences are de-emphasis, and men and women are identifying their gender based on their psychological differences.

2.1.5   Multifactorial Gender Identity Theory

Gender schema theory received a significant support in the literature (e.g., Hoffman and Borders, 2001; Powell et al., 2002). However, some researchers criticized the theory that is not robust enough and it falls short of explaining the individual psychological gender (Deaux, 1985; Palan, 2001). The multifactorial gender identity theory argues that gender is multifactorial construct (Spence, 1984, 1985, 1993). Moreover, Spence argues that masculinity and femininity are conceptually distinct from gender role expectations. The multifactor gender identity criticizes gender schema theory by denying the unifactorial gender differences in any given society. The multifactorial gender identity argues that gender differences are multifactorial (Edwards and Spence, 1987; Spence, 1984, 1993).

Gender is constructed in social interaction and situations. Researchers should include how people think about their gender and what they expect from that gender in any given situation (Martin, 2000). The multifactorial gender identity explains and incorporates these concepts (Palan, 2001). The underlying assumption of this theory is that gender identity is a combination of gender-related phenomena (e.g. gender behavior, attitude, role, and interest) and gendered personality traits. Also, individual's gender-related thoughts, attitude, and behavior are determined by multifactor that range from culture shared conceptions to individual cognitive factor. Thus, individuals may show gender qualities that are different from their sex (Martin, 2000; Spence, 1993).

Spence and Helmreich (1979) called for more precise definition of masculinity and femininity. Also, Spence (1993) proposed that children, who developed sense of gender identity may have a hard time to change it. Once the gender identity is established the individual influence of other factors such as social norms and gender role. The socialization may (dis)confirm the individual gender identity. These factors are developed based on the individual differences and not related to sex (Edwards and Spence, 1987).

There is no consensus on what comprise gender identity. Researchers emphasize that gender is beyond biological sex and include at least psychological gender and gender role (Palan, 2001; Spence and Sawin, 1985). In this dissertation, psychological gender, and the gender role reflect different domains of gender. For example, a woman who shows leadership qualities in the work, while managing a home effectively is an example of an individual who complies with gender norm at home and not at work.

Personality Attributes Questionnaire (PAQ) is the scale that used to measure the people masculinity and femininity (psychological gender). The scale has two set of items to measure

masculinity and femininity (Palan, 2001; Spence, 1993). The BSRI and PAQ are similar in content, and these scales can measure the psychological gender. Spence (1991; 1993) argues that both of these scales can measure gender identity. Also, gender role can help the psychological gender to determine gender identity (Fischer and Arnold, 1990).

In general, gender identity is a complex construct. For example, the individual, who does not experience strong interests, traits, and attitude based on his/her sex, might have a hard time declaring his gender identity. Moreover, people build their gender identity based on a complex process from birth until adulthood. These factors include culture, attitude towards the gender, and behavior. Deaux and Major (1987) found that it was hard for sex to predict behavior consistently. Also, the authors argue that we cannot ignore sex differences in consumer behavior. Thus, multiple gender measures are recommended to predict and interpret gender-related behavior.

2.1.6   Consumer Research and Gender Identity

Table 2 presents an overview of seminal articles that liked gender identity and customer behavior. According to Palan (2001), there are not many relevant studies in gender identity. Although there are many studies that have recognized gender identity as an important issue in customer research, there are inconsistent results that call for more studies to understand gender identity and customer research.

Gender can be linked to influence many consumer decisions such as leisure activities (e.g., play video games) and shopping behavior. Marketing literature considers biological sex as one of the main drivers of gender-related behavior (Yee, 2006). Also, Palan (2001) reviewed the use of gender identity in the marketing literature and the environment and found that gender identity can provide meaningful insights into consumer behavior. For example, the name used for a game (The American Girls: Dress Designer) might activate gender schema that lead to a significant difference

31

in preference between men and women. Thus, gender cues in the games and product might affect the individual behavior and preference.

Several studies have examined the relationship between gender identity and consumer behavior. Allison, Golden, Mullet, and Coogan (1980) looked at the perception of masculinity and femininity in products. Also, Kahle and Homer (1985) examined food gendered product preference. Fischer and Arnold (1990) investigated gender and gift exchange. Finally, Grohmann (2009) explains that consumers describe their brands choice based on their masculine and feminine traits. Thus, the crucial question is: "Does gender identity predict consumer's purchase intention?" This dissertation addresses the gap between gender identity and consumer behavior in playing video game.

2.1.7   Video Gaming and Sex

It has been established in the past decades that games are liked and played more by male than female gamers (Jenson, 2005; Jenson and De Castell, 2010; Lucas and Sherry, 2004). This difference may due to access, social pressure, and motivation. For example, the annual Annenberg Public Policy Center found that 76% of houshold who have at least a boy have a video game compared to 58% of household who have at least one girl (Woodard and Gridina, 2000). Also, male gamers are more likely to play two or more hours a week (Ogletree and Drake, 2007). Others argue that the difference between male and female gamers derived less from access and more from play preference. Moreover, games are designed for male gamers that have high sexual context and weak female protagonists that can turn away potential female gamers (Lucas and Sherry, 2004). Others believe that male gamers have different motivation and preference to play games. For example, male gamers have higher motivation to play fantasy and challenge games and have no much difference in enjoyment, control, and diversion games than female gamers (Jansz et al.,

2010). Regardless of the source of difference, female gamers do not have equal attention and fair chance than male gamers. Male gamers have more advantage than female gamers in playing games.

Some research found that there is no significant gender difference when we account for genre choice and motivation (Floros and Siomos, 2012; Jenson and De Castell, 2008; Poels, De Cock, and Malliet, 2012). They argue that male and female gamers experience the same level of play opportunity if they have the same motives and get similar genre. For example, if a girl likes to play a violent game, she will have the same level of play-time and motives to play to a boy who wants to play the same type of game. Even though that female in general report lower brand attitude for violent games (Yoo and Peña, 2011). Thus, Poels et al.(2012) recognize the conflict that indicate the difference between male and females in playing video games and suggest further research in this area.

Many researchers have found consistent differences between males and females in games preference and play patterns (e.g.,Jenson and De Castell, 2010; Poels et al., 2012; Yee, 2006). Cassell and Jenkins (2000) discussed what females "like" and "did not like" to play games. They argue that female gamers like collaborative and exploratory games and shy away from confront and violence games. Even though, many researchers try to explain the difference between males and female gamers in playing games (Jenson, 2005; Jenson and De Castell, 2010). The academic research has begun to recognize that gap and move away from stereotyped gender difference in gameplay and explain beyond that. Thus, this research is explaining gamers' gender identity that go beyond their biological sex.

2.2   Video Gaming and Gender Identity

Male and female gamers are playing games in records number. However, the first

generations of games were not directly market to either gender. The graphic design and the development of the characters were at early stages. For example, how to make "*Pacman"* appeal to one sex? However, when the graphics and the characters became more advanced in games, the more valuable gender target become to marketers. Once we have recognizable characters in games, we can market them more specifically to one gender. Thus, games became more and more gender identifiable.

Gender differences can strongly predict the time and the pattern in playing games. For instance, Mentzoni et al. (2011) found that being young, and male can predicate higher playing pattern than otherwise. Moreover, male gamers are playing more games in more times than female gamers (Greenberg et al., 2010; Lucas and Sherry, 2004; Mentzoni et al., 2011). Also, Lin (2010) argues that male and female gamers have a different pattern to enjoy games. Male prefer to play achievement games while female gamers prefer social type games (Lin, 2010; Yee, 2006). However, Feng, Spence, & Pratt (2007) found that playing action games can close the gap between male and female gamers virtually which means that male and female gamers can be closer to each other while playing preferred games. This view can support our argument that gender identity play a role in game preference that bridge the gap between males who have masculine characteristics and females who have high masculine characteristics and little feminine characteristics.

Many researchers in the gaming literature refer to the term "gender" to the gamer biological difference (e.g., Jenson and De Castell, 2010; Poels et al., 2012; Sherry et al., 2006). However, Martey, Stromer-Galley, Banks, and Consalvo (2014) investigate the relationship between the gamer gender identity, using BSRI scale, and the avatar they choose. The authors found that men may not seek to mask their offline gender when they choose a female avatar. That means the pattern

in which the gamer play that avatar can determine the gender of the player. This research continues

that line of research by exploring the gamer gender identity and game preference and pattern.

Eastin (2006) argues that when female gamers choose to play a female (matching)

characters, they experience more aggressive and more presence experience. The match between

the gamers and the characters they choose can increase the enjoyment experience. The author

measured the biological sex of the gamer by asking them about their sex. We think by investigating

gamers' psychological identity, we can explain more about gamers' engagement and purchase

intention.

Table 2

Summary of Gender Identity and Customer Behavior Studies
Modified and Update Based on Palan (2001)

Research	Sample	Scale	Result
Aiken 1963	300F	CPI	Significant positive correlation between femininity traits and decoration, interest, and conformity dress clusters.
Vitz & Johnson 1965	97F 97M	CPI	Significant positive correlation between smokers' masculine personality traits and the masculine cigarette brand image.
Fry 1971	216M&F	CPFI	Feminine individuals, including males and females, prefer cigarette brands with feminine brand images. And there is a stronger effect when individuals have higher self-confidence.
Morris & Cundiff 1971	223M	CPI	Males with high feminine traits and high anxiety have more unfavorable attitudes toward feminine hair spray products than do males with low or medium feminine traits.
Tucker 1976	13M	PAQ	Traditional sex roles are blurring relatively to gender identification.
Burns 1977	99F	PAQ	Masculinity is a significant determining factor in wife's decision-making power.
Gentry & Doering 1977	100M 100F	CPI PAQ	Psychological gender is a stronger predictor of attitudes toward leisure activities. However, biological sex is a better predictor than psychological gender for both attitudes and usage difference of different leisure categories.

(table continues)

Summary of Gender Identity and Customer Behavior Studies (continued).

Research	Sample	Scale	Result
Gentry et al. 1979	100M 100F	CPI PAQ	Biological sex accounts for more variability than gender traits with respect to perceptions of leisure activities.
Gentry & Doering 1979	100M 100F	CPI PAQ	Biological sex is more strongly related to attitudes and usages of leisure activities than is gender identity. Biological
Golden et al. 1979	307M&F	BSRI (Long)	sex is significantly related to product sex-tying, while gender identity is not.
Allison et al. 1980	174M 133F	BSRI (Long)	Sex is a better predictor of product perception than gender role self-concept. Product sex typing is based on sex, product, and interaction between sex and product.
Martin & Roberts 1984	125M&F	BSRI (Long)	Psychological gender is significantly related to performance expectations of women entrepreneurs, while gender role attitudes significantly related to expectations of proven individuals regardless of their sex.
Gentry & Haley 1984	86M 82F	PAQ	Biological sex is a better predictor for ad recall and ease of recall than is psychological gender. Furthermore, psychological gender within sex is more Interesting than gender identity between sexes.
Coughlin & O'Connor	420M&F	BSRI (Long)	Masculine gender identity explains more difference in purchase intention as a reaction to female role portrayals in ad. than does biological sex.
Kahle & Homer 1985	84M 55F	BSRI (Long)	Biological sex is a better predictor of food preferences than is psychological gender.
Barak & Stern 1986	614F	BSRI (short)	Baby boomers and pre-boomers interpret sex role differently. Furthermore, masculinity scales seem to be self-assurance index, which may be more important to consumer behavior than femininity scales.
Qualls 1987	89M 89F	BSRI (Long)	BSRI, as a measure of sex role orientation, is positively related to household influence.
Stern et al. 1987	380F 380M	SIS	Develop SIS scale to examine psychological gender. However, SIS is strongly correlated with biological sex.
Jaffe & Berger 1988	100F 111M	BSRI (Short)	Psychological gender is significantly related to preference for sex role positioning in advertising, but

(table continues)

Summary of Gender Identity and Customer Behavior Studies (continued).

Research	Sample	Scale	Result
Schmitt et al. 1988	120F	BSRI (Long)	the relationship differs by product categories. Biological Sex is a better explanatory variable than psychological gender with respect to recall, choice and memory tasks.
Gould & Stern 1989	65M 70F	BSRI (Long)	Biological sex is a better predictor of fashion attitudes than psychological gender, but psychological gender is more important in examining within sex and between sex differences.
Fischer & Arnold 1990	299M&F	BSRI (Long)	Feminine gender traits are positively related to involvements in Christmas gift shopping for both men and women; Men are likely to be more involved if they hold egalitarian gender role attitudes.
Gould & Weil 1991	59M 68F	BSRI (Long)	Biological sex is a better predictor than psychological gender in explaining feelings, attitudes and gift choice. However, psychological gender is useful in explaining within-group difference.
Jaffe 1991	200F	BSRI (Short)	Psychological gender is a useful predictor of women's response to advertisement. Masculinity is the driving force in explaining women's response to ad.
Worth et al. 1992	40M 72F	PAQ	Consumers prefer products described in terms of congruity with their self-perceived schema for masculinity or femininity; Interaction between consumers' self image and the type of product information conveyed is more important in influencing product evaluation than either of these factors alone. Both
Gainer 1993	147M 210F	BSRI (short)	sex and feminine gender traits affect art attendance indirectly through involvement. Furthermore, Feminine gender traits directly affect involvement, while biological sex indirectly affects involvement as a result of childhood experience with arts.
Gould & Stern 1993	135M&F	BSRI (Long)	Females are more privately gender-conscious than males.
Fischer & Arnold 1994	299M&F	BSRI (Long)	Both psychological gender and gender role attitudes explain more differences in Christmas shopping than biological sex.
Garst & Bodenhausen 1997	211M	GAI	Men who endorse traditionally masculine gender role attitude did not alter their attitude after exposure to non-traditional depictions of men.

(table continues)

Summary of Gender Identity and Customer Behavior Studies (continued).

Research	Sample	Scale	Result
Kempf et al. 1997	105M&F	PAQ	Psychological gender accounts for variance in several different measures of advertising processing confidence, including brand belief confidence, attitude toward the ad confidence and generalized information processing confidence, which is beyond what is explained by biological sex.
Palan et al. 1999	64M 51F	BSRI (Short) SIS PAQ	SIS scale is highly correlated with biological sex.
Palan, Areni & Kiecker 2001	64M 51F	BSRI (Short)	Men's involvement in gift exchange is sometimes incongruent with society's gender role expectation. Masculine male are far more likely than feminine male to recall gift giving experiences. Furthermore, feminine individuals are person-focused while masculine individuals were object focused.
McCabe 2001	529M&F	PAQ	Femininity traits are predictors for individual's psychological involvement with sports. Furthermore, gender role attitudes affect psychological involvements with sports.
Hoffman & Borders 2001	Conceptual	BSRI	The article has three major finding The first is to short form of BSRI can be as valid as the long form. The second is that BSRI can be used as a research tool in the current participants among young respondents. The third finding is that the researchers who use BSRI are not knowledgeable about it as they need to be.
Cassell and Jenkins 1999	none	conceptual	They recognize gender and video game as topic within the more general issue of gender and technology. The authors also suggest that companies will increase profit and market share by engaging female into the picture.
Grodal 2000	none	BSRI	The video game does not replace other traditional forms of entertainment buy rather incorporate them. The author founds that female gamer's play collaborative and exploratory and shying away from violence and confrontation games.

(table continues)

Summary of Gender Identity and Customer Behavior Studies (continued).

Research	Sample	Scale	Result
Ndubisi 2006	92M&120F	Biological sex	The effect of gender on consumer behavior. Gender differences on decision-making process: Man and women are different in these areas: financial decision-making, hospital, retirement, etc.
Ye and Robertson 2012	109F&129M	BSRI	The authors argue that gender identity, sex, and gender role attitude have a unique relationships with product involvement and brand loyalty. Thus, individuals with stronger feminine identities tend to have greater psychological involvement with personal care products. Also, masculine individuals tend to build a strong relationship with a brand if the brand provides them a mirror for reflecting a desirable masculine self-image.
Ulrich and Tissier-Desbordes 2013	none	conceptual	The author suggests that gender provides us with a more understanding of customer behavior looking at society and the men and women that form it in a different way. Also, gender adds an explanatory dimension to our understanding of consumer behavior beyond biological sex, preferably multifactorial approach.

*Different measurements were used in gender identity studies:
CFI (California Psychological Inventory) is based on the unidimensional gender identity model and treats masculinity and femininity as bipolar opposites. It was not used in consumer research after 1970s.
BSRI (Bem's Sex Role Inventory) and PAQ (the Personal Attributes Questionnaire) have dominated gender identity research since 1980s. Both scales treat masculinity and femininity as orthogonal constructs. BSRI has a long version (60items) and a short version (20 items).
Other scales, SIS (Sexual Identity Scale) and GAI (Gender Attitude Index) were rarely used. SIS was found significantly related to sex and thus had no extra meanings (Palan 1999).

2.3 Engagement

2.3.1 Consumer Engagement

The term "engagement" has been investigated across a number of disciplines such as political science, psychology, and organizational behavior. The concept received less attention in the marketing discipline in recent years (Brodie, Hollebeek, et al., 2011; Leeflang et al., 2009). "Engagement" is viewed as promising concept that enhance the predictive and explanatory power of customer outcome and relationships (Hollebeek, Glynn, and Brodie, 2014).

Many researchers attempt to define and measure game engagement. We reviewed the "engagement" conceptualizations in the marketing literature (Table 3). The table observed that

some scholars used "consumer engagement" while others used "customer engagement" (Brodie, Hollebeek, et al., 2011; Van Doorn et al., 2010). In this study, the focus is on video game engagement. In these definitions, the author (s) define the term "engagement" based on the context that been investigated (i.e., video game). For example, Phillips and McQuarrie (2010) define advertising engagement as "modes of engagement" which is aligned with their advertising context. However, in another context, Calder, Malthouse, and Schaedel (2009) define online engagement as "a consumer's beliefs about how a (web)site fits into his/her life." The authors argue that engagement has eight dimensions: 1) stimulation & inspiration; 2) social facilitation; 3) temporal; 4) self-esteem & civic mindedness; 5) intrinsic enjoyment; 6) utilitarian; 7) participation & socializing; 8) community. Also, Calder and Malthouse (2008) discuss the concept of engagement in media. They were focusing on consumer's psychological experience while consuming media and video game are part of the new media. Thus, the definition of "engagement" is based on the context that been studied. In this study, we are investigating the users' engagement in playing video game.

Table 3

Consumer Engagement Conceptualization in Marketing Literature

Adapted and Modified from Brodie et al. (2014)

Author(s)	Research type	Concept	Definition	Dimensionality
Brodie et al (2011)	Conceptual	Customer engagement	A motivational state that occurs by virtue of interactive, co-creative customer experiences with a focal agent/object (e.g. a brand) in focal brand relationships.	Multidimensional:1.cognitive 2.emotional 3.behavioral
Hollebeek (2011)	Conceptual	Customer brand engagement	The level of an individual customer's motivational, brand-related and context-dependent state of mind characterized by specific levels of cognitive, emotional and behavioral activity in brand interactions.	Multidimensional:1.cognitive 2.emotional 3.behavioral
Calder, Mathouse, and Schadel (2009)	Empirical: Quantitative	Online engagement	A second-order construct manifested in various types of first-order 'experience' constructs, with 'experience' being defined as "a consumer's beliefs about how a (web)site fits into his/her life."	Multidimensional: 1. Stimulation & inspiration; 2. Social facilitation; 3.Temporal; 4. Self-esteem & civic mindedness; 5. Intrinsic enjoyment; 6. Utilitarian; 7. Participation & socializing; 8. Community
Author(s)	Research type	Concept	Definition	Dimensionality
Abdul-Ghani, Hyde, and Marshall (2011)	Empirical: Qualitative	Engagement	Requires consumer connection (e.g. with specific media).	Multidimensional: 1. Utilitarian; 2. Hedonic; 3. Social
Sprott, Czellar, and Spangenberg (2009)	Empirical	Brand engagement in self-concept	An individual difference representing consumers' propensity to include important brands as part of how they view themselves.	Unidimensional
Phillips and McQuarrie (2010)	Empirical: Qualitative	Advertising engagement	'Modes of engagement' are routes to persuasion.	Multidimensional: Consumers engage ads to: 1. Immerse; 2. Feel; 3. Identify; 4. Act
Brockmyer et al. (2009)	Conceptual	Video game engagement	A generic indicator of game involvement	1. Presence 2.flow 3. Psychological absorption

2.3.2 Video Game Engagement

Flow state refers to the mental state in which a person is fully engaged and involved in a

psychological feeling (Czikszentmihalyi, 1990). The optimal experience while playing games is

illustrated as a flow state (Sherry, 2004). For example, if the gamers enter the flow state, he or she

will engage in playing the game with no external distraction. Therefore, video game engagement includes gamers' flow experience.

Further, Brown and Cairns (2004) argue that the term immersion is widely used to describe gamers while they play games, but it is no clear what does the word means. The authors describe immersion based on the experience of gamers. Also, they used grounded theory to divide the gamers' immersion into three levels: engagement, engrossment, and total immersion. The engagement in this paper is the lowest level of involvement with a game and must occur at any other level. Gamers need to invest time, effort, and attention to enter this level. The second level is engrossment. In this level, the gamer may able to become further involved in the game and become engrossed. The game construction is a barrier to engrossment. The game construction means that the gamers' emotions are directly affected by the game. Gamers at this level are investing more time, effort and attention, and high level of emotional investment in the game. This amount of investment makes the gamers want to keep playing. The last level is the total immersion where the gamers are unaware of the surroundings and detached from reality. The barriers to total immersion are the gamers' empathy and the atmosphere. Empathy is the growth of the atmosphere and the development of game construction. Gamers in this level feel attached to the main character or a team. The gamers who did not feel total immersion mentioned their lack of empathy. The atmosphere is created by the game graphics, plot, and sounds combine to create this feature. The game elements must be relevant to the actions and location of the game characters. Therefore, game engagement has different levels that gamers can achieve start from engagement until fill immersion or presence in that activity.

Chen, Kolko, Cuddihy, & Medina (2005) used fidelity, immersion, and engagement to define and measure engagement. The authors argue that the level of interest in the games content,

presentation, characters, theme, and genre is prerequisite for game engagement. They argue that when attend to a task, a person diminishes stimuli that are outside of their locus of attention. This paper defines engagement as 1) the psychological state of being enveloped by the system 2) the user's ability to identify themselves as being within the environment (M. Chen, Kolko, Cuddihy, and Medina, 2011). Gamers have to create mental state themselves into the game environment and accept the game world's rules as real. In a first-person shooter game (e.g., Call of Duty), gamer use their avatar in the game to imitate the real-world. Thus, game engagement can be defined in terms of fidelity, presence, and engagement.

2.3.3   Video Game Engagement Levels

Different authors have defined game engagement differently (e.g., Brown and Cairns, 2004; M. Chen et al., 2011; M. Chen et al., 2005). In this article, the author argues that game engagement is not defined well. Video game engagement include immersion, presence, flow, and psychological absorption (Brockmyer et al., 2009). The immersion state describes the experience of becoming engaged in the game experience while retaining some awareness of the one's surroundings (Brockmyer et al., 2009). Immersion has also defined in term of the ability to induce the feeling of being a part of the game environment. The author argues that most of the gamers have experienced some degree of immersion.

The second level of engagement is presence. Presence is defined as 1) being in an ordinary state of consciousness and 2) having the experience of being inside a virtual environment (Brockmyer et al., 2009). Also, virtual environment game creates presence. For example, Second Life (http://secondlife.com) has complicated social relationship and economic environment. People feel presence in this virtual environment (Hoffman and Novak, 2009). The first and second

engagement levels can be combined to form one low level of engagement called "presence" (Procci, James, and Bowers, 2013).

The third level of engagement is flow. Flow describes the feeling of enjoyment that occur when the gamers achieve a balance between his skills and the game challenge. The gamers who have a specific goal and immediate performance feedback increase the likelihood of flow state (D. Hoffman and Novak, 2009; Sherry et al., 2006). Gamers may experience flow somewhat less common than presence. However, Hoffman and Novak (2009) argue that people experience flow more in a virtual environment (i.e., video game) than in using the online, in general.

The highest level of game engagement is psychological absorption. Psychological absorption describes the gamers total engagement into the games (Brockmyer et al., 2009). In psychological absorption state, gamers do not fell conscious which is different from immersion, presence and flow. In this state, gamers separate their thoughts, feelings, and experience and affect. Gamers' tendency to become psychologically absorbed can be conceptualized as a trait while the experience of psychological absorption in a specific activity (e.g. video game) is a state (Brockmyer et al., 2009; Irwin, 1999). The high engaged consumers (e.g., gamer) are crucial to the company success because they are an excellent source of knowledge, help the company to get new ideas, modify existing products and design new products. For example, Lego used high engaged consumer to create new products (Van Doorn et al., 2010). Also, Apple release beta software and applications to highly engaged consumer to detect bugs and new use for these products. High engaged users help companies to improve and gain competitive advantage.

We will follow Brockmyer et al. (2009) that the term "engagement" is a generic indicator of game involvement. The other related terms (e.g. immersion, presence, flow, and absorption) can

provide deeper understanding of the player engagement. Thus, in this dissertation we will use Brockmyer et al. (2009) to define engagement.

2.3.4   Measuring Video Game Engagement

There are many attempts to measure consumer engagement. Table 3 summarizes how the previous literature has measured consumer engagement. For example, Procci, James, and Bowers (2013) argue that age, gender, and gaming experience are important factors affect patterns of play. The authors argue that individual's differences will not influence low-level engaged gamer. However, high-level of engagement decrease by age. Although the authors recognized and measured participants' sex, they did not find a significant difference between male and female gamers in this study. The authors suggest more research to address the game engagement and gender. Also, Calder, Mathouse, and Schadel (2009) measured online engagement by eight dimensions: 1) stimulation & inspiration; 2) social facilitation; 3) temporal; 4) self-esteem & civic mindedness; 5) intrinsic enjoyment; 6) utilitarian; 7) participation & socializing; 8) community.

Another attempt to measure engagement was by Phillips and McQuarrie (2010). They argue that ad engagement can be measured in three dimensions: 1) immerse; 2) feel; 3) identify; 4) act. These dimensions are related to Brockmyer et al. (2009) conceptualization to measure "video game engagement". The authors argue that video game engagement is measured by the gamer's psychological experience. In this study, we will follow Brockmyer et al. (2009) to measure video game engagement by measuring the gamers' psychological experience in three different level of engagement: presence, flow, and psychological absorption.

2.3.5   The Impact of Video Game Engagement

2.3.5.1 Negative Impact

Video game has a dark side. Every day the news show how video game can affect children's life negatively. For example, 83% of parents limits their children playtime. Also, 87% of parents believe that parental controls are useful (ESA, 2014). Parents control and limit playtime because they see playing game as a detrimental activity. They always complain that their children play so much that they do not do well in school. To support that argument, Skroic, Teo and Neo (2009) found that there is an adverse relationship between games playtime and children's school performance.

Adolescents who play more violence games were more aggressive, violence, and do poor in school (Gentile, Lynch, Linder, and Walsh, 2004). The study argues that playing games promote harmful and aggressive behaviors even after control for sex. The authors suggest that parents should limit and control adolescents' games and times. Thus, playing game promotes negative behavior as some scholars argue.

Many previous studies have investigated the relationship between video gaming and bad behavior (Ferguson, Coulson, and Barnett, 2011; Skoric, Teo, and Neo, 2009). Violent video games are among the best-selling video games, and gamers play these games for a long time (Eastin, 2006; Granic, Lobel, Engels, and Rutger, 2014). Violent games have been criticized and praised both in society and in science. The biggest concern is that violent games could make gamers more aggressive. Also, many researchers found that playing violent games increase short-term aggressive cognitions, feelings, and behavioral intentions (Hartmann and Vorderer, 2010). So, is it safe to play video games? Some scholars argue that playing violent video game increase their enjoyment, and they feel no wrong committing virtual violence (Granic et al., 2014).

2.3.5.2 The Benefits of Playing Video Game

Although there is less research that focused on the advantages of playing video games, the functions and the benefits of play games have been studied for decades. Psychologists have emphasized the adaptive and positive function of play (Granic et al., 2014). For example, playing video game allow children to experience social setting, simulate alternative emotions and imagine themselves in different situations. Video game provides children an opportunity to reproduce real-life conflicts, and to work out resolutions for their pleasure. Gottman (1986) presents how children play games for emotional mastery in their real lives. Thus, there are links between children propensity to play and their development of cooperative skills, social competence, and peer acceptance.

Game engagement positively impacts children and adults as well. Games are used by teachers to teach children new concepts and by government, to train their teachers to teach more efficiently. Moreover, games are used as learning machines. Thus, video games also increase family closeness, activity involvement, positive school engagement, and positive mental health (Durkin and Barber, 2002).

Games are not for children anymore, and grownups are using games to improve their skills and performance. For example, Neys and Jansz (2010) found that people, who play political games, can transfer that knowledge into the real world. They argue that the people, who play political video games, can imagine themselves as politician. Therefore, games are used to develop new skills and knowledge.

In the medical field, games are used by surgeons to reduce errors (Rosser et al., 2007). The authors found that video game skill correlates with laparoscopic surgical skills and may be used as a tool to help train surgeons. Also, games are used as a distraction from pain (Raudenbush,

Kolks, McCombs, and Hamilton-Cotter, 2011). Patients, who play video games, will immersed and engaged in the games and forget their pain. Thus, games can help both doctors and patients who represent a positive impact of video games.

2.4   Motivation to Play Video Games

Schramm, Lyle and parker (1961) argue that in order to understand media's (e.g., video game) impact and effect on people, we have first to understand the people's motivations to use that media. Greenberg (1974) was the first author that use the theory in a television viewing and attitude. Greenberg identified and examined children's motivations to watch television. The author developed a scale to measure and analyze the television behavior, and the television attitude correlates for British children. The author found that age is a predictor of viewing. In general, young viewers watched television more often and identified more strongly with each of the television motivation. The author argues that arousal viewing was a reliable predictor for television viewing. The author also found that a positive correlation between strength of identification with most viewing motivations and amount of television viewing.

Many researchers in many disciplines tried to identify gamers' motivations to play video games. There are many motivations that can be identified depend on the way that we look at the activity itself (i.e., video game). Malone (1981) in his seminal paper argues that people are motivated to play video games for fantasy, challenge, and curiosity. Also, Selnow (1984) has identified five factors for people to play arcade games: games are preferable to human companions, teaches about people, provides companionship, provides activity/action, and offers solitude/escape.

Moreover, Wigand, Borstelmann and Boster (1985) looked at arcade games use. They found that people play arcade games for excitement, satisfaction, and tension reduction. Another

study by Myers (1990) argues that people play for challenge, social interaction, and enjoyment. Moreover, Giffiths (1991) studied video game addiction and proposed these motivation: arousal, social rewards, skill testing, displacement, and stress reduction. Recent researchers added psychological constructs of arousal, competition, diversion, and social interaction (Sherry et al., 2006).

Furthermore, Selnow (1984) investigates arcade games motivation for 244 10 to 14 years old. The author investigates arcade games because most games in early 1980s were arcade games. The author investigates the relationship between TV viewing and video game playing. The results show a complementary relationship between watching TV and playing game. The study suggests that games qualities provide an opportunity for gamers to escape life and have electronic friendship. Selnow used Greenberg's (1974) scale and added few dimensions that are specifics to games. The study found five arcade games motivation: (a) gameplay is preferable to human companions, (b) gameplay teaches about people, (c) gameplay provides companionship, (d) gameplay provides activities/action, and (e) gameplay provides solitude/escape (Selnow, 1984). Moreover, Wigand, Borstelmann, and Boster (1985) published a paper focusing on arcade games use. The authors surveyed 447 colleges and high school students' motivations to play arcade games. They found that the motivations for using arcade games were excitement, satisfaction of doing well, and tension reduction. All these factors were significantly related to the amount of gameplay.

In the 1990s, Myers (1990) found that there are four motivations to play games: fantasy, curiosity, challenge, and interactivity. All these motivations were significantly related to the amount of time play games. Phillips, Rolls, Rouse, and Griffiths (1995) used single-item measures of games' motivations for 806 students ranging from 11 to 16 years old. The motivations given to

play were "to pass the time," "to avoid doing other things," "to cheer oneself up," "enjoyment,"

and "other reasons." Children were playing between half and one hour per day. The study also

found that males gamers play more time and report feeling better after play than female gamers.

Moreover, Griffiths'(1991) focused on fruit machine playing because it is the most documented

form of gambling game played by adolescents. Game addiction added a motivation to play games:

a) arousal, b) social rewards, c) skill of the game, d) displacement, and e) stress reduction.

Sherry and Lucas (2003) developed a comprehensive player-based video game uses and

gratifications scale, using a methodology similar to the one used to develop Greenberg's (1974)

original television uses and gratifications scale. The scale identified gamers' motives that are

specifically non-arcade. The authors used focus group and interviews to identify six principal

motivations for play:

- Competition: to be the best player of the game

- Challenge: to push oneself to beat the game or get to the next highest level

- Social interaction: to play as a social experience with friends

- Diversion: to pass time or to alleviate boredom

- Fantasy: to do things that you cannot do in real life such as driving flying car or be a

  professional soccer player

- Arousal: to play because the game is exciting

In the following year, Lucas and Sherry (2004) used their scale in playing games. The authors

surveyed 544 young adults (313 women and 231 men) to investigate their motivations for video

game use, game genres preference, and the amount of time play games. The article examined the

gender differences (i.e., biological gender) in gamers' motivations. The authors found that female

gamers report less frequent play, less motivation to play in social situations, and less orientation

to game genres featuring competition and three-dimensional rotation than male gamers. Also, Greenberg, Sherry, Lachlan, Lucas, and Holmstrom (2010) distributed a questionnaire to 1242 (551 male and 685 female) 5th, 8th, and 11th grade public schools students to examine the uses and gratifications for males and female gamers. The authors also used the gamers' biological gender and found that male gamers play games more in any given week and preferred physically oriented video game than female gamers. Female gamers, on the other hand, preferred traditional and thoughtful games. Thus, gamers have different motivations to engage in games.

All above works and development of gamers' motivations ignore the relationship between gamers' motivations and game engagement. Hoffman and Novak (2009) argue that gamers' motivations expanded the flow model. Thus, this study is contributing to the flow theory by adding gamers' motivations and incorporating the social interaction in games.

2.5   Research Model and Hypotheses

2.5.1 Conceptual Model

This dissertation examines the determinants, and outcome of video game engagement. Please, see Figure 1 for more details. In this model, the level of video game engagement is predicted by the gamers' gender identity and motivations. Also, it is important to reiterate that gender identity include sex, psychological gender, and gender role attitudes. Video game engagement also has different levels: presence, flow, and psychological absorption. Also, gamers' motivations include challenge, competition, arousal, fantasy, social interaction, and diversion. Gamers gradually go through these different level of engagement. Gamers' individual differences would directly influence video game engagement. Also, gamers' motivations would directly affect video game engagement level. Video game engagement directly influences gamers' purchase intentions. Thus, the model depict the hypothesized model.
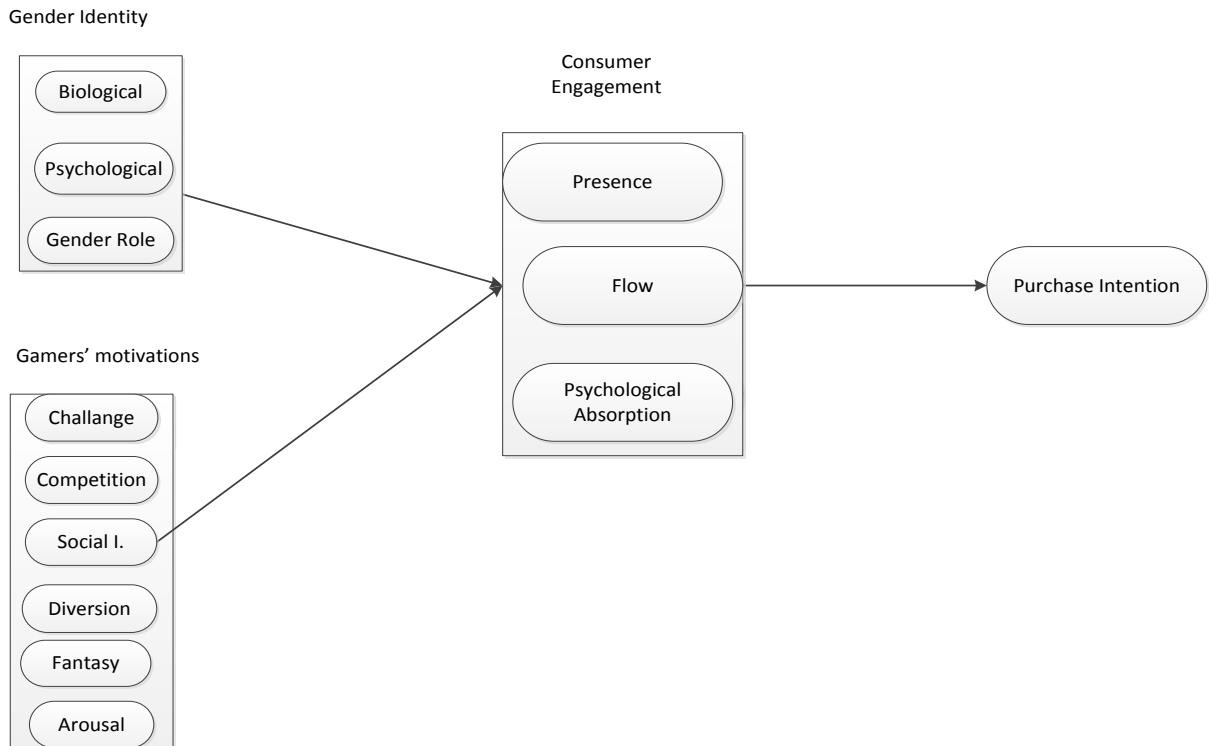
Figure 1. The hypothesized model.

2.5.2   Research Hypotheses

Figure 1 present the research model with all hypothesized relationships. The following section will further elaborate on the relationship between theses constructs and further explain the logic link between theses constructs.

2.5.2.1 Impact of Gender Identity on Video Game Engagement

The independent variable in this study is gender identity. Gender identities theories emphasize the important to look beyond biological sex to explore the impact of multiple gender effects because the observable differences between the sexes are multidimensional and not signal-dimension. That means men and women do not attribute all their roles, behaviors that are expected of their sex based on social acceptance stereotype (Bem, 1993; Deaux and Major, 1987; Spence,

1993). The multifactorial gender identity theory argues that gender identity includes psychological gender, sex, gender role attitudes.

As shown in Figure 1, gender identity affects video game engagement. Grohmann (2009) argues that customers describe brands and products based on their masculinity and femininity traits. Moreover, video game engagement has three levels that gamers can achieve: presence, flow, absorption (Brockmyer et al., 2009). The first level is "presence" that most, but not all video game players have experienced it. Players feel that they are part of the game environment, but they have some awareness of his/her surroundings. The second level is "flow" that is a term that have been used to describe the enjoyment feeling occur when the gamers achieve a balance between skills and the game challenge. There are fewer players who have experienced flow than presence. The last level of engagement is "psychological absorption" which is the highest level of engagement, and the players are not aware of the environment around him/her.

Men and women have different cognitive abilities. Meyers-Levy and Sternthal (1991) argue that men tend to use a selective and heuristic model, and men make a judgment on the basis of single cues while women are more likely to use comprehensive processing mode on the basis of all available cues. Palan et al. (2001) suggest that men are more likely to attend to object related cues, whereas women are more likely to focus on personal cues. Thus, men and women attend to a stimulus differently.

The gaming "product" continues to be dominated by its portrayal of male characters engaged in "manly" activities. The gaming industry continues primarily to target males in their twenties (Jenson and De Castell, 2010). Not surprisingly, the video game industry has been subjected to rightful misogynistic criticism insofar as it continues to view women as passive gamers and treat them primarily as sexual objects inside games (Jenson, 2005). Males have

advantage that the game are designed for their needs and desire. Also, that increase the chance that

the players can get the game and loose sense of surroundings.

H1: Men will have higher:
      H1a: Presence
      H1b: Flow
      H1c: Psychological absorption than women.

H2: Men will have higher purchase intention than women.
H3: Gamers' who are characterized by more masculine traits have a positive relationship with:
      H3a: Presence
      H3b: Flow
      H3c: Psychological absorption

H4: There is a positive relationship between traditional gender role attitude and:
      H4a: Presence
      H4b: Flow
      H4c: Psychological absorption

The past research found that gender, especially masculinity, play a significant role in

purchasing a product. Men buy more games in our context (Lucas and Sherry, 2004).Also, they

found a significant relationship between gender and product involvement (Fischer and Arnold,

1990, 1994). For instance, Gainer (1993) found that product involvement is a full mediator to

explain the relationship between gender and art attendance. That means the consumer

engagement such as presence, flow, and psychological absorption would mediate the relationship

between masculinity and purchase intention. We expected that there is a direct link between

masculinity and purchase intention. Also, a mediation effect for presence, flow, and

psychological absorption. Therefore, we hypothesized:

H5a: Presence mediation the relationship between masculinity and purchase intention.
H5b: Flow mediation the relationship between masculinity and purchase intention.
H5c: Psychological absorption mediation the relationship between masculinity and purchase
intention.

Traditional gender role and consumption patterns impact both men and women. For

example, traditional women would buy more products (i.e., video games) that aligned with their

gender. On other hand, traditional men would buy products (i.e., video games) that are closely related to their gender role (Fischer and Arnold, 1994). Also, most of games in the market today are targeted towards men that means that men have more offering than women to buy video games (Jenson and De Castell, 2010). That means men with more traditional gender role attitudes are more likely to buy video games. Also, men are more likely to play the video game and have more percentage of getting engaged in the game (Marchand and Hennig-Thurau, 2013; Sherry et al., 2006). Therefore, presence, flow, and psychological absorption mediate the relationship between traditional gender role attitude and purchase intention. We hypothesize the following:

H6a: Presence mediation the relationship between traditional gender role attitude and purchase intention.
H6b: Flow mediation the relationship between traditional gender role attitude and purchase intention.
H6c: Psychological absorption mediation the relationship between traditional gender role attitude and purchase intention.

2.5.2.2 The Impact of Gamers' Motivation on Video Game Engagement

2.5.2.2.1 Motivation

One of the early research that examined gamers' motivations to play games was the work of Malone (1981). He identified three motivations to play computer games: challenge, curiosity, and fantasy. These motivations are closely related to the concept of flow, a psychological state characterized by energized focus, full involvement, and intense attention to an activity (Czikszentmihalyi, 1990; L.-Y. Huang et al., 2014). Playing video game is the ideal prototype for flow state (D. Hoffman and Novak, 2009; Sherry, 2004). Also, consumer engagement, in general, is resulting from motivational drivers (Hollebeek et al., 2014; Van Doorn et al., 2010).

After few years, Selnow (1984) identified five motivational factors for people to play arcade games: games are preferable to human companions, teaches about people, provides

companionship, provides activity/action, and offers solitude/escape. Also, Wigand, Borstelmann and Boster (1985) looked at arcade game. They found that people play arcade games for excitement, satisfaction, and tension reduction. Another study by Myers (1990) argued that people play for a challenge, social interaction and enjoyment. Moreover, Giffiths (1991) studied video game addiction and proposed these gratifications: arousal, social rewards, skill testing, displacement, and stress reduction. Thus, consumers' motivation to play games would predict their level of engagement.

Not all players have equal mental capacity, needs, and desires. Thus, what is optimally challenging for one player may be either too easy or too hard for another player. Therefore, video games offer different satisfaction for different players based on their individual differences to master the game. The more motivation the gamers have to play the video game the more engaged they are in that activity. For example, a gamer want to play to get connect with other gamers and friends "social interaction motivation" and at the same time that gamer can have another motivation to win and be better than other players "competition motivation". Gamers can have more than one motivation to play games and the more motivation they have, the more engaged in that game. So, marketers can try to facilitate the consumer engagement in these games (D. Hoffman and Novak, 2009; Marchand and Hennig-Thurau, 2013).

H7: The number gamers' motivation drivers is positively related:
    H7a: Presence
    H7b: Flow
    H7c: Psychological absorption

2.5.2.2.2 Competition

Sherry et al. (2006) argued that competition is an important motivation that can be obtained from video games. Competition in video games refers to competing and proving that a gamer is more skilled than his/her peers. Also, gamers play games competitively to enjoy the

game itself. Researchers in the past have proven that male have higher competitiveness than female. However, if that is entirely true, we will not see a competitive female at any professional sport (Jenson and De Castell, 2010; Lucas and Sherry, 2004). Women and men have different motivation to compete at play games. The power of competition come from establishing a relative position in peer group's hierarchy. For example, gamers play to establish his position among his new friends. He will engage in the game and try to be good at it to impress his friends. Also, he might buy the game to practice at his personal time. Competition is the most important reason for people to play games with some genre such as sport and fighter (Sherry et al., 2006). Moreover, game can increase people's level of competitiveness which means that they will be more competitive in other social activities, and that winning becomes an important social goal for them (Greenberg et al., 2010). Competition is different from a challenge where the competition is against the player's personal best or the game itself (Lucas and Sherry, 2004). Thus, gamers, who are motivated by competition, will have be more engaged in the game and will purchase video game more.

H8: Gamers' competition motivation has a positive relationship with:
    H8a: Presence
    H8b: Flow
    H8c: Psychological absorption

Gamers translate being at the highest level of video game engagement (psychological absorption) to buy more games. The gamer who think that his skills does not match his friends' skills would purchase the game to play at home and be better at it. Also, for the gamers who are skilled at the game, competition can be a strong motivation to continue playing. Feeling presence at the game is important to buy the game in mind and continue playing. That means being presence mediate the relationship between gamers' competition motivation and purchase intention. Moreover, flow and psychological absorption would mediate the relationship between

gamers' competition motivation and purchase intention as we said for presence. Therefore, we hypothesize the following:

H9a: presence mediation the relationship between gamers' competition motivation and purchase intention.
H9b: flow mediation the relationship between gamers' competition motivation and purchase intention.
H9c: psychological absorption mediation the relationship between gamers' competition motivation and purchase intention.

2.5.2.2.3 Challenge

Challenge refers to being good at the activity that the person is doing (unlike competition where the competition is against other players). The game challenge can range from learning new language to lose weight. People challenge themselves to be better in certain activities. In the video game context, gamers challenge themselves to pass levels and advance in the game. Female may shy away from "masculine" games to avoid direct competition with them. However, they play these games to challenge themselves which they will feel more control (Lucas and Sherry, 2004). Challenge was one of the principal motivation that was identified early in playing video game (Malone, 1981; Myers, 1990). Gamers' flow state will be the balance between the game's challenge and the skills they have. If the game is more challenging than their skills, they will leave the game soon and have anxiety. Also, if the game does not challenge the gamer's skills, they will be bored, and they will leave the game. The ideal position is when the challenge in the game is close to the gamers skills. In that situation, gamers will reach flow state and will enjoy the game (Hoffman and Novak, 2009; Sherry 2004). Gamers at this level are engaged into the game. Thus, gamers' challenge motivation would predict their level of video game engagement (presence-flow-psychological absorption) and their purchase intention of video game.

H10: Gamers' Challenge motivation has a positive relationship with:

58

H10a: Presence
H10b: Flow
H10c: Psychological absorption

The gamers challenge motivation might draw female gamers to play and come back to some extent (Lucas and Sherry, 2004). Being engaged in a game would encourage gamers to buy that game that they are playing. That means gamers have to have that motivation to play first in order to play and be engaged in that game. Then, these gamers will be good at this game, and then they will buy more of that game. Therefore, feeling engaged in the game is mediating the relationship between the gamers' motivation and buying the game. We hypothesize the following:

H11a: Presence mediation the relationship between gamers' competition motivation and purchase intention.
H11b: Flow mediation the relationship between gamers' challenge motivation and purchase intention.
H11c: Psychological absorption mediation the relationship between gamers' challenge motivation and purchase intention.

2.5.2.2.4 Social Interaction

People seek social recognition and status within a society. People want to belong to a group as Maslow explain in the hierarchy of needs. The second level of Maslow' pyramid is the need to belong (Maslow, 1943). People can belong to a particular group by interacting with that group. So, people interact with a group of people to determine the compatibility that can occur between them and that group or individuals. Also, people seek social capital. That capital can substitute financial capital in some cases. For example, a person with high social capital might not need high financial capital (Duclos, Wan, and Jiang, 2013). In the video game context, gamers are motivated to interact with other gamers to gain social capital. Also, social interaction can be one of the main reason that many gamers' got to play games. For example, game console brought friends together and sleepovers. Many gamers use games to interact with friends and

learn about the personality of others (Sherry et al., 2006). That motivation would predicate their

level of engagement (presence- flow-psychological absorption) and their purchase intention.

H12: Gamers' social interaction motivation has a positive relationship with:
    H12a: Presence
    H12b: Flow
    H12c: Psychological absorption

Gamers will play games and reach different levels of video game engagement. The

different levels of game engagement would encourage gamers to buy more games. The first level

of engagement (e.g., presence) would encourage gamers to buy more games. Also, the second

level of engagement (e.g., flow) and the third level (psychological absorption) (Sherry et al.,

2006). Although research finds direct effect of gamers motivations on purchase intention and

online experience, in general (Sherry et al., 2006; Yee, 2006), we suggest that presence, flow,

and psychological absorption serve as mediators in the relationship between social interaction

motivation and purchase intention.

H13a: Presence mediation the relationship between gamers' social interaction motivation and
purchase intention.
H13b: Flow mediation the relationship between gamers' social interaction motivation and
purchase intention.
H13c: Psychological absorption mediation the relationship between gamers' social interaction
motivation and purchase intention.

2.5.2.2.5 Fantasy

In history, humans tried to fly and swim deep in the ocean. There is a small group of

people who attempted to do things that not everybody can do such as the Wright brothers, who

built a successful airplane. People also want to be zombies and be things that they cannot be in

real life. Movies and early generations of video game allow people to imagine things that they

are not such as flying, being a ghost, and being animals. However, games today allow gamers to

be somebody else and somewhere else. For example, gamers can create their ideal physical

avatar in a game and pretend to be that avatar. Also, people in simulation games (i.e.,

AeroWings, Pilotwings Resort) can fly airplane even though they are not pilots. Games give

gamers some fantasy of being something else such as being a professional NFL player, a pilot,

and even an opposite sex (Greenberg et al., 2010; Sherry et al., 2006). Gamers' level of fantasy

would predict their level of engagement (presence- flow- psychological absorption) and their

purchase intention.

H14: Gamers' fantasy motivation has positive relationship with:
    H14a: Presence
    H14b: Flow
    H14c: Psychological absorption

Games are hedonic product as Hirschman and Holboork (1982) include creates fantasy as

one important element to consider the activity as hedonic. The motivation by itself is not enough

to buy the game and continue playing. Although research finds direct effect of gamers

motivations on purchase intention and online experience, in general (Sherry et al., 2006; Yee,

2006), we suggest that presence, flow, and psychological absorption serve as mediators in the

relationship between fantasy motivation and purchase intention. Gamers need to have

motivations to play and to buy games. These motivations push them to play and buy more for the

game in hand.

H15a: Presence mediation the relationship between gamers' fantasy motivation and purchase
intention.
H15b: Flow mediation the relationship between gamers' fantasy motivation and purchase
intention.
H15c: Psychological absorption mediation the relationship between gamers' fantasy motivation
and purchase intention.

2.5.2.2.6 Diversion

Escapism (i.e., diversion) refers to avoiding real life problems by engaging in playing

games and other types of activities (Li, Liau, and Khoo, 2011). People differ in their escapism

level. Some people prefer to take long breaks to escape their lives while others prefer to take

short breaks to escape. Moreover, there is a significant difference between male and female

gamers regarding their game escapism (Yee, 2006). Thus, gamers' escape level predict their

level of engagement (i.e., presence- flow- psychological absorption) and purchase intention

(Frostling-Henningsson, 2009). Moreover, entertainment is viewed as an opportunity to escape

from the boredom of everyday life to a fantasy world of exciting and attractive characters.

Selnow (1984) argues that people play games to escape life. The author found that escapism is

significantly correlated with game engagement. Thus, gamers' motivation to escape would

predict gamers' level of engagement (presence- flow- psychological absorption)

H16: Gamers' diversion motivation has a positive relationship with:
    H16a: Presence
    H16b: Flow
    H16c: Psychological absorption

      Gamers want to avoid real life problems by engaging in playing video games. That means

they will run to play games when they have a rough day or sad news. Many researchers linked

gamers' diversion motivation to consumer attitude and online experience(Mollen and Wilson,

2010; Yee, 2006). In this study, we suggest that presence, flow, and psychological absorption

serve as mediators between gamers' diversion motivation and purchase intention.

H17a: Presence mediation the relationship between gamers' diversion motivation and purchase
intention.
H17b: Flow mediation the relationship between gamers' diversion motivation and purchase
intention.
H17c: Psychological absorption mediation the relationship between gamers' diversion
motivation and purchase intention.

2.5.2.2.7 Arousal

      Gamers play games for arousal and companionship. The level of excitement that gamers

are trying to reach is gamer's arousal level. Also, games stimulate emotions as a result of high

graphics and high overall of the game. Arousal was one of people's motivation to play games on arcade games (Griffiths, 1991). The level of arousal can be a high motivation to play games. Many games are fun to play. For example, one player would say "I got crazy when I am playing video game, sometimes. I am jumping up and down. Yelling and screaming. Things like that."(Sherry et al., 2006, p. 12). Gamers' excitement would impact their level of engagement. For example, if they have a high level of excitement, they might reach psychological absorption. On the other hand, if the gamer is not so excited about the game, he might rich to presence in the game. Although research finds direct effect of gamers motivations on purchase intention and online experience, in general (Sherry et al., 2006; Yee, 2006), we suggest that presence, flow, and psychological absorption serve as mediators in the relationship between arousal motivation and purchase intention. Thus, the level of gamers' excitement would predict the gamers' engagement (presence-flow- psychological absorption) and their intention to purchase.

H18: Gamers' arousal motivation has a positive relationship with:
   H18a: Presence
   H18b: Flow
   H18c: Psychological absorption
H19a: Presence mediation the relationship between gamers' arousal motivation and purchase intention.
H19b: Flow mediation the relationship between gamers' arousal motivation and purchase intention.
H19c: Psychological absorption mediation the relationship between gamers' arousal motivation and purchase intention.

2.5.2.3 Uses and Gratifications and Purchase Intention

Sales for computer and video game in the U.S. has grown rapidly in the past few years, and people spent $21.53 billion in 2013. Also, almost two third (59%) of Americans play video games (ESA, 2012). Gamers and players are motivated to buy games for a variety of reasons such as to gratify their motivations, to escape routine, and to reach higher flow state. A growing body of literature use the uses and gratifications approach to study the use of the Internet as a shopping

venue (Chen and Wells, 1999). The authors have identified factors that predict consumers' positive attitude towards a website such as entertainment, information, and organization. These factors will fulfill the customer needs for information and entertainment. UGT argues that individuals use any forms of mass communication to meet specific needs. If these motivations are gratified, it is likely that users will repeat the experience (Katz, Blumler, and Gurevitch, 1973).

This study is trying to explore gamers' motivations to play and buy games. Video games dominate the Internet usage, and people spend much time playing games. For example, the average person spent 10,000 hours of gaming by the age 21, which 24 hours less than they spend in a classroom (McGonigal, 2011). Moreover, the majority of spending in the *App Store* and *Google play* was devoted to games, even though consumers use smartphones for more than just playing games (Marchand and Hennig-Thurau, 2013). That means gamers will buy games that gratify them the most. UGT argues that gamers buy games to gratify one of these factors: to be a competitor, to challenge themselves and others, to socially interact with others, and to reach arousal. The more needs the game satisfy, the more the players are willing to spend time and money on it. For example, playing FIFA 2014 (soccer game) on PlayStation would satisfy the players' needs for challenge because they can play by themselves and challenge their skills to reach the next level or with in-person and/or online friends to satisfy more social interaction needs. According to ESA, 62% of the players play games with others, either in-person or online. Thus, we argue that players will buy games that particular their needs.

H20a: Presence has a positive relationship with video game purchase intention.
H20b: Flow has a positive relationship with video game purchase intention.
H20c: Psychological absorption has a positive relationship with video game purchase intention.

2.5.2.4 Genre of the Video Game Moderate Uses and Gratifications and Purchase Intention

There are many genres of video games. We identified thirteen general genres that video game industry is familiar with. We have followed previous literature on how these genres are separated (Lucas and Sherry 2004): Strategy (i.e. free cell), Puzzle, Fantasy/role playing, action/adventure, Sport, Simulation, Racing/speed, Arcade, Card/dice (i.e., Solitaire), Quiz/Trivia (i.e., Jeopardy),Classis board games (i.e., Monopoly), Shooter, and Fighter (i.e., Mortal Combat). Please, see Table 3 for more details. Gamers play different types of games that impact their buying intention. Some gamers prefer to play action and fist-shooter games, whereas other gamers prefer to play puzzle and quiz games. Players might have the same motivation to play a game "competition." However, they are playing different genre that strengthen or weaken their purchase decision.

For example, a player who is motivated to play by competition and play Call of Duty: Advance Warfare would have different purchase intention to video game than a player who is motivated by competition and play Monopoly. The players who play Call of Duty have to invest greater time to reach a competitive position. For example, the Call of Duty players collectively played 475,000 years of gameplay over six-year history of the game that means 2.85 million man-years (Fung, 2013). Thus, the different genres have moderation effect between the players' motivation and purchase intention.

Table 4

Video Game Genres and Deceptions Modified and Updated Based on Lucas and Sherry (2004)

Genre	Description	Examples
Strategy	Games that use strategic planning skills	Command and Conquer, Civilization, Chess
Puzzle	Games that can be solved, no element of chance	Tetris, Free Call, Bomberman
Fantasy/role playing	Games that let you assume a character role	Final Fantasy, Legend of Zelda, Diablo
Action/adventure	Game where you go on an adventure	Resident Evil, Tomb Raider
Sports	Games based on athletic teams and events	Tony Hawk's Pro Skater, NBA Jam
Simulation	Games where you create a simulation	Roller-coaster Tycoon, SimCity
Racing/speed	games that focus on going fast	Super Mario Kart, Grand Turismo, Need for Speed
Shooter	Game where you shoot other characters	Quake, Duke Nukem, Call of Duty
Fighter	Game that focus on martial arts or hand-to-hand combat	Mortal Combat, Tekken, Virtual Fighter
Arcade	Games based on Original arcade games	Packman, Frogger, Pinball
Card/dice	Games that have an element of chance	Solitaire, Poker
Quiz/trivia	Games that test knowledge	Jeopardy, Who Wants to be a Millionaire
Classic board games	Video game versions of old-time favorites	Monopoly, Checkers

CHAPTER 3

METHODOLOGY

This chapter discusses the methodology that been used to test the research hypotheses and the model proposed in Chapter 2. First, we will present the purpose of the study and type of investigation. Then, the author will explain the study setting and the research interference. After that, we will present the unit of analysis and sample design. The measurement will come next. We will present the measurement sources and reliability. Also, we will present any modification that we added to the scale that we used to match the study purpose. Then, we will present the pretest design and results.

3.1   Purpose of the Study and Types of Investigation

This study examines the relationship between gender identity, motivations, and video game engagement, as well as the effect of game genres. The Uses and Gratifications Theory (UGT) is used to explain the players' behavior and patterns. Hypothesis testing is undertaken to use gender identity constructs as predictors and explain the variance in games play patterns. The research model illustrated the predicted relationships (See Figure 1). We carefully put the model to ensure that the research follows a rational process. The core tenet of the proposed model is predominantly interested in delineating the cause and effect relationship between gender and purchase intention. This study acknowledges that there are potentials impact of other factors outside the scope of the investigation, and the lack of control over the constructs under investigation.

3.2   Study Setting and the Research Interference

The study is considered to represent a field study in games product. We examine gamers' individual differences, and how that would affect the players' behavior and pattern. Also, we used gamers' motivations to understand their preferences and behavior. This study has no manipulation

of constructs/variables. Thus, this study is characterized by non-contrived setting without any interference from the researcher.

3.3.   Unit of Analysis

The unit of analysis refers to the primary entity that we are analyzing. Also, it is the level of aggregation of the data collected during subsequent data analysis stage (Hair, Tatham, Anderson, and Black, 2006). The primary interest of this study is to understand the players' behavior and patterns. The study collected data from each participant and treated each participant as data source. Also, the individual data is aggregated into male/female group. Thus, units of analysis in this study include individuals and groups.

3.4   Sampling Design

3.4.1   Sampling Frame

The population of interest for this study is the people who play video games for escape, competition, challenge, and for social interaction reasons. The data from EAS suggest that 59% in the U.S. play video game (ESA, 2012). We excluded participants who do not play because they are not part of this study. We ask the participants about their playing behavior and playing time. We first pretest the model with a random representative sample from a major southwest university in the U.S. The student's sample is appropriate sample for this study, because 1) the average age for student is appropriate to play games, 2) students have more leisure time than other groups that given the opportunity to play games, and 3) many universities and students unions have console in-house that increase the student chance to play.

The respondents were recruited by using class announcements to participate. Although the data was collected using convenient sampling, the authors believe that the sample is appropriate for the study. Responses were collected through Qualtrics, where participants in the survey were

asked about their psychological gender, gender role attitudes, video game engagement, uses and gratifications, video game play patterns and their purchase intention, and finally demographics.

To generalize the results that we got from the pretest, we test the model in a larger population. We test the model in Amazon Mechanical Turk (MTurk). The website is a platform where researchers can put their survey, and potential participants can take the survey for some rewards. MTurk provides easy, quick, and inexpensive access to online participants (Buhrmester, Kwang, and Gosling, 2011; Horton, Rand, and Zeckhauser, 2011; Mason and Suri, 2012; Paolacci, Chandler, and Ipeirotis, 2010). Participants were paid $0.5, and we restricted the participants to be U.S.-based participants who had played video games by adding screening question the participants who did not qualify for the survey were excluded.

The respondents were recruited by using MTurk announcements to participate. The first question in the survey as a screening question 'do you play video games?' If the participants do not play video games, then he/she will get a thank you screen. On the other hand, if the participant plays video games, then he will continue answering the survey. Responses were collected through Qualtrics, where participants in the survey were asked about their psychological gender, gender role attitudes, video game engagement, uses and gratifications, video game play patterns and their purchase intention, and finally demographics.

3.5   Measurement

Measurement of each construct in the theoretical framework is an integral part of the research design. Measurement is an assignment of numerals to objects or events in the broadest sense (Stevens 1968). The behavioral dimensions and properties that concept offer, the researcher can translate these into observable and measurable elements (Hair et al., 2006). In regard to this study, measurement of gender identity, video game engagement, motivations, and purchase

intention were required. Some members of the dissertation committee recommended adding two constructs to improve the dissertation generalizability and broaden the implication of the study. The first construct is time constraints, and the second construct is problem recognition.

3.5.1 Measurement of Independent Variables

Measurement scales for all the independent variables in this study have been adapted from extant previous studies. The scales had been used in different response format. To ensure consistency of all scale, we convert all scale items to six-point Likert-type-scales, ranging from (1) strongly disagree to (6) strongly agree. The six-point format can ensure better reliability and force respondents to make a choice rather than remain neutral (Oaster, 1989). The scales used in the study are discussed below.

3.5.1.1 Sex

Sex was measured as a nominal variable (male and female). This question appears in the demographic section. Marchand and Hennig-Thurau (2013) suggest that early console generations were developed for male and children. Also, Who play games make a difference as Jenson (2005) emphasized. However, today almost half of the players are female. Thus, men and women might make the buying decision equally, and that is not true. The research is diving into this dilemma where half of the players are female, and the gaming industry is built for male users. This is a classic marketing problem that is missing the large consumers and chasing the profitable consumers. In addition, Lucas and Sherry (2004) found that male and female have different motivation to play video games. Lucas and Sherry argue that male play for competition that means they play to beat the other player and they might stay longer than they want just to beat other player. Male gamers do play for other motivations, but they play mostly for the competition motivation the most. On the other hand, female play games for social interaction which means they

play when they are surrounded by other people who want to play. The setting of the pretest that we used revealed that female gamer play to connect with other people in their circle. In this research, we are going to shed lights on whom the players' sex might play a role in their engagement.

3.5.1.2 Psychological Gender

Psychological gender was measured using a scale that used by Campbell, Gillaspy, and Thompson (1997). The scale was developed in the context of consumer behavior and has been shown to be more reliable than other scales (Palan, 2001). The scale is modified the version of Bem's Sex Role Inventory (BSRI) (Bem, 1981).

The respondents indicated how well each of the 10 masculine and 10 feminine characteristics describes them on a seven-point scale, (1) indicates "never or almost never true" and (7) indicates "always or almost always true". The masculine and feminine scales represented two orthogonal constructs. Reliability for masculine scale was 0.94, and reliability for feminine scale was 0.88. Both masculinity and femininity scale were converted to a six-point Likert agree-disagree format to be consistent with other measures.

3.5.1.3 Gender Role Attitude

The 10-items brief version of the attitude toward women scale was developed by Ashmore, Del Boca, and Bilder (1995). The scale is widely used, and it had been applied to consumer behavior studies (Ulrich, 2013). The reliability for this scale was 0.84. The scale was modified to a six-point Likert scale format to be consistent with other scales. The appendix presents all the scales used in this study.

3.5.1.4 Time Played

We follow Lucas and Sherry (2004) to measure the time spent in playing video game during a typical week. Respondents completed a grid that divided each day into four parts "from when you wake up until noon," "from noon until 6 p.m.," "after 6 p.m., to midnight," and "after midnight to 6 a.m."). The total number of hours played in a typical week was calculated by summing all part figures.

3.5.1.5 Genres

The game genres in this study were identified by consulting previous research (e.g., Lucas and Sherry, 2004; Marchand and Hennig-Thurau, 2013), video game magazines, popular gaming websites, and video game departments of retail stores and video game rental stores. Thirteen genres were identified: puzzle, action/adventure, sports, fantasy/role playing, simulation, racing/speed, fighter, arcade, strategy, card/dice, quiz/trivia, shooter, and classic board games (please look at table 3). Respondents indicated their liking of each genre ranging from "1" strongly dislike to "7" strongly like.

3.5.1.6 Uses and Gratifications: Gamers' Motivations

Gamers' motivation scale (uses and gratifications) has 21 items, and it was developed by Sherry and Lucas (2004). The scale measured six video game uses and gratifications: competition with reliability of 0.86 (e.g., "I got upset when I lose to my friend"); challenge with reliability of 0.79 (e.g., "I feel prude when I master an aspect a game"); social interaction with reliability of 0.81 (e.g., "I play with someone because I cannot play by myself"); diversion with reliability of 0.89 (e.g., "I play video game instead of other things I should be doing"); fantasy with reliability of 0.88 (e.g., "I enjoy the excitement of assuming an alter ego in a game"); and arousal with reliability of 0.85 (e.g., "I play video game because they stimulate my emotions"). The seven-point

Likert format was modified into a six-point Likert format to be consistent with other measures in the study.

3.5.1.7 Time Constraints

Time constraints are defined as a form of stress expressed in the perception of being hurried or rushed (Denton, 1994). In purchase decision context, time constraint is defined as shopping stress (Xu-Priour, Cliquet, and Fu, 2012). Time constraints is a factor that cause shopping stress. For example, Chowdhury, Ratneshwar, and Mohanty (2009) found that time constraints influence consumer's online shopping positively. The time constraint was measured on a three-item construct taken from Srinivasan and Ratchford (1991) with an acceptable reliability 0.83 (Nunnally, 1978). A sample of the items is, 'I seem to be busier than most people, I know'. The statements were converted to 6-pont Likert scale, ranging from 'strongly agree' to 'strongly disagree' to be consistent with other measures in the study.

3.5.1.8 Problem Recognition

Problem recognition can be defined as excessive use of video games resulting in different negative behavior (Porter, Starcevic, Berle, and Fenech, 2010). Playing video game is an addictive behavior for some people as some researchers suggested. That means gamers might play more than what they intended to play, and they might lose some important relationship in their lives. We used a scale that was developed by Tejeiro Salguero and Morán (2002). The scale has three dichotomous items that measure the person's video game use, and whether gamers realize that they play video games too much. Then, nine items are presented to measure the gamers playing problems. The scale has an acceptable internal consistency with 0.69 Cronbach's alpha (Nunnally, 1978). A sample of the items is 'When I can't use the video games, I get restless or irritable'. The statements were converted to 6-point Likert scale, ranging from 'strongly agree' to 'strongly disagree'.

3.5.2   Measurement of Dependent Variables

The dependent variable in this study is purchase intentions. All the variables included in the study were adapted from extent literature review. All of dependent variables were converted to six-point Likert scale to ensure consistency (Baumgartner and Steenkamp, 2001; Oaster, 1989).

3.5.2.1 Video Game Engagement

Video game engagement scale measures gamer presence, flow, and psychological absorption state. We used Game Engagement scale that was developed by Brockmyer et al. (2009). The scale has 19 items. The engagement scale measures the gamer's engagement level into the game. Sample of items in the scale are "I lose track of time" and "I play longer than I meant to". For this reason, this scale captures the gamer's level of engagement. The scale has acceptable internal consistency (0.85) (Brockmyer et al., 2009). To be consistent with other scales in this study, we modified the five-point Likert format into a six-point Likert format. We also consulted Hoffman and Novak (2009) to measure flow.

3.5.2.2 Video Game Purchase Intention

Behavioral intention to purchase video game is the dependent variable in this study. Video game purchase intention was measured using four items to measure gamers' intention to purchase video game, in general. We used online purchase intention, which is closely related to games purchase intention because customers behave online similarly regardless of the product. Sample of items in the scale are "I intend to purchase video game title between now in the near future (i.e. the holiday season)" and "I will definitely purchase video game title from now and in the near future (i.e. the holiday season)". The scale captures the gamer's video game intention. The scale had a good composite reliability (0.94) (Korzaan, 2003). To be consistent with other scales in this study, we modified the seven-point Likert format into a six-point Likert format.

3.6   Instrument Pertest

We have conducted a pre-test for the instrument in this study. The pretest used convenience sample from a major southwest university in the U.S. The primary purpose of the pre-test is to test the reliability and validity of the measurement scales, and then purify the measures. We had 200 respondents. Pre-testing the instrument is an important process in the marketing literature to advance marketing as a science (Peter, 1981). We excluded 45 participants who did not play any video game. Their responses were removed from the analysis because they have not felt engaged in that activity.

It is important to establish the reliability and validity of the measures. Reliability means that the scale can consistently measure phenomenon. Also, the scale can measures the phenomenon in different conditions and circumstances (Nunnally, 1978). There are different methods to test the reliability of the measures. In this study, we used internal consistency method through a popular approach in marketing literature: Cronbach's coefficient that provides the mean reliability for all the possible split-halves for the particular scale (Churchill Jr, 1979).

A high Cronbach alpha ($\alpha >0.70$) means the scale has internal consistency (Nunnally, 1978). The Cronbach's alpha can determine if the researcher needs to retain or delete the item, along with subjective examination of the importance of the item. In the gender identity measure, one item was removed from feminine scale, four items were deleted from masculine scale, one item from gamers' social interaction, one item from gamers' diversion motivation, two items were deleted from gender role attitudes scale and the gamer's challenge motivation construct were deleted. After data purification, all the scales remain satisfactory reliability, with the lowest reliability of 0.8.

Validity is another important issue in this study. Validity tests whether the measurements measure what is supposed to measure (Peter 1981). Also, validity means how the measurement fit the theories around which the study is designed (Hair et al., 2006). We examined the construct convergent and discriminant validity. Convergent validity was investigated by item-total correlations in confirmatory factor analysis. Since all item-total correlations exceed the recommended criterion of 0.4, all constructs in the study had adequate levels of convergent validity.

On the other hand, discriminant validity was applied to investigate if the scale is unique and different from other scales that been used. We can test discriminant validity by checking whether the correlation between two scales is low than the reliability of each scale. Looking at the coefficient alpha of the constructs, table 5 provided evidence of the discriminant validity of a measure (Peter and Churchill Jr, 1986).

Table 5

Discriminant Validity of Constructs in Pretest

Correlations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Femininity	0.91													
2. Masculinity	0.24	0.89												
3. Gender Role Attitude	0.01	0.17	0.86											
4. Self-Expression	-0.14	0.04	0.37	0.93										
5. Others Perspective	0.21	0.28	0.26	0.08	0.85									
6. Purchase Intention	-0.23	0.07	0.29	0.49	0.10	0.96								
7. Challenge UGT	0.22	0.08	0.14	0.33	0.19	0.40	0.87							
8. Competition UGT	0.01	0.18	0.34	0.35	0.19	0.35	0.60	0.84						
9. Social UGT	-0.03	0.21	0.31	0.48	0.28	0.47	0.47	0.52	0.81					
10. Fantasy UGT	-0.13	-0.07	0.21	0.50	0.10	0.42	0.45	0.42	0.57	0.86				
11. Diversion UGT	-0.10	-0.09	0.29	0.57	0.02	0.45	0.35	0.40	0.56	0.60	0.91			
12. Presence CE	-0.03	0.14	0.23	0.50	0.17	0.42	0.54	0.43	0.45	0.40	0.41	0.91		
13. Flow CE	-0.11	0.08	0.24	0.45	0.16	0.28	0.32	0.28	0.21	0.29	0.26	0.67	0.88	
14.Absorption CE	-0.09	-0.08	0.16	0.50	0.12	0.31	0.27	0.31	0.34	0.47	0.44	0.59	0.64	0.80
15. Average time play	-0.17	0.14	0.25	0.48	0.18	0.48	0.25	0.31	0.45	0.35	0.45	0.40	0.19	0.26

3.7   Data Collection Methodsn

This study used self-administrated questionnaire to collect the data. We used survey to test the proposed model. Questionnaire is a good fit for the purpose of this study. First, gender identity and video game used survey to capture these concepts (e.g., Brockmyer et al., 2009; Fischer and Arnold, 1990). Second, the current study focuses on understanding the relationship antecedents and the outcomes of co-creation value in the context of video game play, survey is an appropriate technique for collecting data to assess interrelationships (Hair et al., 2006). Third, survey can be generalized and use a wide range of the population, whereas experimental design focus in using a small portion of the population. Lastly, survey is more efficient in understanding facts of people, including beliefs, opinions, attitudes, motivation, and behavior, than experiment (Kerlinger and Lee, 2000).

The data collected using Qualtrics (online survey website). The researcher provided a link to participants. The online surveys are easy to administer, relatively inexpensive, and can be delivered fast (Hair et al., 2006). Also, online surveys fit the population in the study who are young and play the video game. Thus, online survey is appropriate for the study in hand.

3.8   Questionnaire Design

Questionnaires are an efficient data collection method when a study has a reliable and valid measures (Hair et al., 2006). The participants were given questions about their video game engagement, time they play, type of game they play, gender identity. Respondents are asked to rate the agreement in scale of a 6-point Likert scale. Also, the study asks the participants to report their demographic information such as age, income, and education level.

3.9   Data Analysis Technique

Structural Equation Modeling (SEM) was used to test the hypotheses. The reason we choose SEM is because it takes confirmatory approach rather than exploratory approach (Byrne, 1998; Hair et al., 2006), and all of the measurements that we have used are adapted measures. Therefore, SEM is better to test the hypotheses proposed. Also, SEM allows to test the relationship between the constructs simultaneously and to examine direct and indirect effects. Most importantly, SEM allows the researchers to test a wide variety of hypotheses. Modeling using the SPSS-AMOS 17.0. (Chicago, IL) program to test the hypothesized relationship.

CHAPTER 4

ANALYSIS AND RESULTS

This dissertation investigates the relationship between a broadened conceptualization of

consumers' gender identity and purchase intention in the context of buying and playing video

games. Also, this chapter presents the important of the gamers' motivations in playing video

game in making the buying decisions. Gamers' motivations do have a different impact on the

buying decision. Gamer motivations to play video games include diversion, challenge,

competition, social interaction, fantasy, and arousal. This chapter presents the respondent profile,

psychometrics, and data analysis underlying this research. We structured this chapter as the

following: first, detailed report about the respondents and how they responded to the survey.

Second, psychometric analysis includes an assessment of the internal consistency of the

measures used, convergent, and discriminant validity. Finally, we report the analysis of each

hypothesized relationship in the proposed model.

4.1   Respondent Profile

4.1.1   Early and late Response

We used self-administered questionnaire in this study, and we collected the data using

Amazon Mechanical Turk (hereafter, Mturk). We have 502 usable data points. The population of

interest for this study is the Millennials Generation. There are no exact dates when this

generation starts and ends. Researchers use birth years ranging from the early 1980s to the early

2000s (Ng, Schweitzer, and Lyons, 2010). The Millennials Generation is the highest age group

that play and buy video games (ESA, 2012). The final sample consisted of 502 respondents that

live in the United States.

The data collected by paying a small incentive for the respondents to participate. The first question on the survey was a screening question where we ask participants "Do you play video games?" the participants who answered "No" to that question were excluded from further analysis. The total participants who attempted to answer the survey were 566 participants and the final usable data were 502 respondents that mean that we have 90% response rate.

The participants who completed the survey submitted a work request to get their incentive ($0.5). Participants are not only motivated by money to answer the questionnaire, but also they are interested in playing video games that make them a representative sample for this study. Amazon Workers (participants) have a large pool of surveys that they can choose from and due to their interest they choose the most appropriate study.

Looking at Table 6 there is no difference between early and late respondent. The percentage of participants that participate early or late is not different for gender: $X^2(1, N = 100) = 0.04$, p-value = 0.841. Also, the participant age and education did not change from early and late participants. The Chi-Square were: $X^2(1, N = 100) = 13.01$, p-value = 0.162 for age groups, and $X^2(1, N = 100) = 4.27$, p-value = 0.370 for education.

4.1.2   Non-Response Error

We tested the non-response error using t-test and Analysis of Variance (hereafter, ANOVA). We compared early and later respondents. The first 50 (early respondents) and the last 50 respondents (late respondents) were compared to demographic values (i.e. age, gender) in the survey population (Armstrong and Overton, 1977). The results indicate that there was no response bias. The Table 6 details the results.

Table 6

Chi-Square: Early and Late Respondent Analysis

Crosstab	Early	Late	Total
Male	24	25	49
Female	26	25	51
Total	50	50	100
Age			
18-21 years-old	1	4	5
22-25 years old	11	16	27
25-28 years-old	10	7	17
29-32 years-old	4	4	8
33-35 years-old	7	5	12
36-39 years-old	2	3	5
40-43 years-old	2	5	7
44-47 years-old	3	5	8
48-50 years-old	2	0	2
>= 50 years-old	8	1	9
Total	50	50	100
Education			
High School Diploma	15	15	30
Associate Arts	8	5	13
Bachelor's Degree	22	24	46
Master Degree	5	3	8
Ph.D. Degree	0	3	3
Total	50	50	100

4.1.3   Demographics

The demographics are important to understand the respondents' background and to compare them with the general public. We want the sample that been used in this study to be as close as possible to the general public that play video games. In this section, we will report these demographics information of the participants.

4.1.3.1 Sex

      The study aimed to have equal participants from each gender because sex is an important dimension of consumers' gender identity (physiological gender, psychological gender, gender role). The equal distribution of male and female respondents provides a solid foundation to understand the role of gender in playing video games.

Table 7

The Distribution of Gender

#	Answer		Response	%
1	Male		250	50%
2	Female		252	50%
	Total		502	100%

4.1.3.2 Age

      The population of interest in the study is the Millennials Generation because the average gamer age is 30 years (ESA, 2014). The participants who belong to the Millennials Generation is 61% of the total participants in this study. The participants who are between 18-24 years olds were 35 participants (7% of the total participants) because there are not many of them using Mturk. The second age group is the participants who are between 22-25 years old and they were 102 (20% of the total participants). The third age group of participants are those who are between 25-28 years old, and they were 80 participants (16% of the total participants). The fourth significant age group is the participants who are between 29-32 years old, and they were 90 participants (18% of the total participants).

Table 8

The Distribution of Age Group
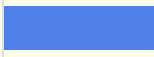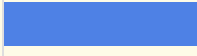
Age Group	Response	%
18 - 21 years-old	35	7%
22 - 25 years-old	102	20%
25 - 28 years-old	80	16%
29 - 32 years-old	90	18%
33 - 35 years-old	54	11%
36 - 39 years-old	26	5%
40-43 years-old	30	6%
44-47 years-old	28	5%
48-50 years-old	14	3%
≥ 50 years-old	43	9%
Total	502	100%

4.1.3.3 Highest Level of Education

The level of education might be a valuable information to indicate the amount of time the participant has to play video games. Each level of education has its level of responsibilities. For example, the participants who hold a Ph.D. degree might have less time to play video games, in general, than the participants who have High School Diploma. Therefore, each level of education might be a factor that we look at in future studies. In this study, 31% of the participants have High school Diploma, and 40% of them have a Bachelor's degree. In this pool of participants, only 2% of them have Ph.D. degree.

Table 9

Highest Education Level of Respondents

#	Answer		Response	%
1	High School Diploma		156	31%
2	Associate of Arts Degree		81	16%
3	Bachelor's degree		202	40%
4	Master's Degree		53	11%
5	Ph.D. degree		10	2%
	Total		502	100%

4.1.4   The Participants' Representation

In this survey, we collected the data by using Mturk, and we aimed to have a

representative sample across the United States. Due to the extreme weather conditions that affect

the northeast state in winter time this year (2015) cause the people to stay home, and that might

increase their level of participation in Mturk. We have a nice representation of consumers across

the United States. For example, the highest number of participants came from California (50

participants) which make sense due to the high population in that state (38 million) (Census,

2012). The second highest number of participants came from Florida (46 participants), and this

state also ranked the fourth largest state in the United States with 19.3 million people (Census,

2012). The next highest participants came from New York with 39 participants. Then, the state

of Texas and Pennsylvania came after that with 25 and 24 participants respectively.
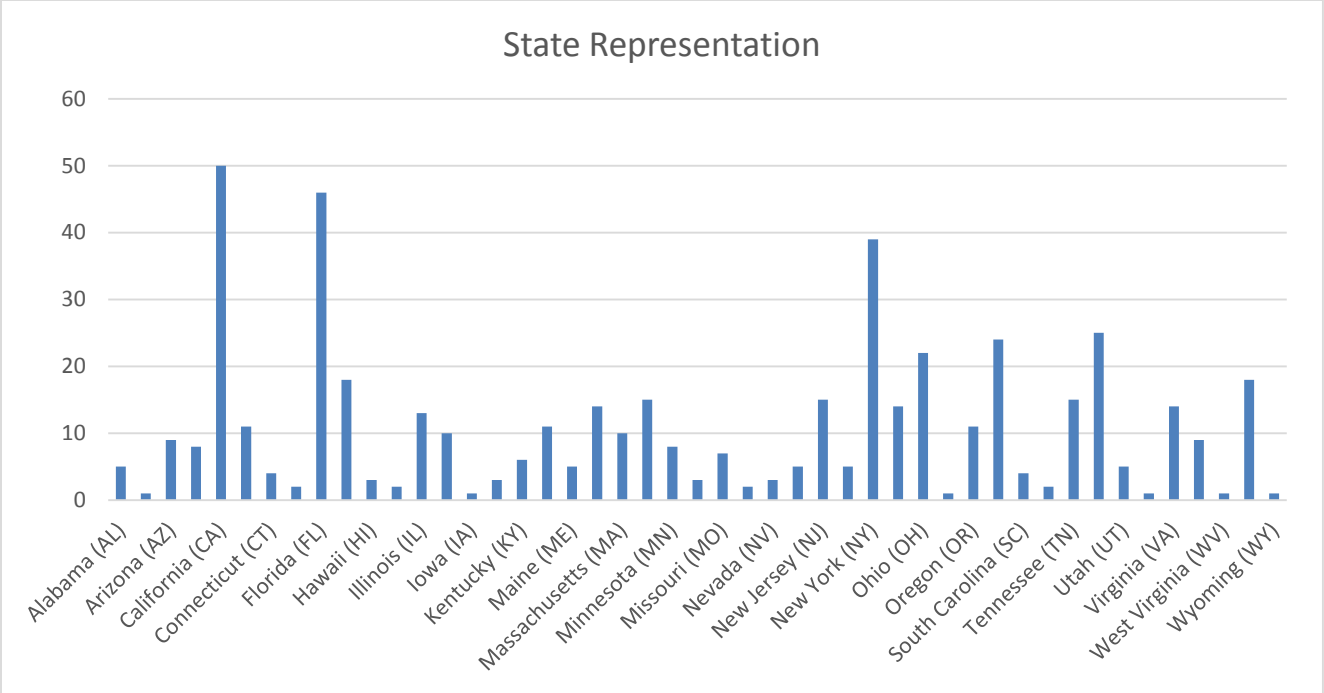
Figure 2. The location of participants.

4.1.5   Time Played

We asked the participants about the time they play video games. The average time played for playing video game among this sample population was 8.1 hours a week. The average time played in this study is consistent with previous research 8.5 hours a week with a range of 0 to 72 hours (Lucas and Sherry, 2004; Marchand and Hennig-Thurau, 2013). We asked the participants about their time played on each device that can be played such as mobile and handheld devices. Figure 2 details the numbers. Playing console games takes most of the participants' playing time and playing mobile games is in second place. This result is aligned with the video game industry and previous research. For example, Marchand and Hennig-Thurau (2013) mentioned that the yearly global software revenue come from playing console (61%) and mobile games (20%).

Table 10

Time Played per Device per Week

Question	0- Don't Play	1-3 hours	4-6 hours	7-9 hours	10-12 hours	≥ 13 hours	Total Responses	Mean
PC Games	189	185	66	39	24	30	533	2.28
Mobile Games (i.e. IPhone)	116	274	88	28	14	13	533	2.23
Handheld Games (i.e. Nintendo - 3DS)	412	88	21	5	4	3	533	1.33
Console Games (PlayStation 3)	151	185	98	37	20	42	533	2.47

4.2 Measures Assessment

We used the two-step approach that is suggested by Anderson and Gerbing (1988). The first step is to verify an acceptable measurement model, and then build on the measurement model to predict causal relationships that were proposed in the study. This section address the measurement model issues.

4.2.1 Test of Normality

We first have to test the normality of the data that is a fundamental assumption in multivariate analysis. The normal distribution of the data make the data valid, and when the distribution is large then we cannot generalized the data in hand. Therefore, the first step in multivariate analysis is to test for the normal distribution of the data. Kurtosis and skewness are two measurements that can test the normality of the data. Kurtosis tests the peakedness or flatness of the data while skewness test the balance of the distribution. A negative kurtosis value indicates a flatter distribution, and positive value means peaked on the data. Also, a positive skewness value shows a left distribution, and a negative value indicates a rightwards shift (Hair

et al., 2006). With a consideration of the sample size impact, we concluded that the assumption

of normality is not violated (Table 11).

Table 11

Results of Skewness and Kurtosis Test

	N	Mean	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
Femininity	501	4.702	0.935	-0.707	0.109	0.473	0.218
Masculinity	501	4.173	0.874	-0.255	0.109	-0.1	0.218
Gender Role TR	501	3.135	1.18	0.207	0.109	-0.427	0.218
Gender Role EG	501	4.150	1.085	-0.68	0.109	0.25	0.218
UGT Competition	501	3.318	1.307	0.028	0.109	-0.767	0.218
UGT Challenge	501	4.706	0.787	-0.607	0.109	1.059	0.218
UGT Fantasy	501	3.694	1.491	-0.365	0.109	-0.862	0.218
UGT Escape	501	3.209	1.300	0.082	0.109	-0.763	0.218
UGT Social	501	3.636	1.514	-0.318	0.109	-0.986	0.218
UGT Arousal	501	4.120	1.185	-0.758	0.109	0.505	0.218
Absorption	501	3.072	1.298	0.24	0.109	-0.665	0.218
Flow	501	3.958	1.187	-0.501	0.109	0.068	0.218
Presence	501	4.586	0.966	-0.576	0.109	0.362	0.218
Purchase Intention	501	3.942	1.415	-0.394	0.109	-0.704	0.218
Time Pressure	501	3.970	1.193	-0.393	0.109	-0.316	0.218
Problem Recognition	501	2.649	1.144	0.604	0.109	-0.117	0.218

4.2.2   Exploratory Factor Analysis

All measurement scales that we used in this study were purified prior to confirmatory

factor analysis. The criterion to delete items were based on the three rules: 1) high cross-

loadings on two factors; 2) lower than 0.3 on item-correlation; 3) subjective assessment of the

importance of the item for the capturing the concept that we are trying to measure (Churchill Jr,

1979; Nunnally, 1978). As a result, 17 items were deleted from the study (see Appendix A).

Please, see the below tables (Tables 12-16) for further details about the factor analysis.

Table 12

Exploratory Factor Analysis Result (Factor Loadings): Feminine, Masculine, Gender Role Attitude

Items	Feminine	Masculine	TR Gender	EG Gender
Compassionate	0.880			
Warm	0.862			
Sensitive to needs of others	0.855			
Affectionate	0.849			
Tender	0.848			
Understanding	0.843			
Sympathetic	0.835			
Eager to soothe hurt feelings	0.781			
Gentle	0.763			
Assertive		0.828		
Strong personality		0.816		
Dominant		0.799		
Willing to take a stand		0.724		
Forceful		0.712		
Have leadership abilities		0.695		
Aggressive		0.66		
Defend my own beliefs		0.629		
Willing to take risks		0.628		
Compared to men, women tend to be weak			0.822	
Compared to men, women tend to be gullible			0.811	
Men are more independent than women			0.803	
Men are more sure of what they can do than women are			0.784	
On the average, men are more arrogant than women				0.869
Men are generally more egotistical than women				0.846
Women are more gentle than men				0.745
Compared to men, women are more able to devote themselves completely to others				0.672
Total Variance Extracted 65.60%	25	18	11.7	10.4
Reliability	0.92	0.88	0.85	0.83

Table 13

Exploratory Factor Analysis Result (Factor Loadings): Gamers' Motivations

Items	Fantasy	Competition	Arousal	Escape	Challenge	Social
Video games allow me to pretend that I am somewhere else	0.874					
Video games allow me to pretend that I am someone else	0.873					
I like to do something that I could not normally do in real life through a video game	0.83					
I play video games because they let me do things I can't do in real life	0.789					
It is important to me to be the fastest and most skilled person playing the game		0.829				
When I lose to someone, I immediately want to play again in an attempt to beat him/her		0.816				
I get upset when I lose to my friends		0.771				
I like to play to prove to my friends that I am the best		0.734				
I find that playing video games raises my level of adrenaline			0.81			
Video games keep me on the edge of my seat			0.767			
I play video games because they excite me			0.721			
I play video games because they stimulate my emotions			0.626			
I play video games instead of other things that I should be doing				0.867		
I play video games to avoid real life problems				0.774		
I play video games when I have other things to do				0.766		
I play video games to escape the real world	0.514			0.655		
I find it very rewarding to get to the next level					0.821	
I feel proud when I master an aspect of a game					0.767	
I play until I complete a level or win a game					0.676	
I enjoy finding new and creative ways to work through video games					0.669	
Often, a group of friends and I will spend time playing video games						0.848
My friends and I use video games as a reason to get together						0.848
I play video game with someone because I cannot play by myself						0.504
Total Variance Extracted 75%	18.3	13	11.8	11.8	10.7	9.2
Reliability	0.94	0.877	0.89	0.86	0.78	0.804

Table 14

Exploratory Factor Analysis Result (Factor Loadings): Engagement

Items	Absorption	Flow	Presence
I feel different from my real self	0.861		
I feel spaced out	0.808		
I lost track of where am I	0.802		
Time seems to kind of standstill or stop	0.761		
Playing makes me feel that I am in flow		0.856	
I think I have ever experienced flow in playing		0.798	
Most of the time when I play I feel that I am in flow		0.796	
I play longer than I meant to			0.869
I lose track of time			0.864
I really get into the game			0.699
Total Variance Extracted 73%	27.2	25.3	21.2
Reliability	0.88	0.88	0.82

Table 15

Exploratory Factor Analysis Result (Factor Loadings): Purchase Intention

I will definitely purchase video game in the near future (i.e., next 3 months)	0.956
I have high purchase interest to purchase video game in the near future (i.e., next 3 months)	0.936
I will probably purchase video game title between now until the holiday season in the near future (i.e., next 3 months)	0.935
I intend to purchase video game in the near future (i.e., next 3 months)	0.932
Total Variance Extracted	88%
Reliability	0.95

Table 16

Exploratory Factor Analysis Result (Factor Loadings): Time Pressure and Problem Recognition

Items	Problem R	Time Pressure
I spend an increasing amount of time playing video game	0.841	
When I can't use the video games, I get restless or irritable	0.839	
Sometimes I conceal my video game playing to the others, this is, my parents, friends, professors…)	0.79	
When I am not playing video games, I keep thinking about them (i.e. remembering the games, planning the next game, etc.)	0.785	
Because of the video game playing I have reduced my homework, or I have not eaten, or I have gone to bed late, or I spent less time	0.775	
When I feel bad, e.g. nervous, sad, or angry, or when I have problems, I use the video games more often	0.772	
In order to play video games I have skipped classes or work, or lied, or stolen or had an argument or a fight with someone	0.767	
have tried to control, cut back or stop playing	0.762	
When I lose in a game, or I have not obtained the desired results, I need to play again to achieve my target	0.688	
I usually find myself pressed for time		0.919
Usually, there is so much to do that I wish I had more time		0.901
I seem to be busier than most people, I know		0.843
Total Variance Extracted 66.10%	45.8	20.2
Reliability	0.92	0.87

The tables above (Tables 12-16) provide evidence and support for the measurement used in this study, as the factors loadings were consistent with the original source. The table below (Table 17) show the convergent and discriminant validity.

Table 17

Convergent and Discriminant Validity

	ESC	FEM	FAN	MAS	PUI	COM	EGG	ABS	Flow	TRG	ARO	PRE	SOC
ESC	0.810												
FEM	-0.099	0.808											
FAN	0.474	0.020	0.885										
MAS	0.010	0.126	0.123	0.711									
PUI	0.128	0.071	0.324	0.310	0.919								
COM	0.463	-0.039	0.377	0.311	0.267	0.805							
EGG	0.308	-0.139	0.174	0.071	0.073	0.358	0.779						
ABS	0.534	-0.008	0.572	0.183	0.249	0.502	0.326	0.816					
Flow	0.381	0.124	0.558	0.199	0.342	0.391	0.111	0.640	0.804				
TRG	0.090	0.170	0.174	0.062	0.117	0.202	0.386	0.225	0.190	0.793			
ARO	0.409	0.134	0.701	0.233	0.385	0.510	0.215	0.587	0.649	0.227	0.813		
PRE	0.432	0.162	0.379	0.162	0.123	0.292	0.111	0.466	0.564	0.302	0.479	0.800	
SOC	0.251	0.124	0.383	0.239	0.392	0.527	0.205	0.322	0.367	0.174	0.580	0.236	0.926
CR	0.850	0.944	0.935	0.856	0.956	0.880	0.861	0.888	0.877	0.833	0.886	0.838	0.923
AVE	0.656	0.653	0.783	0.505	0.845	0.648	0.608	0.665	0.647	0.628	0.661	0.640	0.858

Notes: The numbers in diagonal cells are √AVE; lower diagonal numbers are inter factor correlation (Φ)

4.2.3   Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) test and confirm the results of the exploratory factor analysis. CFA provides a confirmatory test of proposed measurement model. The measurement model provides evidence how the measurement work together logically. The CFA tests how the measurement can capture the concept that we are trying to measure. The CFA and the construct validity test offers a better understanding of the quality of the measures (Hair et al., 2006). The CFA in this study is based on the covariance matrix. We have choose fit indices that are 1) represent different families of fit indices, and 2) best represent the specified stringent set of criteria (Garver and Mentzer, 1999).

We choose five indices for this study. The first index used was the ratio of the chi-square and the degree of freedom. The chi-square (X^2) is the traditional measures that evaluate the

overall fit of the model. However, this index is not enough because this index is sensitive to the sample size (Hair et al., 2006). We incorporated the degree of freedom which can improve our model comparison. A ratio of chi-square and the degree of freedom should be less than 5.0 (Marsh and Hocevar, 1985).

The second index we used is the root-mean-square error of approximation (RMSEA). The RMSEA indicates the model fit with unknown but optimal chosen parameter values. The RMSEA considers to be among the most informative fit indices. This index does not conflict with the requirement of parsimony like other indices, and it does not require the calculation of a null model (Hair et al., 2006). A value less than 0.05 indicates a close fit while the value of 0.08 indicates a reasonable fit.

The third index that we used is the Goodness-of-Fit Index (GFI).The GFI is a fit index that are less sensitive to sample size. Also, it is an indicator of the relevant amount of variance and covariance accounted for by the model. The index value range between 0 (poor fit) to 1.0 (perfect fit). There is no statistical test associated with this index, only guidelines to fit. In general 0.8 <GFI< 0.9 means acceptable fit and GFI>= 0.9 means satisfactory fit (Hair et al., 2006; Tasmin and Woods, 2007).

The last two indices we used are from incremental fit indices. They are different from the absolute fit indices that they assess how well the estimated model fits relative to some alternative base model. The fourth indices that we used is incremental Fit Index (IFI). The value of IFI ranges between 0 (no fit) to 1.0 (perfect fit), and the guideline for this index is above 0.90 is consider to be a good fit. The last index is Comparative Fit Index (CFI). It is not systematically related to sample size, and it does not take the model parsimony into consideration. The value of

CFI ranges from 0 (poor fit) to 1.0 (perfect fit). The recommended value for this index is above 0.90 to consider well-estimated model (Hair et al., 2006).

SPSS-AMOS 17.0. (Chicago, IL) program was used to test the measurement model. First, the Average Variance Extracted (hereafter AVE) for all the measures, except the challenge construct (AVE=0.47), were above 0.5 indicating convergent validity. We assess discriminant validity by using Fornell and Larcker's (1981; Tasmin and Woods, 2007) method of comparing the AVE to the shared variance (phi) between constructs. The square root of AVE was higher than the shared variance (phi) indicating discriminant validity. The model fit was also appropriate (X^2 = 2313.85, DF = 1290, p-value = 0.00, X^2/df = 1.79, GFI = 0.85, CFI = 0.949, IFI = 0.95, RMSEA = 0.040). There is no single index that could decide the goodness of the model. All the goodness of fit indices represent only some dimensions of fit, we should look at several fit indices to decide. The composite reliability score for all measure were higher than 0.6 confirming that the scales are reliable (Bagozzi and Yi, 1988). Further, the Cronbach's' alpha for constructs were higher than 0.7 indicating acceptable reliability (Nunnally, 1978).

4.2.4   Convergent Validity

Validity defines as the accuracy of the measurement that means are we measuring what we are supposed to measure (Hair et al., 2006). As Kerlinger and Lee (2000, p. 666) said "are we measuring what we think, we are measuring." The convergent validity means how the items in the scale land together. The convergent validity can be achieved by factorial analysis in regression. In this analysis the researcher used Varimax rotation, and used above one eigenvalue to be able to interpret the results. However, the research ideally wants to achieve above 0.90 items loadings. In convergent validity, we are trying to test if the constructs measure what it supposed to measure. In Structural Equation Modeling (SEM) the convergent validity can be

established by the AVE. It should be above 0.50 (Gerbing and Anderson, 1988; Iacobucci, Saldanha, and Deng, 2007). The AVE for all items is above 0.50 which we can said that we have convergent validity.

4.2.5   Discriminant Validity

The discriminant validity means how unique is the construct from other constructs. In this analysis, we want to get no cross-loading on different construct (Hair et al. 2006). For example, we want the three items that belong to flow construct to load together with a high coefficient (<0.7) and no cross-loading. To test for discriminant validity, AVE should be higher than any alternative external correlations between constructs (Fornell and Larker, 1981). Therefore, the AVE of a construct's set of indicators is compared with the Phi correlations to other model constructs. When AVE > Phi-squared, the internal relationships are greater than the external ones and discriminant validity, i.e. unidimensionality (Gerbing and Anderson, 1988), is supported. We have established the discriminant validity in this study. See Table 17 for more details.

4.2.6   Reliability

Reliability is the lack of distortion or precision of a measuring instrument (Kerlinger and Lee, 2000). Reliability is the assessment of consistency of items measuring a construct. Behavioral measurements (and measurements, in general) are largely variable from occasion to occasion. Researchers are challenged to produce measurement instruments that are consistent over time, that measure "something" accurately (not to be confused with validity), and that minimize measurement error. As Kerlinger and Lee put it, "Poor measurement can invalidate any scientific investigation." (2000, p. 685) Researchers must ensure consistent and accurate measurement in all studies. Researchers, particularly behavioral researchers, face many challenges ensuring reliable and valid measurement. SEM separates the error into measurement

error and structural error that make SEM superior to regression analysis in some cases. Also, it makes SEM assess reliability and validity more accurately (Anderson and Gerbing 1988; Fornell and Larker 1981; Iacobucci et al. 2007). Tables 12-16 indicate that all the scales have a good level of internal consistency, with the lowest 0.78.

4.3   Hypothesis Testing

The hypothesized research model in Figure 1, and the related hypothesis were tested. Hypotheses 1, 2, and 7 include categorical variables, and we test this hypothesis using ANOVA. The other variables were tested in the path model with nine independent variable, three mediators, and one dependent variable.

4.3.1   The Impact of Sex on Video Games Engagement and Purchase Intention

The effects of sex on presence, flow and psychological was tested using one-way ANOVA with 0.05 significant level. We fund significant results that men and women have different behavior in playing video games (Table 16). For example, men have higher means for psychological absorption (3.23) than women (2.91) with p-value of 0.005. Table below (Table 16) details the means and stander deviations for men and women gamers.

Table 18

ANOVA: The Effect of Sex on Presence, Flow, and Psychological Absorption

		N	Mean	Std. Deviation	F-value	p-value
Absorption	Male	249	3.2359	1.32432	7.969	0.005***
	Female	252	2.9107	1.25386		
	Total	501	3.0724	1.29832		
Flow	Male	249	4.1165	1.09957	8.944	0.003***
	Female	252	3.8016	1.25124		
	Total	501	3.9581	1.18763		
Presence	Male	249	4.6627	0.88924	3.11	0.078*
	Female	252	4.5106	1.0339		
	Total	501	4.5862	0.96676		

Notes: *** p-value < 0.01; ** p-value < 0.05; * p-value < 0.10

We also have tested the different between men and women in purchasing video games using ANOVA test. We found that men have higher means (M = 4.14) than women (M = 3.73) in the intention to purchase video games with 0.001 p-value. Table below test that relationship.

Table 19

ANOVA: The Effect of Sex on Purchase Intention

		N	Mean	Std. Deviation	F-value	p-value
Purchase Intention	Male	249	4.1476	1.35694	10.625	0.001***
	Female	252	3.7391	1.44612		
	Total	501	3.9421	1.41594		

Notes: *** p-value < 0.01; ** p-value < 0.05; * p-value < 0.10

4.3.2   The Impact of Gamers' Motivations Drivers on Presence, Flow, and Purchase Intention

The effects of gamers' motivations drivers on presence, flow and psychological was tested using one-way ANOVA with 0.05 significant level. We fund significant results that as the gamers' motivations drivers increase, the level of engagement increase as well. First, we composite the scores for all the six gamers' motivations (Competition, Challenge, Diversion, Fantasy, Arousal, and Social Interaction) (H7). Then, we dichotomize the gamers' motivations by identifying the median point. After that, we dichotomize the gamers who scored above that point as having that motivation, and the gamers who scored blow this point as they do not have this motivation. For example, gamers who scored above 4.0 in the competition construct was recorded as they have this motivation to play video games. On the other hand, if they scored below this point that means they do not have this motivation. After that, we assigned 1 for gamers who have the motivation and 0 for gamers who do not have that motivation. The value of gamers' motivations range between 0 (no motivation) to 6 (6 motivations). We test this

hypothesis by ANOVA, and we found significant results. For example, gamers who do not have any motivation to play have low means (M =2.52) to have psychological absorption than gamers who have six motivation drivers to play (M = 4.96), F = 31.145. Please, look at Table 22 for more details.

Table 20

ANOVA: The Effect of Motivation Derivers on Presence, Flow, and Psychological Absorption

		N	Mean	Std. Deviation	f-value	p-value
Absorption	No motivation	90	2.5222	1.05245		
	1 motivation	97	2.6057	1.13298		
	2 motivations	88	2.6449	0.99692		
	3 motivations	81	3.0617	1.25967	31.145	0.000***
	4 motivations	70	3.5321	1.23133		
	5 motivations	44	4.0341	1.08718		
	6 motivations	31	4.9677	0.83352		
	Total	501	3.0724	1.29832		
Flow	No motivation	90	3.1074	1.02263		
	1 motivation	97	3.4948	1.1305		
	2 motivations	88	3.7348	1.11206		
	3 motivations	81	4.2222	0.94133	33.542	0.000***
	4 motivations	70	4.5429	0.95498		
	5 motivations	44	4.8939	0.81894		
	6 motivations	31	5.172	0.70905		
	Total	501	3.9581	1.18763		
Presence	No motivation	90	3.8667	0.87524		
	1 motivation	97	4.3608	0.94608		
	2 motivations	88	4.4356	0.89036		
	3 motivations	81	4.7737	0.75614	24.649	0.000***
	4 motivations	70	5.0619	0.88518		
	5 motivations	44	5.2197	0.73292		
	6 motivations	31	5.3441	0.67486		
	Total	501	4.5862	0.96676		

Notes: *** p-value < 0.01; ** p-value < 0.05; * p-value < 0.10

4.3.3   Path Model of Psychological Gender, Gender Role Attitude, and Gamers' Motivations on Purchase Intention

We used SPSS-AMOS 17.0 to test the hypothesized relationships in the model. We hypothesized relationships among gender identity, gender role attitude, gamers' motivations, video game engagement, and purchase intention. In the path analysis, we used the full structural equation model with all the items to set the direct relationships.
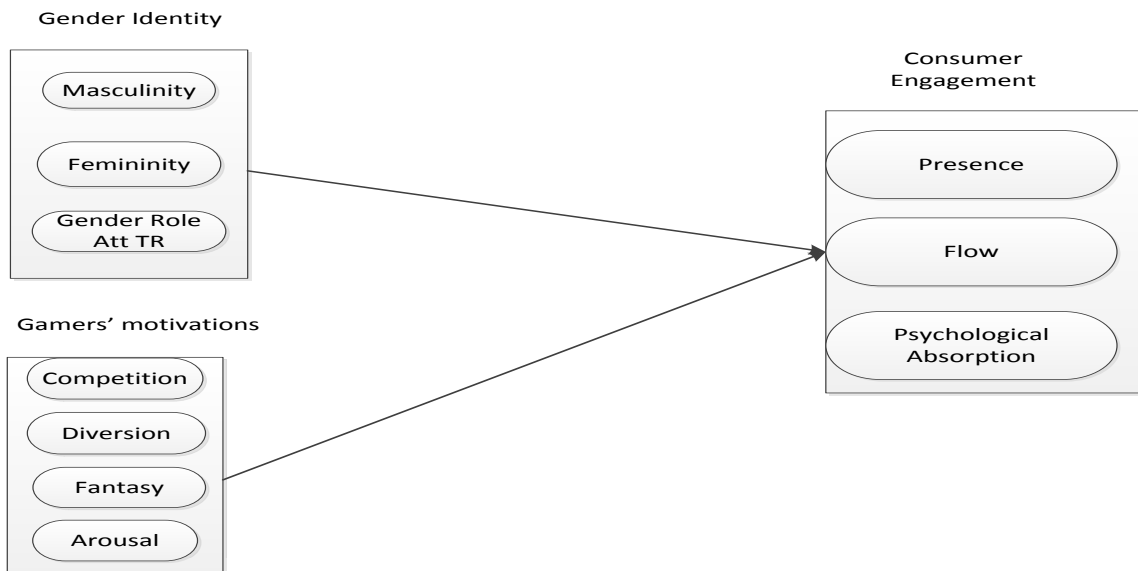

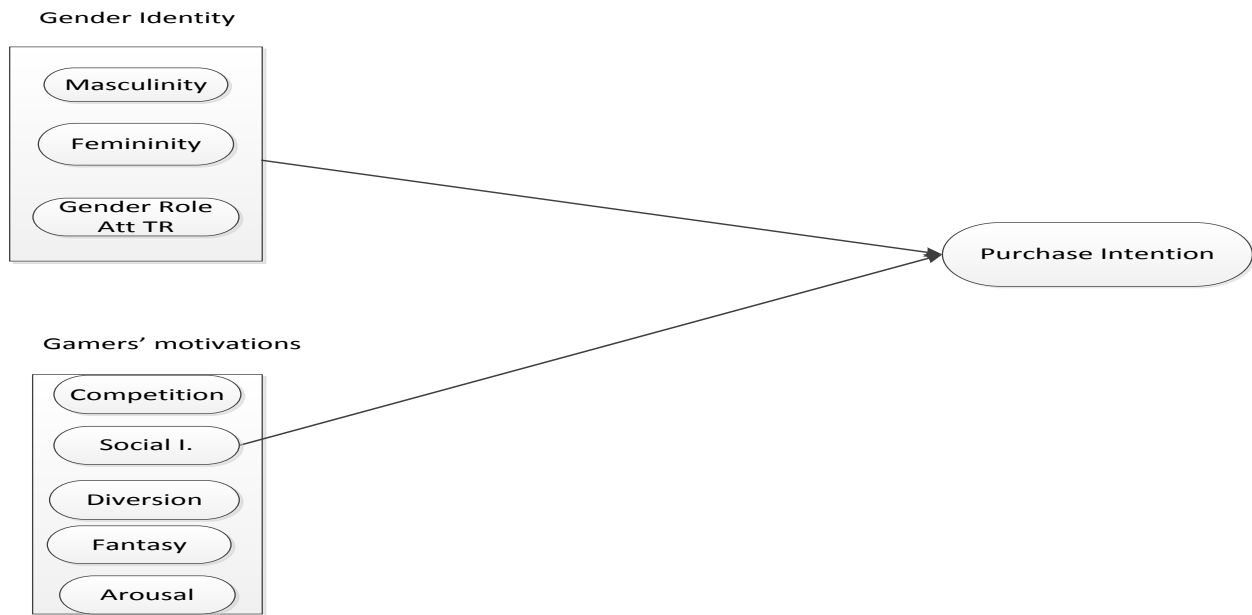*Figure 3.* Direct relationships part 1.

Figure 4. Direct relationships part 2.

The first model above in Figure 1. The dependent variable in this model is video game engagement that include presence, flow, and psychological absorption. We tested the relationship by using the full structural model. The model has good fit indices. The fit indices show an acceptable level (GFI = 0.847, CFI = 0.94, Chi-square = 2427.929, degree of freedom =1294, p-value < 0.001, RMSEA = 0.042).

We hypothesized that gamers who have more masculine traits will have a positive relationship with game's engagement. We found that masculinity has a positive relationship with presence but not with flow and absorption (H3a, H3b, and H3c). Also, the path estimate is small (0.091) which indicate a weak relationship (Table 21). That means that the gamers' masculinity trait does not have a big influence on gamers' engagement. We also hypothesized that the gamers' traditional gender role attitude has a positive relationship with presence, flow, and absorption. We found that traditional gender role attitude has a positive relationship with just presence with high path estimate (0.246) and 0.000 p-value.

Table 21

Direct Relationship between Gender Identity and Presence, Flow, and Psychological Absorption

Relationships	Direct
Masculinity ➔ Presence	0.091(0.05)*
Masculinity ➔ Flow	0.028(0.485)
Masculinity ➔ Absorption	0.035(0.379)
Masculinity ➔ Purchase Intention	0.228(0.001)***
TR Gender Role ➔ Presence	0.246(0.000)***
TR Gender Role ➔ Flow	-0.028(0.768)
TR Gender Role ➔ Absorption	0.029(0.496)
TR Gender Role ➔ Purchase Intention	-0.046(0.397)

Notes: *** p-value < 0.01; ** p-value < 0.05; * p-value < 0.10

There are links between gamers' motivations and presence, flow, and psychological absorption. The results suggested that H8c, H12c, H13b, H14b, H14c, H15b, H16a, H16c, H18a,

and H18b are supported. The first gamers' motivation that we tested was competition. We hypothesized that gamers' competition motivation has a positive relationship with presence, flow, and absorption. Moreover, gamer social motivation was supported by -0.094 path estimate. That means the gamers who play video games for social motivations will not reach psychological absorption because they are looking to connect with other gamers rather than engaging in the game. Also, gamer fantasy motivation (gamers' who want to be someone else or somewhere else in using games) has a significant positive relationship with flow and psychological absorption.

The path estimate for flow was 0.171 (0.003), and psychological absorption was 0.150 (0.009). Moreover, gamer diversion motivation was significantly and positively related to presence and absorption. The gamers want to escape their lives, and that leads them to reach high engagement level such as absorption. The path estimate for presence was 0.363(0.000) and for psychological absorption 0.193(0.000). The last motivation that we tested in this study is the gamer's arousal motivation that we hypothesized that it had a positive relationship with presence, flow, and absorption. We found support that gamer arousal motivation has a positive correlation with presence and flow. The path estimate for presence was 0.363 (0.000) and for flow 0.0008(0.000). We did not test the relationship with gamer challenge motivation because we have removed that construct from our analysis due to low convergent validity. The table below summarizes the paths that were presented above.

Table 22

Direct Relationship between Gamers' Motivations and Presence, Flow, and Psychological Absorption

Relationships	Direct
M. Competition ➔ Presence	-0.028(0.786)
M. Competition ➔ Flow	0.071(0.195)
M. Competition ➔ Absorption	0.143(0.007)***
M. Competition ➔ Purchase Intention	-0.018(0.77)
M. Social ➔ Presence	-.083(0.148)
M. Social ➔ Flow	-0.011(0.821)
M. Social ➔ Absorption	-0.094(0.055)*
M. Social ➔ Purchase Intention	0.238(0.000)***
M. Fantasy ➔ Presence	-0.032(0.646)
M. Fantasy ➔ Flow	0.171(0.003)***
M. Fantasy ➔ Absorption	0.15(0.009)***
M. Fantasy ➔ Purchase Intention	0.14(0.040)**
M. Escape ➔ Presence	0.363(0.000)***
M. Escape ➔ Flow	0.008(0.881)
M. Escape ➔ Absorption	0.193(0.000)***
M. Escape ➔ Purchase Intention	-0.038(0.50)
M. Arousal ➔ Presence	0.363(0.000)***
M. Arousal ➔ Flow	0.008(0.000)***
M. Arousal ➔ Absorption	0.193(0.141)
M. Arousal ➔ Purchase Intention	0.186(0.043)**

Notes: *** p-value < 0.01; ** p-value < 0.05; * p-value < 0.10

The direct relationships between presence, flow, and psychological absorption and purchase intention were hypothesized. As we can see in the Figure 4. We found a significant relationship between presence and flow and purchase intention. The path estimate for presence was -0.15 (0.012) and for flow was 0.2 (0.005). We did not find a significant result between psychological absorption and purchase intention. The table below (Table 23) summarizes the relationship that we have tested.
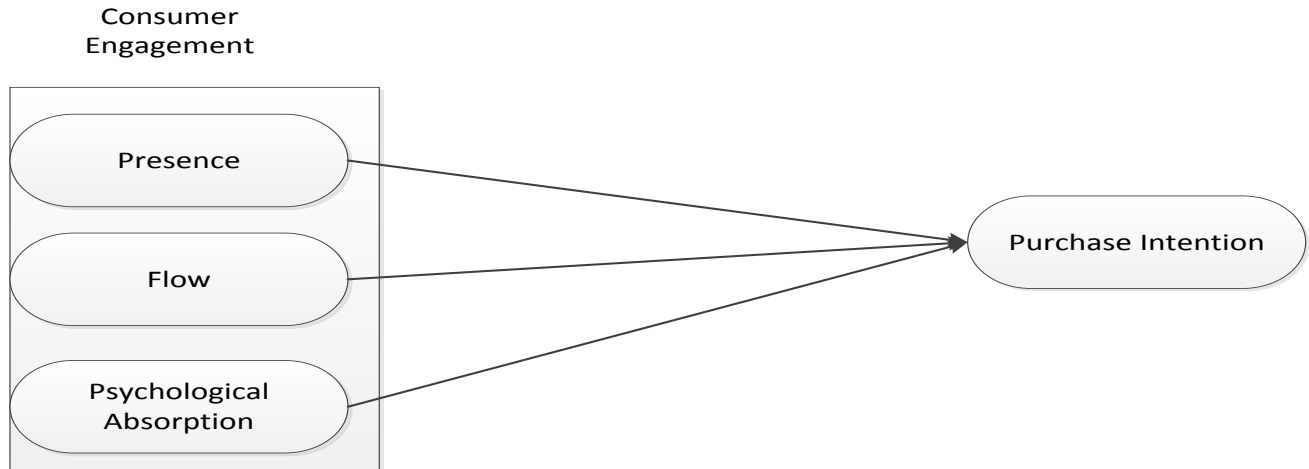
Figure 5. Direct relationships part 3.

Table 23

Direct Relationship between Purchase Intention and Presence, Flow, and Psychological Absorption

Relationships	Direct
Presence ➔ Purchase Intention	-0.154(0.012)**
Flow ➔ Purchase Intention	0.2(0.005)***
Absorption ➔ Purchase Intention	-0.032(0.657)

Notes: *** p-value < 0.01; ** p-value < 0.05; * p-value < 0.10

4.3.4   Path Model of Gender Identity and Gamers' Motivations on Purchase Intention

In this part, we tested the direct and indirect effect of masculinity and traditional gender role on purchase intention. Figure 3 show the relationships that were hypothesized. This model has the same independent and independent variables as Figure 4 that we presented above. We hypothesized that gamers' masculine traits are positively related to purchase intention, and this relationship is mediated by presence, flow, and psychological absorption. We found that masculinity is positively related to purchase intention with path estimate (0.228) and p-value (0.001). We also tested the mediation effect of presence (H5a), flow (H5b), and psychological absorption (H5c) between masculinity and purchase intention. We used bootstrapping, and we

found that the mediation is not significant (presence p-value =0.99, flow p-value 0.319, psychological absorption p-value =0.426). We also hypothesized that presence (H6a), flow (H6b), and psychological absorption (H6c) mediate the relationships between traditional gender role attitudes and purchase intention. We found no direct impact of traditional gender role attitudes and purchase intention with 0.037 path estimate and 0.47 p-value. Therefore, we found no mediation effect for presence (path estimate=0.064, p-value=0.23), flow (path estimate=0.055, p-value=0.275), and psychological absorption (path estimate=0.055, p-value=0.273). Please, see Table 25 for more details.

Table 24

The Mediation Effect of Presence, Flow, and Psychological Absorption on Gender Identity and Purchase Intention

Relationships	Direct without Mediator	Direct with Mediator	Direct
Masculinity ➜Purchase Intention	0.228(0.001)***		
Masculinity➜presence ➜PUI		0.227(0.000)	Partial Mediation (NS, Bootstrapping 0.999)
Masculinity➜ Flow ➜PUI		0.223(0.000)	Partial Mediation (NS, Bootstrapping 0.319)
Masculinity➜ Absorption➜ PUI		0.225(0.000)	Partial Mediation (NS, Bootstrapping 0.426)
TR Gender ➜Purchase Intention	0.037(0.47)		
TR Gender ➜ presence ➜PUI		0.064(0.231)	No Mediation
TR Gender ➜Flow➜ PUI		0.055(0.275)	No Mediation
TR Gender ➜Absorption➜PUI		0.055(0.273)	No Mediation

*Notes: *** p-value < 0.01; ** p-value < 0.05; * p-value < 0.10*
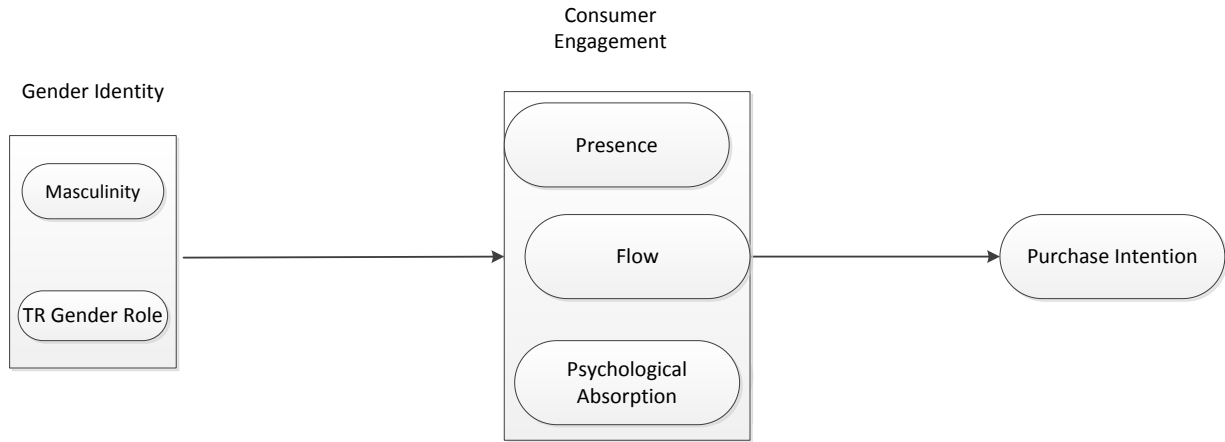
Figure 6. Indirect relationships part 1.

In this part, we tested the direct and indirect relationships. For example, we examined the effect of gamer motivation on purchase intention. Figure 7 show the relationships that were hypothesized. We hypothesized that presence (H9a), flow (H9b), and psychological absorption (H9c) mediate the relationship between gamers' competition motivation and purchase intention. We found that gamers' competition motivation is not significantly related to purchase intention. Therefore, presence, flow, and psychological absorption do not mediate the relationship between gamers' competition motivation and purchase intention. Also, we hypothesized that presence (H13a), flow (H13b), and psychological absorption (H13c) mediate the relationship between gamers' social interaction motivation and purchase intention. We found that there is a positive relationship between gamers' social interaction motivation and purchase intention with (0.238) path estimate and p-value (0.000). We also tested the mediation effect of presence (H13a), flow (H13b), and psychological absorption (H13c) between gamers' social interaction motivation and purchase intention using bootstrapping. We found that flow partially mediate the relationship between gamers' social interaction and purchase intention. We also found that presence and psychological absorption do not mediate the relationship between these two variables.

Concerning gamers' fantasy motivation, we hypothesized presence (H15a), flow (H15b), and psychological absorption (H15c) mediate the relationship between gamers' fantasy motivation and purchase intention. We found that there is a positive relationship between gamers' fantasy motivation and purchase intention with (0.140) path estimate and p-value (0.040). We also tested the mediation effect of presence (H15a), flow (H15b), and psychological absorption (H15c) between gamers' fantasy motivation and purchase intention using bootstrapping. We found that flow partially mediate the relationship between gamers' fantasy and purchase intention. However, we found that presence and psychological absorption do not mediate the relationship between these two variables.

We also hypothesized that presence (H17a), flow (H17b), and psychological absorption (H17c) mediate the relationship between gamers' diversion motivation and purchase intention. We found that this relationship is not significant (p-value>0.1). The last set of hypothesis related to the same mediators is related to gamers' arousal motivation. We hypothesized that presence (H19a), flow (H19b) and psychological absorption (H19c) mediate the relationship between gamers' arousal motivation and purchase intention. We found that there is no mediation relationship. Please, see Table 26 for more details.

Table 25

The Mediation Effect of Presence, Flow, and Psychological Absorption on Gamers' motivations and Purchase Intention

Relationships	Direct without Mediator	Direct with Mediator	Direct
M. Competition ➔Purchase Intention	-0.018(0.77)		
M. Competition ➔Presence➔ PUI		-0.031(0.629)	No Mediation
M. Competition ➔Flow➔ PUI		-0.032(0.618)	No Mediation
M. Competition ➔Absorption➔ PUI		-0.027(0.677)	No Mediation
M. Social➔ Purchase Intention	0.238(0.000)***		
M. Social ➔Presence➔ PUI		0.230(0.000)	Partial Mediation (NS, 0.912 Bootstrapping)
M. Social➔Flow➔PUI		0.234(0.000)	Partial Mediation (total=0.219,Dir=0.177, Indir= 0.020 (p-value=0.02)
M. Social➔Absorption ➔ PUI		0.233(0.000)	Partial Mediation (NS, 0.138 Bootstrapping)
M. Fantasy ➔Purchase Intention	0.14(0.040)**		
M. Fantasy ➔Presence ➔ PUI		0.11(0.117)	No Mediation (NS, 0.959 Bootstrapping)
M. Fantasy➔ Flow ➔ PUI		0.107(0.122)	Partial Mediation (Bootstrapping)
M. Fantasy➔ Absorption ➔ PUI		0.155(0.101)	No Mediation (NS, 0.141 Bootstrapping)
M. Diversion➔ Purchase Intention	-0.038(0.50)		
M. Diversion➔ Presence➔ PUI		-0.001(0.981)	No Mediation
M. Diversion➔ Flow ➔ PUI		-0.015(0.787)	No Mediation
M. Diversion➔ absorption➔ PUI		-0.011(0.857)	No Mediation
M. Arousal➔ Purchase Intention	0.12(0.136)		
M. Arousal➔ Presence➔ PUI		0.101(0.238)	No Mediation (NS, 0.981 Bootstrapping)
M. Arousal➔ Flow➔ PUI		0.077(0.365)	No Mediation (NS, 0.133 Bootstrapping)
M. Arousal➔ Absorption➔ PUI		0.090(0.275)	No Mediation (NS, 0.237 Bootstrapping)

Notes: *** p-value < 0.01; ** p-value < 0.05; * p-value < 0.10
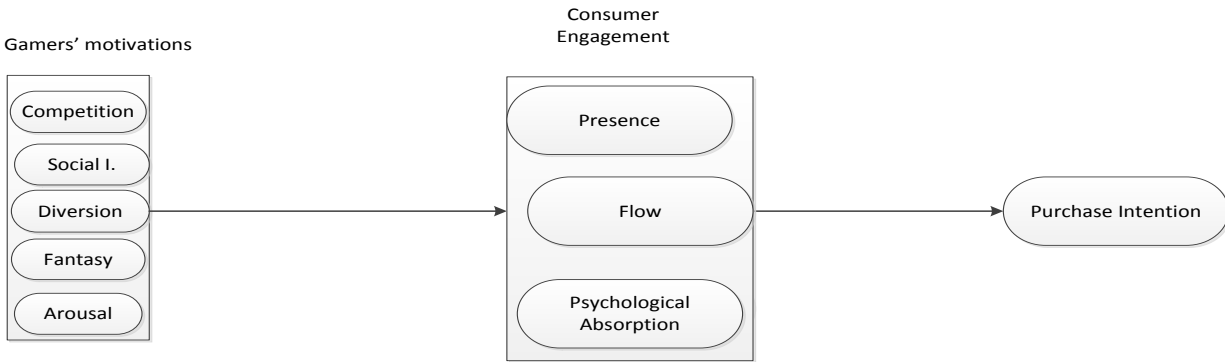
Figure 7. Testing the indirect relationships part 2.

4.3.5   Summary of Hypothesis

Table 24 provides summary of the results for all the hypotheses, except H10a-c and H11a-c because we have dropped the gamers' challenge motivation construct. H1a-c and H2 examine the role of sex in game engagement and purchase intention. We found support at 0.95 confidence level that male and female behave differently in playing video game that much previous research fail to establish. Generally speaking, males and female are different in regard to presence that we described as the first level of game engagement. Also, we found support that aligned with the industry that male gamers have higher mean than female gamers in regard to video game engagement and purchase intention.

Furthermore, hypothesis H3a-c, H4a-c, H5a-c, and H6a-c examine the relationship between gender identity, video game engagement, and purchase intention. We found support for some hypotheses. Masculinity has a positive impact on the first level of video game engagement (i.e., presence) (H3a).We also found that the three level of video game engagement (i.e., presence, flow, psychological absorption) do not mediate masculinity and purchase intention (H5a-c). Also, the traditional gender role attitude positively impacts presence (H4a). This result indicates that male and female gamers will play games that aligned with their gender.

The result indicates a significant relationship between gamers' motivations drivers and video game engagement (H7a-c). Gamers' motivations drivers are strongly correlated with gamers' playing behavior. Therefore, the more motivations a gamer has, the more likely that gamer will engage in a game.

In this study, we examined the gamers' motivations and how that related to their video game engagement and purchase intention. Hypotheses H8a-c and H9a-c is related to gamers' competition motivation. We found that gamer competition motivation significantly influence the deepest level of video game engagement (i.e., psychological absorption) (H8c). Also, we found that the three level of video game engagement (i.e., presence, flow, psychological absorption) serve mediators for gamer competition motivation and purchase intention (H9a-c).

We tested the relationship between gamer social interaction and the three level of video game engagement (i.e., presence, flow, psychological absorption). We found that gamer social interaction motivation only supported at the deepest video game engagement (H12c). However, we hypothesized that there is a positive relationship, and the result showed a negative one that means that the more gamers get engaged in a game the will not reach psychological absorption. We also found support that flow partially mediate the relationship between gamers' social interaction motivation and purchase intention (H13b). Moreover, presence and psychological absorption serve as mediators for gamers' social interaction and purchase intention (H13a&c).

We tested hypotheses H14a-c and H15a-c, and we found that gamers' fantasy motivation is significantly and positively impact flow and psychological absorption (H14b&c) at 0.95 confidence level. We also found that gamers' fantasy motivation is significantly impact purchase intention. In this regard, we found that flow serve as partial mediators between gamers' fantasy motivation and purchase intention. Presence and psychological work as mediators between

gamer's fantasy and purchase intention according to Baron and Kenny (1986) approach. However, when we used bootstrapping, we found this path insignificant.

When we tested hypotheses H16a-c and H17a-c, we found that just H16a&c are supported at 0.95 confidence level. Also, we found there is no relationship between gamers' diversion motivation and purchase intention and there is no mediation effect for presence, flow, and psychological absorption.

The last gamers' motivation that we tested in this study was gamers' arousal motivation. We found that H18a&b are supported at 0.95 confidence level. We also found that there is no mediation effect for presence, flow, and psychological absorption on gamer's arousal motivation and purchase intention (H19a-c). We even did not find a direct relationship between gamers' arousal motivation and purchase intention.

We found interesting results in the last three hypotheses H20a-c. We found that presence and flow are significantly influencing purchase intention at 0.95 confidence level. However, we found that presence is negatively influencing purchase intention that was surprising results.

Table 26

Summary of Hypothesis

	Hypothesized Relationship				
	From	To	f-value	p-value	Test Result
H1a	Sex	Presence	3.11	0.078	Supported
H1b	Sex	Flow	8.94	0.003	Supported
H1c	Sex	Absorption	7.96	0.005	Supported
H2	Sex	Purchase Intention	10.625	0.001	Supported
	Hypothesized Relationship		Path Estimate	p-value	
H3a	Masculinity	Presence	0.091	0.05	Supported
H3b	Masculinity	Flow	0.028	0.485	Not Supported
H3c	Masculinity	Absorption	0.035	0.379	Not Supported
H4a	Traditional Gender Role Attitude	Presence	0.246	0.000	Supported
H4b	Traditional Gender Role Attitude	Flow	-0.028	0.768	Not Supported
H4c	Traditional Gender Role Attitude	Absorption	0.029	0.496	Not Supported
H5a	Masculinity &Presence	Purchase Intention	0.277	0.000	Not Supported
H5b	Masculinity & Flow	Purchase Intention	0.223	0.000	Not Supported
H5c	Masculinity & Absorption	Purchase Intention	0.225	0.000	Not Supported
H6a	TR Gender Role & presence	Purchase Intention	0.064	0.231	Not Supported
H6b	TR Gender Role & Flow	Purchase Intention	0.055	0.275	Not Supported
H6c	TR Gender Role & Absorption	Purchase Intention	0.055	0.273	Not Supported
	Hypothesized Relationship		f-value	p-value	
H7a	Gamers' Motivations drivers	Presence	24.64	0.000	Supported
H7b	Gamers' Motivations drivers	Flow	33.54	0.000	Supported
H7c	Gamers' Motivations drivers	Absorption	31.14	0.000	Supported
	Hypothesized Relationship		Path Estimate	p-value	
H8a	M. Competition	Presence	-0.028	0.786	Not Supported
H8b	M. Competition	Flow	0.071	0.195	Not Supported
H8c	M. Competition	Absorption	0.143	0.007	Supported
H9a	M. Competition &Presence	Purchase Intention	-0.031	0.629	Not Supported
H9b	M. Competition &Flow	Purchase Intention	-0.032	0.618	Not Supported
H9c	M. Competition &Absorption	Purchase Intention	-0.027	0.677	Not Supported

*P<0.10   *(table continues)*

Summary of Hypothesis (continued).

	Hypothesized Relationship		Path Estimate	p-value	Test Result
	From	To			
H12a	M. Social	Presence	-0.083	0.148	Not Supported
H12b	M. Social	Flow	-0.011	0.821	Not Supported
H12c	M. Social	Absorption	-0.094	0.055	Supported
H13a	M. Social & Presence	Purchase Intention	0.230	0.000	Not Supported
H13b	M. Social & Flow	Purchase Intention	0.234	0.000	Supported
H13c	M. Social & Absorption	Purchase Intention	0.233	0.000	Not Supported
H14a	M. Fantasy	Presence	-0.032	0.646	Not Supported
H14b	M. Fantasy	Flow	0.171	0.003	Not Supported
H14c	M. Fantasy	Absorption	0.150	0.009	Supported
H15a	M. Fantasy & Presence	Purchase Intention	0.110	0.117	Not Supported
H15b	M. Fantasy & Flow	Purchase Intention	0.107	0.117	Supported
H15c	M. Fantasy & Absorption	Purchase Intention	0.155	0.101	Not Supported
H16a	M. Diversion	Presence	0.363	0.000	Supported
H16b	M. Diversion	Flow	0.008	0.881	Not Supported
H16c	M. Diversion	Absorption	0.193	0.000	Supported
H17a	M. Diversion & Presence	Purchase Intention	-0.001	0.981	Not Supported
H17b	M. Diversion & Flow	Purchase Intention	-0.015	0.787	Not Supported
H17c	M. Diversion & Absorption	Purchase Intention	-0.011	0.857	Not Supported
H18a	M. Arousal	Presence	0.363	0.000	Supported
H18b	M. Arousal	Flow	0.008	0.000	Supported
H18c	M. Arousal	Absorption	0.193	0.141	Not Supported
H19a	M. Arousal & Presence	Purchase Intention	0.101	0.238	Not Supported
H19b	M. Arousal & Flow	Purchase Intention	0.077	0.365	Not Supported
H19c	M. Arousal & Absorption	Purchase Intention	0.090	0.275	Not Supported
H20a	Presence	Purchase Intention	-0.154	0.012	Supported
H20b	Flow	Purchase Intention	0.200	0.005	Supported
H20c	Absorption	Purchase Intention	-0.032	0.657	Not Supported

*P<0.10

CHAPTER 5

DISCUSSION AND IMPLICATION

Companies re-brand and re-organize products and services to engage consumers. The empirical results reported in the preceding chapter confront Hoffman and Novak's (2009) argue that the interactive environment change the consumer's feeling of being psychologically engaged. The context of this study, video games, would be the best to test consumer flow in the virtual environment. We also went beyond the measurement of gender as a categorical variable. We tested the consumer's gender using more than the consumer's biological sex (i.e., sex, psychological gender, and gender role attitudes). Moreover, several studies have found consistent gender differences in video game play (Jenson and De Castell, 2010; Lucas and Sherry, 2004; Yee, 2006). The current study continues the work in consumer engagement which has been largely conceptual and/or exploratory to date.

Co-creation of value concept has not been analyzed sufficiently in marketing literature. This work sheds light on this concept by using video games as context. We also have examined the consumers' motivations and how that effects their engagement and purchase intention. Each of the gamers motivations (i.e., competition, social interaction, diversion, fantasy, and arousal) has impacted the consumer's behavior differently. Gamer's motivations did not influence consumer engagement and purchase intention, in the same way. The results of this study can be used by practitioners and researchers to understand consumer behavior in the interactive environment.

The current chapter extends the data analytics to describe and to present the implication of this study to advance marketing theory and practice. In order to achieve this goal. This chapter interprets the findings for each hypothesized relationship that we indicated in the null model.

Then, the model is systematically evaluated relatively to the sample design. We offer opportunities for advancing our understanding of consumer engagement in the context of video game. Consumers engagement is an important concept in the marketing literature because it contributes to relationship marketing by repeat purchases, retention and loyalty through affecting the consumers experience (Verhoef, Reinartz, and Krafft, 2010). We will also present the research limitation and future research.

5.1   Discussion

5.1.1   The Role of Gender Identity

We examined the gamers' gender identity using multifactorial construct. We tested how gender impacts consumers' engagement and purchase intentions. The findings suggest that males and female consumers have different behaviors when it comes to engaging in and buying video games. The empirical results indicate that biological sex can predict consumer behavior. Evidence is provided to support gender schema theory. This study offers support to include all three unique gender-related constructs (physiological sex, psychological gender traits, and gender role attitudes) in order to understand consumer behavior and intention. We found support for the industry numbers in that gamer's physiological sex is an important determinant of their behavior and intention. That is not the case for the gamers' psychological gender, which we found important at the first level of consumer engagement (i.e., presence) and not at any other engagement level and behavior intention. This result is aligned with the consumer stream of research that sex is a better predictor than other gender identity concepts (Allison et al., 1980; Gould, 1996; Lucas and Sherry, 2004).

Gamer masculinity traits did not significantly predicting their behavior. The explanation is that we asked gamers about their general video game use, and gender identity does not play a

114

role in that. However, future research should target more specific gamer group and conduct the study. For example, gamers who play one genre would share similar traits, and the variance between their gender identities will be obvious. Our findings are not surprising, and we found support for that finding. Floros and Siomos (2012) found no significant difference between male and female gamers' play patterns and motivations when they accounted for genre. Also, gamers virtual gender difference will be eliminated when they play high engaging games (Feng et al., 2007). Thus, gender might not be a critical factor when we deal with a wide range of genre.

However, this research provides a support for the debate over whether psychological gender traits should be taken into account when studying sex or gender-related issues. This study sides with the view that psychological gender traits are not important predictors for consumer behavior (Bem, 1993; Palan, 2001; Spence, 1993). Also, gamers express themselves using video games in a way that they may not feel comfortable in real life (fantasy motivation) (Cole and Griffiths, 2007). Gender traits, especially masculinity, may have a relationship with consumer engagement and intention.

It was found that masculinity traits are strong predictor of gamer purchase intentions. However, there is no mediation effect of consumer engagement (i.e., presence, flow, and psychological absorption). That is aligned with previous research that gender differences are not statistically important in playing video game (Floros and Siomos, 2012). Gamers' masculine and feminine traits do not play a role in video game engagement because there is no difference between them when they are engaged. The study found that gender identity does not impact video game engagement and purchase intuition. We offer an explanation for this effect: gamers engaged in the game might not think about their individual differences because their mind is occupied by all of the information in the game. The new video games require the player to have

full attention, which leave little room for thinking about their gender. Alternatively, the video game industry targets male gamers, and gamers assumed that all games are designed for male gamers. Therefore, their gender identity might not play a role in engaging in the game or buying it. It is a surprising result that gender identity does not influence gamer behavior and intention.

Even though, the previous research have not found any significant correlation between gender and flow (Novak et al., 2000; Shin, 2006); we found that male and female gamers have a significant different in presence, flow, and psychological absorption. We think the results are due to the change in the environment that the consumers are dealing with. When visiting a website, consumers have a passive role, and they cannot control their environment. Consuming video games, however, allows consumers to control their experience (D. Hoffman and Novak, 2009). Therefore, male and female gamers have a different level of presence, flow, and psychological absorption. Male gamers have higher level of being engaged in video games because most of the games are designed for male gamers.

Video game consumption helps gamers shape their social and gender identity, in addition to the hedonic and functional benefits. Gamers who play with partners change their behavior, and that shapes their gender identity. For example, female gamers experience greater presence from a game when there is a gender match between self and game character. Also, female gamers increase their aggressive thoughts when they realize that they are playing with a male partner. Thus, playing with the opposite sex increases aggressive thoughts (Eastin, 2006). Also, playing in groups shape gamers' gender identity and that is seen when male gamers do not mask their offline gender when they use a female avatar, but they do reinforce idealized notions of feminine appearance and communication. Thus, playing video games effects gamers gender identity and gender roles.

In general, it is marketing myopia to think that men and women behave according to their physical gender. Gender identity affects the consumer's behavior and intention. It becomes a questionable approach that marketing scholars and practitioners simply segment consumer on the basis of physiological gender. We should examine consumers' gender identity to get better understanding of their behavior and intention.

5.1.2   The Role of Gamers' Motivations

In the study, we examined gamers' motivation to play and how that affected their video game engagement and purchase intention. We found that gamers' competition and social interaction motivations predicate gamers' engagement, especially at the deepest level (i.e., psychological absorption). Also, the relationship between gamers' social interaction and psychological absorption is negative. Gamers who play to connect with other gamers may not reach the deepest level of video game engagement (i.e., psychological absorption) because they are busy connecting with others (ESA, 2012). Also, many gamers prefer to play games rather than socializing (Selnow, 1984). Gamers' social interaction motivation affect this relationship in the opposite direction. Moreover, we did not find support that gamers' competition and social interaction motivates predicate presence and flow. Competition and social interaction required other gamers to play and most of the games are centered toward single player (Durkin and Barber, 2002; Lucas and Sherry, 2004). Thus, missing a partner to play with can create a barrier for players to get to presence and flow.

The finding that gamer fantasy and social interactive motivation are the primary motives for game playing is not surprising. The explanation for these findings could reduce the surprising results. Gamers come to play games with several motivations in mind. Most gamers come to play games with these motivations: competition, diversion, and arousal. However, if they receive

more than these motivations they will be more motivated to buy more games. To illustrate that

explanation, think about a consumer who buys a car for transportation. The primary motivation

for buying the car is transportation, but then he happily discovers that the car can give him more

than just transportation by making money through working with Uber, a company that allow

alternative service to taxi cabs by allowing people to use their private cars like taxies (Pillieci,

2014). The add-on value to the car would increase the person's engagement with his/her car and

increase his investment in that car. Thus, gamers would exercise a similar behavior when they

get more than they expect.

An alternative explanation to these results in the following logic: the consumer evaluates

the relationship and is satisfied when they get what they asked for. The customer consume the

product to satisfy needs, desire, and wants. Also, the task definition may increase customer

consumption. For example, Arm and Hammer, originally associated with baking soda and

washing soda, increased the customer ability to use the product. When consumers discover that

they can use the product to remove bad odors from the fridge, they will increase their

engagement of that product. Thus, customers increase their product consumption and in sequence

the product evaluation. The satisfaction can be explained by the confirmation and

disconfirmation process. The theory present that consumers compare their expectations with the

actual use of that product (Oliver, 1980). If the product matches the customer expectation, the

customer will be satisfied. On the other hand, if the consumption did not match the consumer

expectation, then the customer will be dissatisfied. The last case is when the consumption

exceeds the customers expectation that meaning that the customer will be loyal to that product or

brand.

However, gamers' fantasy motivation does not have a positive relationship with presence. We think that gamers need more than the first level of video engagement (i.e., presence) to get fantasy motivation. Moreover, gamers need more immersion into the game for their fantasy motivation to predicate video game engagement, and that is what happens when gamers go further in playing the game.

In regard to gamers' diversion motivation, our findings suggest that it does have a positive relationship with presence and psychological absorption, but not with flow. This result is aligned with the previous research that escapism can predict video game engagement. (Frostling-Henningsson, 2009; Yee, 2006). Moreover, gamers' diversion motivation has a surprising relationship with consumers' engagement. At first there is a positive relationship with presence. Then, there is no relationship between gamers' diversion motivation and flow. At the end, a strong positive relationship appears between gamers' motivation to escape life and psychological absorption. This can be explained by that when a gamer is motivated to avoid life' stress, he/she needs an extreme activity. For example, people who have stress during the day usually play high engaging games such as, "World of Craft" to avoid thinking about what happened during the day. In our study, we have seen a spike in time spent playing video games on Wednesday night because that is in the middle of the week. On the other extreme, people who are riding a bus or train and want to kill time will play casual games that does not need much of attention such as "Fun Run". Also, they want to be aware of their surroundings and not miss their bus stop. For this motivation, it is hard to explain the middle ground (i.e., flow) because consumers usually use this motivation to escape life and surroundings. The results explain consumer behavior in this situation and how each one serves a purpose. Therefore, gamers' diversion motivation predicts

the two extremes consumers' engagements (i.e., presence and psychological absorption) and fails

to explain the middle ground of consumers' engagement (i.e., flow).

Gamer's arousal motivation does have a positive relationship with presence and flow, but

does not support the relationship with psychological absorption. The explanation is that gamers'

arousal motivation cannot take gamers to the deepest level of engagement. Gamers who play

because the game is exciting might not want to reach the deepest level of engagement. Thus, the

primary goal for that consumer is to be entertained and have a good time, and being at the

highest level of engagement would release that excitement. Psychological absorption could be

considered as an addiction behavior if the gamers reach it frequently (Brockmyer et al., 2009).

Thus, gamers' arousal motivation can predict presence and flow.

5.1.3   The Consumers Engagement

The marketer's job is to facilitate consumer experience to co-create value. The best

consumer experience would lead them to engage in the experience. We shed the light on how

flow works in an interactive environment. When consumers are engaged, they will feel mentally

transported into the virtual environment. The reader may be tempted to ask what relevance our

model results have for marketers. To take this further, if video games are just another medium of

entertainment, media, or vehicle of advertising, is there much to be gained from studying video

game to marketers research and practitioners? Yet, it has been argued that video games have a

unique economic, social, and behavioral characteristics from a traditional marketing media

(Jenson and De Castell, 2010; Lucas and Sherry, 2004; Marchand and Hennig-Thurau, 2013).

Video games do not replace other traditional form of entertainment, but rather incorporate them.

To put things into perspective, consumers in video games can interact not only with firms and

other gamers, but also with the tools themselves; that is, they interact with gaming devices that

mediate the consumption environment. Also, in the game, gamers can create their own story and experience. For example, players in Minecraft, a popular game where players build a structure out of blocks, create their own experience. Two players may start from one point and end up with a different experience. These differences imply the need to understand consumer behavior in the interactive environment. The study of video games may simulate the real world that the consumers may transfer their behavior to.

Another important objective of this study is to explore the potential of consumer engagement as an explanatory mechanism underlying the relationship between gamers' motivation and purchase intention. The findings affirm the role of consumer engagement, including presence, flow and psychological absorption as factors that explain the purchase behavior. Flow has a greater association with purchase intention. As consumers can play games to express their gender and motivation, they are more likely to have experience flow in playing video games. However, that does not mean that presence, and psychological absorption are not important. There is a positive and a strong correlation between gamers' motivation and three level of video game engagement: presence, flow, and psychological absorption. It might be that the relationship is not linear between gamers' motivation and purchase intention.

5.1.4   The Effect of Consumer Engagement on Purchase Intention

For marketer researchers and practitioners, it is important to know the dark side of consumption. The dark side deals with the impulsive and compulsive behaviors that can influence both the purchase of the product and the consumption of that product. In light form, the consumer might play video games more than what they are supposed to play. In more extreme forms, they include a pathological form of playing video games. Mowen and Minor (2006)

121

describe negligent consumer behavior that consumers composed of actions and inactions that may negatively affect the long-term quality of the individual's life and society.

It is a real problem that video games players experience addiction; although video game addiction has not been recognized by the American Medical Association as a diagnosable disorder. There is strong evidence that adults and adolescents experience video games addiction. According to the video game addiction website, "World of Craft" is the game that they feel most addicted to ("Video Game Addiction," 2014). The gamers will start lying about how much time they spend playing and thinking obsessively about being on the computer or playing the video game. These are symptoms of addiction. In the study, we found that gamers at first deny that they play video games due to the negative association with it. That usually happens when they beginning playing video games. The gamer will expose themselves as a player after they create a habit of playing. The final step is when the gamer reaches an addiction level where they try to break from playing video games and try to disassociate with playing them. Thus, gamers might experience video game addiction, and that can be detected by looking at their playing behavior patterns.

The findings show a negative relationship with presence and purchase of video games. The consumers at first deny that they buy the product (i.e., video games). Look at a smoker when they first start smoking, they deny that they smoke. Then, the smoker will buy cigarettes and not hide it from his/her social cycle when smoking turns into a habit. That habit is feeling flow while playing video games. At the last stage of smoking cigarettes, the smoker will try to quit, and not buy cigarettes. That happens with video games. At the presence level there was a negative relationship with purchase intention. Then when the gamer reaches the flow level, the relationship turns to positive. At the deepest level of playing when the gamers reaches

122

psychological absorption, the relationship is not significant. Thus, the relationship between consumer engagement and purchase intention is not linear, where the more engaged the consumers are the more they will buy the product (e.g., video games).

5.1.5   Co-Creation of Value

Value creation refers to consumer creation of value while using the product or service; co-creation of value is the interaction function (Grönroos and Voima, 2013). Consumers not only determine the value in using a product as Vargo and Lusch (2008) suggested, but they also create that value. In our context (i.e., video games) the consumers perceive value as value-in-use, and the consumers do not focus just on economic factors. Consumers focus on the ongoing process of creating value that includes their experience and their ability to extract value. Consumers in this experience (playing video games) feel better off (positive value) through experience. Thus, value is accumulated over the course of using the product (Grönroos and Voima, 2013).

Consumer experience is an ongoing process that does not have a specific starting point, which makes the value creation a temporally accumulative process that includes past, present, and future experience. For example, thinking about a game (e.g., Call of Duty) before playing increases the likelihood that the consumer will be engaged while playing that game. Also, consumers' memories after playing the game, and the violent scenes and emotional moments increase the gamers' engagement. Therefore, the value created by consumers is not created while physically interacting with a device to play, but it may include imagined and indirect interaction with the product. Therefore, consumers (i.e., gamers) need to maintain a balance between presence and psychological absorption (i.e., flow) to get the best experience playing video game. We have provided empirical evidence that consumers have the best experience while in flow state and more engagement in the games would create a negative effect in the long run.

5.2   Managerial Implication

The findings of this study provide valuable insights of consumer engagement that marketing managers may utilize in designing their products and services. Also, these findings would help managers with relationship marketing and/or manage engagement strategies (see Brodie, Ilic, Juric, and Hollebeek, 2011; Peelen, van Montfort, Beltman, and Klerkx, 2009). For example, not all consumers desire to fully engage in a game. We found that consumers who want to escape life "gamers' diversion motivation" want the extreme games such as "Call of Duty". On the other hand, consumers who want only the excitement of the game do not want to reach that extreme, and they prefer more laidback games such as, "Candy Crush". That means not all consumers want and desire the same experience and engagement. Thus, we have argued that consumers' engagement is a sustainable intermediate variable between the consumer experience and the commercial desirable consumer behaviors and intentions.

Managers and developers of products (i.e., video games) should design the product with female consumers in mind. The product design should match their motivations to increase their engagement and purchase intention. For example, the traditional car racing, NASCAR, is usually associated and targeted towards men and considered to be a masculine activity. However, in the past few years NASCAR has included more feminine advertising because 40% of the viewers are women. In our context, many managers and game developers target men because they spend more time playing games, but 47% of the players are women. Thus, managers should include all consumers who use the product. If managers design the product including female consumers, that would increase their motivation, satisfaction, and chance of engagement in the experience. In other words, when we female gamers view video games as viable option to satisfy their motivations, they will play and buy more games. Consequently, if women view video games as a

cross-sex activity, female gamers will be more engaged in playing video games, and they will spend more time in such activities.

This study can also help parents and health care workers to identify addicted game users. The number of hours is one important indicators as many previous studies showed (Fisher, 1994; van Rooij, Schoenmakers, van den Eijnden, Vermulst, and van de Mheen, 2012). In this study, parents and health care workers can identify addicted gamers by their engagement. The highest level of consumer engagement is psychological absorption. If the consumer reached that level frequently, that might be a symptom of addiction behavior. We have seen the negative significant relationship between psychological absorption and purchase intention and that was a symptom mentioned on the video games addiction website. Thus, the study of consumer engagement in video games helps parents and health workers to identify symptoms of obsessive users which leads to addiction.

Another critical managerial issue is the marketing communication strategies. Gender role is an important issue to consider. The masculinity and femininity of the ads play a role in consuming, viewing, and engaging in the product. Marketers should not only "girl the game" in simple way by adding pink color and female pictures, but also marketers should include cosmetic changes, reduce the complexity of design and consider the female gamers cognitive ability. Media and advertising could shape social value rather reflecting that value.

5.3   Limitation and Future Research

A potential limitation of the study is the generalizability of the study. We used Amazon Mechanical Turk (Mturk) to get a more generalizable population. Some research shows that the workers in Mturk are younger than the general U.S. Population (Kang, Brown, Dabbish, and Kiesler, 2014). We had a wide representative sample, and we hoped that we could get equal

representation from each state and age group. In the study, seventy percent of the participants were between 18-39 years which is aligned with the industry. In state representation, the highest participants are from three states: California, Florida, and New York. The participants in these states might not be the best consumers to represent that state and that age group. However, they are the best group of participants that we can get at this stage. We might use a consumer panel with help from a big retailer (e.g., GameStop) to get better participants that consume and play video games. Moreover, the participants on Mturk are focusing on finishing the task and getting the monetary incentive, especially since we offered a relatively high incentive of $0.50. Some researchers found that when lowering the monetary incentive, the participation rate would be lower (Berinsky, Huber, and Lenz, 2011). However, the author recommended a monetary incentive between $0.50 and $ 0.75 to get decent response. Some participants are living out of answering survey which increases the likelihood that they have seen similar questions. Thus, using Mturk has benefits and limitations.

Another potential limitation is related to how we conducted the study. In this study, we tested all the measures on scales, and we have not manipulate any variable. Experimental design is the ultimate way to establish causal relationship. Experimental design is considered to the best way to establish this. According to Cook and Compbell (1979), experimental design can establish causality. In fact, there is no true experimental design because it is almost impossible to control all other factors. However, quasi-experiment is possible. It is possible that the strength of the causal relationship among these construct can be achieved by controlling the environment more strictly. In future research, we should do a series of controlled designed experiment would be useful to continue theory development in the future. Experimental design has a high internal validity which means it can control the environment in which the experiment is taking place. On

the other hand, the experiment is low in external validity, which means the generalizability of the study. The researcher has to make the choice between the internal and external validity (Hair et al. 2006).

We must admit that our framework is only a "best fit". Baggozi and Yi (1988) suggested comparing equivalent models along with testing a proposed model. An alternative model may exist that has an identical estimate of the population covariance matrices and fits the observed data well. Through comparing the two models, the researchers may gain more confidence in the robustness of the hypothesized model. This study was an exploratory study and many relationships proposed were evaluated for the first time. The primary reason for this study is to identify the relationships between gender identity and gamers' motivations and purchase intention. Therefore, comparing equivalent models is a challenging option to provide robustness of the proposed model.

One limitation is that we tested thirteen genre, and we ask the gamers about their engagement and intention, in general. This method might eliminate the variance between gamers. For example, the effectiveness of in-game advertising may differ based on the game that it placed on (Terlutter and Capella, 2013). Future research may investigate consumers' engagement in a distinct genre (e.g., casual, sport, and fantasy) or few different extreme genre (e.g., shooter vs. casual). In the study, we test the gamers' patterns and intentions in playing video games in general. When we examine consumers' engagement in a specific genre, the gamers will share many similarities in regards to their demographic, social sphere, and economy. Gamers who play one genre show great variance if there is any. To illustrate, gamers who play casual games are female, young, middle-class gamers. The similarities between gamer make them a distinct group of consumers that might have their similar preference. Thus, we can segment them as one group

for products that satisfy their needs. This investigation may increase our understanding of specific groups of gamers.

In the future, we should investigate and document the role of gender in playing video games, consuming virtual products, and playing simulation games. We should not underestimate this research. That work would explain how technologies, especially interactive environments, shape consumers' behavior. Also, the new feminine movement and legalizing same-sex marriages encourage marketing researchers to investigate how these groups consume and engage in products and services. There is really no excuse for marketing research not to go further in this concept. It will have a great implication not only in the gaming industry, but also in how males and females consume product in the interactive environment.

APPENDIX

LIST OF MEASUREMENT SCALES

Construct	Please indicate your agreement with following statements: When playing video games,	Reference	Reliability (pervious)	Reliability (this study)
Psychological Absorption	1. I feel absorbed into the game* 2.I lose track of where I am* 3.I feel different from my real self 4. Time seems to kind of standstill or stop 5. I feel spaced out	(Brockmyer et al. 2009)	0.83	0.82
Flow	Please indicate your agreement with following statements: 6. I don't answer when someone talks to me* 7. I can't tell that I'm getting tired* 8. If someone talks to me, I don't hear* 9.I feel like I just can't stop playing* 10.The game feels real* 11.I get wound up* 12.Playing seems automatic* 13.I play without thinking about how to play 14.Playing makes me feel that I am in flow 15.I think I have ever experienced flow in playing 16.Most of the time I play game I feel that I am in flow	(Brockmyer et al. 2009; Novak et al.2000)	0.83	0.88
Presence	Please indicate your agreement with following statements: 17.Things seem to happen automatically* 18.My thoughts go fast 19.I play longer than I meant to 20.I lose track of time 21.I really get into the game	(Brockmyer et al. 2009)	0.83	0.88

Construct	Items (6-point Likert Scale)	Reference	Reliability (pervious)	Reliability (this study)
Masculinity	The following word describes me… 1. Defend my own beliefs* 2. Independent* 3. Assertive 4. Strong personality 5. Forceful* 6. Have leadership abilities 7.Willing to take risks 8. Dominant 9. Willing to take a stand 10.Aggressive*	(Palan, 2001)	0.94	0.88
Femininity	The following word describes me… 11.Affectionate 12.Sympathetic 13.Sensitive to needs of others 14.Understanding 15.Compassionate 16.Eager to soothe hurt feelings 17.Warm 18.Tender 19.Love children* 20.Gentle	(Palan, 2001)	0.88	0.88
Gender Role Attitude	Please indicate your agreement with following statements: 1. Men are more competitive than women* 2. Men are generally more adventurous than women* 3.Men are generally more egotistical than women 4. On the average, men are more arrogant than women 5. Women are more gentle than men 6. Men are more independent than men 7. Men are more sure of what they can do than women are 8. Compared to men, women tend to be gullible 9. Compared to men, women are more able to devote themselves completely to others 10.Compared to men, women tend to be weak	(Ulrich,2013)	0.84	085 &0.83

Construct	Items (6-point Likert Scale)	Reference	Reliability (pervious)	Reliability (this study)
Competition	Please indicate your agreement with following statements: 1. I like to play to prove to my friends that I am the best 2. When I lose to someone, I immediately want to play again in an attempt to beat him/her 3. It is important to me to be the fastest and most skilled person playing the game 4. I get upset when I lose to my friends	(Sherry and Lucas, 2006)	0.86	0.87
Challenge*	Please indicate your agreement with following statements: 5. I feel proud when I master an aspect of a game 6. I find it very rewarding to get to the next level 7. I play until I complete a level or win a game 8. I enjoy finding new and creative ways to work through video games		0.8	0.78
Social Interaction	Please indicate your agreement with following statements: 9. My friends and I use video games as a reason to get together.* 10. Often, a group of friends and I will spend time playing video games. 11. I play video game with someone because I cannot play by myself.		0.81	0.80
Diversion	Please indicate your agreement with following statements: 12. I play video games when I have other things to do. 13. I play video games to avoid thinning about some of my real-life problems. 14. I play video games to escape the real world.* 15. I play video games instead of other things I should be doing.		0.89	0.86
Fantasy	Please indicate your agreement with following statements: 16. I play video games because they let me do things I can't do in real life. 17. Video games allow me to pretend I am someone/somewhere else. 18. I like to do something that I could not normally do in real life through a video game. 19. I enjoy the excitement of assuming an alter ego in a game.		0.88	0.94
Arousal	Please indicate your agreement with following statements: 20. I find that playing video games raises my level of adrenaline.		0.85	0.89

21. Video games keep me on the edge of my seat.
22. I play video games because they stimulate my emotions.
23. I play video games because they excite me.

Construct	Items (6-point Likert Scale)	Reference	Reliability (pervious)	Reliability (this study)
Purchase Intention	Please indicate your agreement with following statements:	(park and Kim, 2008)	0.89	0.95
	1. I intend to purchase video game in the near future (i.e., next 3 months).			
	2. I will definitely purchase video game in the near future (i.e., next 3 months).			
	3. I have high purchase interest to purchase video game in the near future (i.e., next 3 months).			
	4. I will probably purchase video game in the near future (i.e., next 3 months).			
Time Constraint*	Please indicate your agreement with following statements:	(Srinivasan and Rachrrod, 1991)	0.83	0.87
	1. I seem to be busier than most people, I know.			
	2. Usually, there is so much to do that I wish I had more time.			
	3. I usually find myself pressed for time			
Problem Recognition*	Please indicate your agreement with following statements:	(Tejeiro et al. 2002)	0.69	0.92
	1. I think I play video games too much. (Yes/No)			
	2. I think I have some type of problem associated with my video game playing. (Yes/No)			
	3. My loves ones are worried because they think I play video games too much. (Yes/ No)			
	4. When I am not playing video games, I keep thinking about them (i.e. remembering the games, planning the next game, etc.)			
	5. I spend an increasing amount of time playing video game			
	6. I have tried to control, cut back or stop playing, or I usually play video games over a longer period than I intended			
	7. When I lose in a game, or I have not obtained the desired results, I need to play again to achieve my target			
	8.When I can't use the video games, I get restless or irritable			
	9. When I feel bad, e.g. nervous, sad, or angry, or when I have problems, I use the video games more often			
	10. Sometimes I conceal my video game playing to the others, this is, my parents, friends, professors…)			
	11.In order to play video games I have skipped classes or work, or lied, or stolen or had an argument or a fight with someone			
	12.Because of the video game playing I have reduced my homework, or I have not eaten, or I have gone to bed late, or I spent less time with my friends and family			

*denotes that the item or construct was deleted.

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135

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