Examining the Influence of Guild Engagement and Value Experience on MMORPG Gamers' Satisfaction and Continuance Intention for Game Playing

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Abstract

Massively Multiplayer Online Role-Playing Game (MMORPG) is a popular genre of electronic games with an increasing share of gaming market. Because the success of MMORPG games depends on players' sustained use, this research focuses on examining players' continuance intention for game playing and posits that it can be influenced by perceived values of playing MMORPGs. According to service-dominant logic, value experiences are not acquired but co-produced by the players themselves altogether during gaming. Therefore, this study further investigates the antecedents of such co-produced value experiences in the MMORPG games. Specifically, drawing on Higgins' (2006) Regulatory Engagement Theory (RET), this study proposes that engagement in the MMORPG's guild allows gamers to improve their co-creation of value experiences with other players during gaming, which in turn enhances the gamers' continuance intention. To examine these issues, this research formulated a model with four constructs: (1) continuance intention, (2) satisfaction, (3) perceived value, and (4) players' guild engagement. An online survey was also conducted to collect data and to test the proposed hypotheses.

Keywords: Guild engagement, perceived value, value co-creation, regulatory engagement theory, MMORPG

1. Introduction

As high-speed Internet connections and powerful computer hardware prevail with a steady decrease in cost, Massively Multiplayer Online Role-Playing Games (MMORPGs) become the vanguard of a new generation of computer games. MMORPGs are often fantasy or science fiction-themed in which, thousands of players interact with each other through the use of avatars (Meadows, 2008). During gameplay, players partake in a variety of activities for enhancing combat capability, social status, avatar appearance, equipment quality, etc. (Yee, 2006a). Because players are typically motivated by differentiated goals, they can cooperate with each other to advance their avatars. Therefore, MMORPGs are equipped with functional artifacts that facilitate players to bond together (Yee, 2006b; Ang et al., 2007). Guilds are such artifacts that function as in-game communities (Guegan et al., 2015). By affiliating with guilds, players can easily accumulate resources, build relationships, seek status, and collaborate with each other to defeat challenges in the game (Williams et al., 2014). Thus, engaging with guild activities engenders additional value to players, which could not be obtained through single play (Yee et al., 2012).

Traditionally, perceived value involves a price/quality tradeoff of product/service (Oliver, 1999; Zeithaml, 1988; Monroe, 1990), which can more satisfacto-

rily explain consumer behavior (cf. Gallarza et al., 2011). Based on previous MMORPGs literature, perceived value was found to increase players' purchase/ repurchase intention, willingness to pay premium prices, positive word-of-mouth, and game loyalty (e.g., Park and Lee, 2011a, 2011b; Rezaei and Ghodsi, 2014; Shin, 2010). However, existing literature has been criticized for pitfalls, such as inconsistent conceptualizations and lack of inconclusive determinants for perceived value (Sanchez-Ferandez and Iniesta-Bonillo, 2007). In the context of MMORPGs, these issues are especially prominent as players acquire value not only from consuming the "goods" of MMORPGs but also from experiencing the "services" offered during gameplay (Kohler et al., 2011). Thus, illustration of MMORPGs' perceived value should include those derived from the artifact of the game and those acquired from the experiences of gaming. Furthermore, MMORPG players do not merely consume gaming experiences but also contribute to value creation through inter-players interactions mediated by games' features (e.g., guilds). Thus, it is important to understand if players' active engagement with such activities influences their perceived value of MMORPGs (Holbrook, 1996). In order to shed light on the research gaps, this study attempts to address the following issues: First, this study will define perceived values of MMORPGs and then examine their impacts on gamers' satisfaction and repurchase intention; this will allow us to understand the importance of perceived values to MMORPG players. Second, this study will explore how gamers form value perceptions from MMORPGs. Although past research has identified experience as a determinant to perceived value (Holbrook and Hirschman, 1982; Holbrook, 1996), the mechanism through which it works is relatively unexplored. Based on Regulatory Engagement Theory (RET) (Higgins, 2006; Higgins and Scholer, 2009), perceived value is the outcome of motivational experience and its intensity can be affected by one's engagement with activities relevant to the value target. Since participating guild activities is pivotal to enjoying MMORPGs play, this study proposes that gamer's guild engagement facilitates players to co-create and intensify the gaming experience, which in turn can increase their perceived value of MMORPGs. Consequently, the research questions are as follows:

- What are the dimensions of perceived value of MMORPGs, and do they influence gamers' post-consumption attitude and behavior (i.e., satisfaction and repurchase intention of MMORPGs) similarly?
- Whether players' guild engagement influences their perceived value of MMORPGs?

2. Theoretical Foundation

2.1 Perceived Value

Perceived value was conceived to be the outcome of an evaluative judgment. Based on the theory of utility, earlier scholars held that consumers derive value perception according to the difference between the utility provided and the price paid for products/services (Tellis and Gaeth, 1990). Utility is typically evaluated based on the economic worth of what is being offered by "a bundle of product/service attributes", which considers value as an "objective state of being". This approach is thought to be too narrow to capture consumers' perceptions of "what is received" and "what is given" (Monroe, 1990; Zeithaml, 1988). Specifically, price cannot represent consumers' sacrifices in the aspects of time, effort and research spent to acquire products/services. Meanwhile, the quality is typically used to capture the excellence of goods/services received; which is also insufficient to encompass all the benefits of the goods/services being offered. Thereafter, several researches have refined the notion of value in terms of "value-in-exchange" and "value-in-use" (Vargo and Lusch, 2004). For instance, Thaler (1985) suggested a mental accounting

model positing that, perceived value is the sum of transaction utility and acquisition utility. The former represents the difference between a consumer's internal reference price and the actual price paid; the latter refers to a comparison between perceived benefit and actual price of a product or service. Applying Gutman's (1982) means-end model, Zeithaml (1988) further argued that perceived benefit of a product or service hinges on consumers' use of its offerings in situations of importance to them (Gutman, 1982). The means-end approach opens a new research perspective in understanding value (Holbrook and Hirschman, 1982). Specifically, consumers are conceived to be reflexive when making judgment of a product or service. Value, more than being a static state of consumers' cognitive assessment of product/service offerings, is considered to be a phenomenological experience of consumers' engagement with product/service offerings in specific situations (Woodruff and Flint, 2006).

Subsequent research followed this approach and focused on delineating various forms of value-in-use in the context of consumption. Babin, Darden, and Griffin (1994) drew upon the outcomes of consumption experience and developed a value scale composed of utilitarian and hedonic dimensions. Sheth, Newman, and Gross (1991) suggested five forms of consumption value: functional, social, emotional, epistemic, and conditional. Lai (1995) identified eight types of generic product benefits: functional, social, affective, epistemic, aesthetic, hedonic, situational, and holistic. Holbrook (1994) proposed a typology of value based on three dimensions: intrinsic/extrinsic,
self-oriented/other-oriented, active/passive. These were extended to eight kinds of customer value: efficiency, excellence (quality), politics (success), esteem, play, esthetic, morality, and spirituality. These studies considered value in terms of "a perceptual state of being" that results from an individual's judgment on how good or bad the experience is (Holbrook, 2006). Though useful, such researches still offer little insights into how value perceptions emerge. Hence, the following turns to discuss the process issue of value experience.

2.2 Value Co-creation

Service-dominant logic (SDL) suggests that consumers are always co-creators of value that is essentially value-in-use (Ramirez, 1999; Vargo and Lusch, 2004). Specifically, at the interface of the firm with its consumers or any other stakeholders, product/service offerings are exchanged and certain interactions among the parties occur. Such interactions involve either reciprocal actions or influences of persons or things on each other (Czpiel et al., 1985). Thus, consumers derive value perceptions not only from the exchange of product/service offerings but also through the interactions made with the offerings or supplier/other stakeholders. As an example, in the former case, a patient's interactions with a doctor increase his/her knowledge of taking the medicine properly, allowing the patient to receive the full value of the medicine prescribed; in the latter case, interactions between a consumer and a personal fitness coach constitute the primary value of their fitness program. Therefore, perceived value of product/service offerings can be acquired through the non-interaction component (e.g., derived from exchanged product/service offerings) and the interaction component (e.g., derived from altered consumer experience or modified product/service offerings) (Berthon and John, 2006).

Consistent with SDL, Richins (1994) argued that a consumer derives the value of a possession based on the interactions with made with it. Richins identified value in terms of possible relationships of meanings to possessions, namely, public value and private value. Public value arises from meanings inter-subjectively attached by both the consumers and other stakeholders to the possessions, such as social relationship ties and self-expression (Kim, Gupta, and Koh, 2011). Public value results from

reciprocal actions (e.g., social relationship ties) or influences (e.g., self-expression) made between the consumers and other stakeholders; which also belongs to the interactive component of perceived value. Private value is conceived based on the consumers' subjective meanings assigned to the possessions, such as their functional and emotional significance (Rezaei and Ghodsi, 2014). In the purest case, private value captures only the non-interactive component of perceived value (i.e., value derived from exchanged product/service offerings). Accordingly, this study argues that public value and private value can represent the interactive and the non-interactive component of perceived value, respectively. However, since an individual's subjective meanings are also shaped by the interaction with other stakeholders and hence, contained the inter-subjective meanings are co-created and shared by the consumer with others. This study would also like to contend that private value can be influenced by public value.

2.3 Regulatory Engagement Theory (RET)

Given consumers' role in constructing value experience, there is a need to know how their active engagement influences valuation of products/services (Kumar et al., 2010). This can be illuminated by the Regulatory Engagement Theory (RET) by Higgins (2006). RET conceptualizes value as a motivational force experience (i.e., attraction or repulsion) regarding one's goal pursuit (Higgins, 2006). Such value experience is composed of the direction (i.e., towards or away) and the intensity (i.e., strong or weak) of motivational force (Higgins and Scholer, 2009). Motivational force direction is influenced by the outcomes of goal pursuit (e.g., product/service offerings) such that the outcomes: (1) possess hedonic properties, (2) satisfy one's needs, and (3) meet the shared beliefs of social norms (Higgins and Scholer, 2009). On the other hand, motivational force intensity is determined by one's strength of engagement in goal pursuit activities.

In contrast with SDL which explores how consumers' interactions with relevant stakeholders and products/services co-create value experience in terms of desirable goal pursuit outcome, RET stresses the goal pursuit process in terms of the quality of such interactions and how it intensifies the value experience. Engagement strength captures the quality of such interactions which represents one's sustained attention in terms of the state of being involved, occupied, fully absorbed, or engrossed in something (Higgins, 2006). By stressing the role of engagement strength, the occurrence of value experience can be understood; that it is dependent not only on whether the outcomes of goal pursuit meet the desired goals but also on the individual's state of engagement strength during goal pursuit activities (Pham and Avnet, 2009). RET suggests that engagement strength is affected by (1) opposing interfering forces, (2) overcoming personal resistance, (3) having regulatory fit, (4) increasing the likelihood of achieving goal pursuit outcomes, and (5) using proper means and sources of motivational force direction (Higgins and Scholer, 2009). Accordingly, consumers' value experiences can be altered through manipulation of these sources of engagement strength, even without having to change the outcomes of their goal pursuit. Since the effect of engagement on value experience has received least attention in the literature (Scholer and Higgins, 2009), this study will examine whether consumers' engagement in goal pursuit activities influence their value experience.

3. Research Model and Hypotheses

MMORPG. An MMORPG is a self-contained, virtual world in which many users simultaneously participate in different role-playing scenarios (Griffiths et al., 2004). Three features contrast MMORPGs with other genres of online game. First, players choose an avatar or a

character to represent them in the game (Achterbosch, Pierce, and Simmons, 2008). The avatar is viewed as an idealized version of players' own personality (Ducheneaut et al., 2009); hence, players will expend significant efforts to maintain the avatar and use it to move, communicate, and engage in various actions in the game (Chuang, 2006). Second, players typically affiliate with certain communities, called guilds, in order to seek resources or collaborate with others to advance characters or accomplish combats. Guild members can make use of the built-in chat or instant messaging services to form social relationships and improve social interactions; thus, enhancing gaming enjoyment and facilitating task collaboration (Williams, 2006). Lastly, MMORPG creates a persistent world in which, events happen steadily even while players have left the game (Yee, 2006b). Such dynamism stimulates players to keep in touch with the gaming world, motivating them to renew game subscription continuously.

The sticky features turn MMORPG to become the dominant genre of online game. Super Data Research (2015) indicated that MMO games generated a total sale of $11 billion in 2014 alone, which accounts for 21% of worldwide digital game market. Popular titles, like Ultima Online, EverQuest, Dark Age of Camelot, and World of Warcraft (WoW) had a rapid increase in subscriptions for nearly 36 consecutive months (Ryahl, 2012). These facts manifest that MMORPGs are generally successful in attracting players. However, MMORPG players are notoriously fickle that even hot titles can quickly lose subscribers. For example, WoW had over 12 million subscriptions towards to end the 2014. Along with the aging of the game and that increasing players have tried out the endgame, WoW lost about 3 million subscribers during the first three months of 2015 (Weinberger, 2015). Because MMORPG publishers rely heavily on user subscription to generate income (Ryahl, 2012; Moon et al. 2013), retaining subscribers become increasingly important to publishers as new subscribers inevitably decrease over time. Therefore, it is important for publishers to understand the motivation behind continuous MMORPG play.

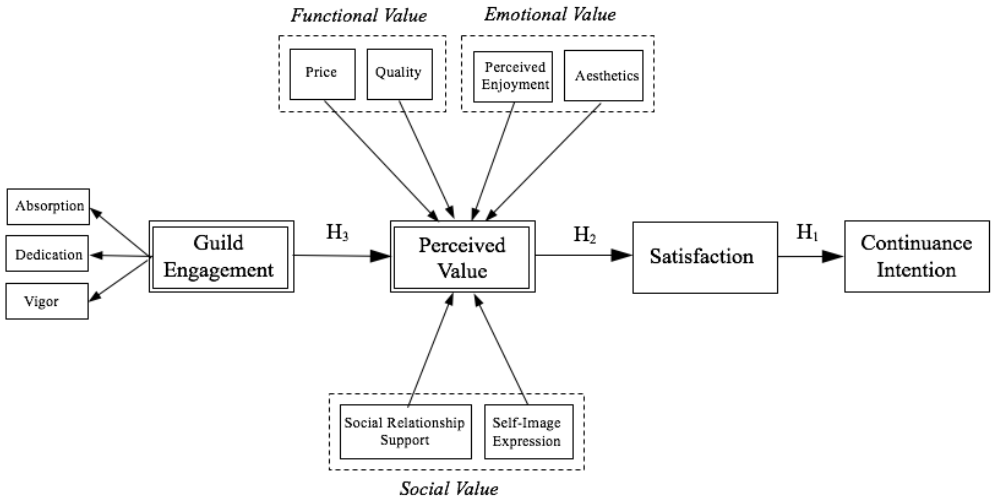

Figure 1: Research Model of Perceived Value as Influenced by Guild Engagement, Social, Functional, and Emotional Values.

Continuance Intention. Continuance refers to continued use rather than first-time use. In this study, continuance intention is defined as a player's intention

to repeatedly play an MMORPG game. Earlier research assumed that continuance co-varies with acceptance and adopted the same set of pre-acceptance variables to account for both acceptance and continuance decisions (e.g., Davis et al., 1989; Karahanna et al., 1999). However, this approach cannot explicate the "acceptance-discontinuance anomaly" because users' psychological motivations that have emerged after the initial acceptance can override their prior beliefs and then change subsequent continuance decisions (Bhattacherjee, 2001a, 2001b); hence, a more satisfactory account on continuance decisions needs to incorporate factors that capture users' post-acceptance psychological states.

Satisfaction. In the marketing literature, satisfaction has long been suggested as a pivotal determinant of repurchase intention or customer loyalty (Oliver, 1980). Satisfaction is defined as an affective state arising from cognitive appraisal of experiences (McKinney, Yoon, and Zahedi, 2002). It is typically captured as (1) positive (satisfied), (2) indifferent, or (3) negative (dissatisfied) feeling or response to consumption-related fulfillment (Oliver, 1997). Being an attitude-like construct (Latour and Peat, 1979), satisfaction has been argued by Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) to be influential to one's behavioral intention (Fishbein and Ajzen, 1975; Ajzen, 1985). Furthermore, Bagozzi's (1992) appraisal-emotional response-coping framework suggests that favorable appraisals of behavioral outcome can stimulate volitive desires or relieve appetitive desires (i.e., the occurrence of outcome-desire fulfillment event), which in turn can engender positive emotional responses (e.g., pleasure) resulting in coping responses of intending to enjoy, maintain or increase the outcome. Since satisfaction with an MMORPG reflects players' positive emotional response arising from their cognitive appraisals of playing experiences, the self-regulatory coping response would be to play the same game continually in order to enjoy, maintain or increase the favorable outcome. Indeed, the predominant consensus of marketing research indicates that satisfied customers tend to use and repurchase a product or service more frequently than dissatisfied customers do. Moreover, extant information systems (e.g., Bhattacherjee, 2001a, 2001b; Deng et al., 2010; Zhao et al., 2012) and gaming research (e.g., Sun et al., 2014) also corroborated the satisfaction-continuance relationship. Therefore, the first proposition of this study is that: Player's satisfaction with a MMORPG game is positively associated with his/her continuance intention of the game.

Perceived Value. As developed in Section 2, perceived value captures consumers' cognitive evaluations of their experience with product/service offerings. Based on the SDL perspective, it is comprised of functional value, emotional value, and social value; the first two reflect private or non-interaction value component, while the last represents the public or interaction value component.

Functional value refers to the perceived utility of an MMORPG based on the game's capacity for functional, utilitarian, or physical performance (Sheth et al., 1991). Following Sweeney et al. (2001), this study defines functional value in terms of price utility and functional quality. Price utility is derived from players' perceived efficient use of money for acquiring an MMORPG (Thaler, 1985). Functional quality on the other hand, refers to overall excellence and expected performance of MMORPG. Because MMORPG is a software program, its functional quality can be manifested in its user-friendliness, performance reliability, and absence of software bugs (Kim et al., 2011). Moreover, MMORPG is constituted by multimedia artifacts; hence, the quality of graphical and acoustic features is also an essential component of MMORPG functional value.

Emotional value refers to the perceived utility of MMORPG based on the game's capacity to arouse feelings or affec-

tive states (Sheth et al., 1991). Such emotions are different from affective moods in that, they possess greater psychological urgency, motivational potency, and situational specificity (Westbrook and Oliver, 1991; Rezaei and Ghodsi, 2014). Prior hedonic value research suggested that, emotional attraction due to consumption of goods/services is derived from their entertainment worth (Babin et al., 1994). In addition, players in the MMORPG depend principally on functional, decorative, and social props to interact with others in the virtual world. The visual appearance, sound effects, background fiction, provenance, and customizability of such digital items are very likely to arouse players' emotional response (Park and Lee, 2011a, 2011b). Accordingly, this study considers emotional value as comprised of two essential components: perceived enjoyment and aesthetics (Kim et al., 2011; Lin and Lin, 2011). Perceived enjoyment is defined as the extent to which playing MMORPG is recognized to be enjoyable, interesting, pleasurable, and capable of enticing curiosity in its own right (Teo et al., 1999; Turel et al., 2010; van der Heijden, 2003). Aesthetics is defined as the perceived visual and musical appeal of the digital artifacts presented in the MMORPG (Kim et al., 2011; Turel et al., 2010).

Social value refers to the utility derived from a MMORPG's ability to enhance players' social self-concept (Turel et al., 2010; Kim et al., 2011; Sheth et al., 1991). MMORPG players experience benefits of enhancing social self-concept in two-folds. First, the real-life idiosyncratic attributes of players are masked in the virtual world. The only visible cues of other players are their avatars and their costumes and affiliated guild names. Guilds are created and exist only in the virtual world based on the criteria internal to the game and does not have any connection to social reality. When players join a specific guild, the act itself expresses symbolic meanings to others that he or she becomes identified with that social group (Guegan, Moniner, and Buisine, 2015). Since individuals with the same social identity tend to demonstrate in-group favoritism (Postmes, 1998), players become easily connected with the affiliated guild members and acquire their social support (Trepte, Reinecke, and Juechems, 2012). Social relationship support, hence, is posited to be one of MMORPG's social values; this refers to MMORPG's capability to help form, maintain, and enhance interpersonal relationships (Kim, et al., 2011). Second, the use of game items also provides social value to players. Typically, there are three kinds of digital game items: (1) functional, (2) vanity, and (3) social (Guo and Barnes, 2009). Functional props are used to increase the offensive power of characters in the game; vanity props are utilized to adorn characters; lastly, social props are items that are given to other players as gifts. Because some game items are appealing but rare, using them not only enhances self-image but also increases status of players in the virtual world (Park and Lee, 2011a, 2011b); therefore, social self-image expression is considered to be another social value of MMORPG. This refers to the game's capability of enhancing players' image in the eyes of others (Kim et al., 2011).

Based on the marketing literature, Expectation-Disconfirmation Theory (EDT) is the dominant perspective to examine the development of satisfaction among individuals (Oliver, 1980). EDT presumes that satisfaction is a state of emotional response resulting from cognitive evaluation processes (McKinney et al., 2002). Consumers derive their disconfirmation belief of consumption experience by comparing perceived performance against expected outcome (Bhattacherjee, 2001). Positive disconfirmation occurs when perceived performance exceeds expected performance which leads to satisfaction response and repurchase intention. EDT suggests that disconfirmation belief is the single-most pivotal cognitive determinant of satisfaction; however, subsequent research found

that perceived performance also has a significant impact on satisfaction (Churchill and Surprenant, 1982; Tse and Wilton, 1988; Bolton and Drew, 1991). Furthermore, Bagozzi (1992) argued that there are self-regulatory mechanisms at work in the attitude-intention relationship. He proposed that individuals evaluate the outcomes first and then, such appraisals of outcome-desire lead to specific emotional reactions (e.g., satisfaction); this in turn arouses coping responses of behavioral intentions. Based on the framework, perceived performance can also directly influence satisfaction aside from its indirect effect through disconfirmation belief; the latter is the only presumed possible effect based on EDT. Therefore, this study focuses on investigating the relationship between perceived performance and satisfaction. Since perceived value captures players' evaluation of MMORPG performance and the consequences of playing it (Woodruff, 1997; Grace and Weaven, 2011), this study argues that perceived value plays similar role as perceived performance of EDT or as cognitive appraisals of Bagozzi' (1992) framework. Consequently, this study contends that perceived values of MMORPG positively influence players' satisfaction of the game (Zhao et al., 2012), which leads to the study's second hypothesis that: Player's perceived value of a MMORPG game is positively associated with his/her satisfaction with the game.

Guild Engagement. Social dimension and immersive experience are chief motivations for people to play MMORPGs (Yee, 2006; Yee, Ducheneaut and Nelson, 2012). This is because MMORPG provides a new social environment for players to get away from their everyday real-life (Guegan et al., 2015). In the game, players are asked to choose a class (e.g., warrior, mage, hunter, etc.) at the outset. Each class has its own skills and limitations and players engage in various game activities using the skills of the chosen class. Activities of the game include but not limited to: slaying monster antagonists, attacking castles, scavenging goods, and trading merchandize. In addition, players often spend much of their time in guilds which have formalized membership and rank assignments that highly encourage player participation. For example, special roles in the guild that have emerged through social interaction include guild leader, "tank" and "puller". "Tank" refers to the player responsible for redirecting an enemy's attention to himself during a melee attack to protect other players in the game. He is usually heavily armored and is expected to withstand large amount of damages. A "puller" is the player responsible for drawing out a monster or an enemy away from its group into the hands of the puller's ally. Aside from these roles, players engaging in guild activities may conduct the following social interactions: managing and coordinating the guild members, seeking and providing helpful tips and friendly remarks, and participating in game and real life chats (Ang and Zaphiris, 2010). The abovementioned roles are informal and guild activities are optional; yet, they enrich players' gaming experiences. For example, Ang and Zaphiris (2010) found that core guild members are usually knowledgeable players who contribute by offering help and developing the guild as a pool of resource that would assist other players to complete their quests. By so doing, they enhance their self-image in the eyes of other guild members as well as increase their innate pleasure of playing the game. Ang and Zaphiris (2010) also found that peripheral guild members, like newbies and freeloaders, are the ones who seek help at most times. These players use the guild only as an instrumental tool for task completion, thus, increasing their perceived value of value for money. These observations indicate that the nature of guild engagement in MMORPGs is in actuality, value co-creation among its members.

Theoretically, Higgins and Scholer (2009) argued that people experience value in the form of motivational force direction. While the act of engaging in guild activities,

in itself, can enhance players' motivational force direction, the extent to which players engage in these activities is also an important aspect of motivational force direction that increases players' value perceptions. Although scholars agree that engagement is a psychological phenomenon closely linked with individuals' interactive experiences (Brodie et al., 2013), each present different approach in conceptualizing it. Some scholars considered engagement as an undertaking of specific interactive experiences (Van Doorn et al., 2010), while others contend it as a motivational state (Nolan et al., 2007) or a psychological process that aggregate transient motivation states into sustained cognitive evaluations, which then leads to affective response (Bowden, 2009; Mollen and Wilson, 2010). The author of this study, however, conceives engagement as a persistent and pervasive psychological state comprising of cognitive, affective, and behavioral aspects. It was operationalized in terms of absorption, dedication, and vigor (Patterson et al., 2006). Absorption is a pleasant state of being immersed in one's work (Wefald and Downey, 2009); dedication, on the other hand, involves strong involvement, enthusiasm, and sense of inspiration to the job/task; and vigor refers to the willingness to invest efforts, having enough stamina and strength to continue, and being persistent when confronted with difficulties. Accordingly, based on RET (Higgins, 2006; Higgins and Scholer, 2009), this study argues that players who are highly active, strongly involved, and deeply concentrated on guild activities tend to perceive greater value of playing MMORPGs; thus the third postulation of this study is that: Player's guild engagement is positively associated with his/her perceived value of the game.

4. Method

4.1 Data Collection

This study used a web survey tool to collect opinions from MMORPG players. Participants were recruited through popular game-related Internet forums in Taiwan, including PTT (ptt.cc) and Bahamut (www.gamer.com.tw). In order to rule out differential impact of individual games, this study focused on studying World of Warcraft (WoW), which is one of the most popular MMORPG and the only game in this genre that has ever acquired 13 million players worldwide (SuperData Research, 2015). An invitation to participate in our survey was posted in the WoW boards of the two forums. Online users who intended to participate were redirected to the survey site developed using Google Form through a hyperlink in the post. The survey asked respondents to provide information about their experience on playing WoW and their history of guild participation. Hence, non-WoW players and players without guild experiences were automatically excluded from taking the survey. Incentives for participation included provision of 300 P dollars which is a virtual currency issued and circulated in Taiwan's largest BBS – ptt. Participants also were provided with the chance to participate in a lucky draw, in which the winner can obtain a prize worth 100 New Taiwan Dollar. The survey was conducted from March 25, 2015 to April 24, 2015 which obtained two hundred and seven (207) respondents. After data collection, analysis was done for the data obtained.

The demographic distribution of the sample is presented in Table 1. The majority of respondents were male (86.95%) and between age 21-30 (around 71.01%). As expected, students constituted the largest group in our respondents. Geographically, the majority of the respondents came from Northern Taiwan. In addition, nearly half of the respondents (49.97%) had more than five years of experiences of playing WoW; more than ninety percent of respondents spent at least one hour to play WoW every day. Last, the average number of guid joined was 2.69; this indicates that respondents should possess the required knowledge to answer survey items pertaining to guild experiences.

Table 1: Demographic Profile of WoW Player Respondents of the Web Survey Tool, Taiwan, 2015 (N=207)

	Counts	Percentage
Sex		
Male	180	86.95
Female	27	13.05
Age		
Less than 15	2	0.97
16 – 20	27	13.04
21 – 25	94	45.41
26 – 30	53	25.60
31 – 35	26	12.56
36 – 40	5	2.42
Occupation		
IT-related	22	10.63
Manufacturing	16	7.73
Advertising	1	0.48
Service	24	11.59
Government	3	1.45
Education	5	2.42
Military	5	2.42
Student	95	45.89
Unemployed	14	6.76
Others	22	10.63
Geographic area		
Northern Taiwan	127	61.35
Mid Taiwan	32	15.46
Southern Taiwan	43	20.77
Eastern Taiwan	1	0.48
Others	4	1.93
Past experience on Warcraft		
< 1 year	23	11.11
1~3 years	44	21.26
3~5 years	37	17.87
> 5 years	103	49.76
Time spent on Warcraft per day		
< 1 hour	16	7.72
1~3 hours	84	40.57
3~5 hours	63	30.43
> 5 hours	44	21.26
Average number of Guild joined	2.69	

4.2 Measurement Development

The measures of the research constructs were all adapted from existing scales (refer to Appendix A). After compiling the English version of the questionnaire, the draft survey items were first translated into Chinese by a bilingual research associate. Then, the items were verified and refined for translation accuracy by two professors specialized in information systems. Thereafter, the Chinese version of the draft survey was pretested by several scholars and graduate students specialized in information systems and with online gaming experience to assess its face validity, and content validity, and to verify if the questions are easy to understand and if the statements are contextually relevant. The items and their sources are listed in Appendix A. **Continuance intention.** The items for measuring continuance intention were adapted from the three-item scale of Bhattacherjee (2001a) to fit the context of online gaming. The third item in the original scale was replaced by one developed by the authors of the study because it has been indicated in the previous study that the reversed score items had the tendency to jeopardize the reliability and distort the factor structure of the scale (Schriesheim and Eisenbach, 1995). All of the three scale items used a seven-point Likert scale anchored between "strongly disagree" and "strongly agree."

Satisfaction. The scale for measuring satisfaction was also adapted from the study by Bhattacherjee (2001a) which contained four measurement items. This scale captured respondents' satisfaction levels along a seven-point scale anchored between four semantic differential adjective pairs: "very dissatisfied/very satisfied", "very displeased/very pleased," "very frustrated/very contented," and "absolutely terrible/absolutely delighted." The scales were designed to capture respondents' affects rather than beliefs of their experience of playing World of Warcraft.

Perceived value. Perceived value is conceived as a second-order construct constituted by six components (Sweeney and Soutar, 2001; Mohd-Any, Winklhofer, and Christine, 2014). The rationale for supporting our operationalization is two-fold: (1) the six components cause or change respondents' value perceptions; and (2) these components are not necessarily high-

ly correlated. Price for money and quality capture functional value of WoW as perceived by the respondents. The measurement items for both first-order constructs were adapted from Kim et al. (2011). Emotional value of playing WoW was represented by perceived enjoyment and aesthetics. The scales for perceived enjoyment were adapted from Moon and Kim (2001), while aesthetics were operationalized based on Kim et al. (2011). Social relationship support and social self-image expression constituted the underlying components of social value derived from playing Wow; both of which were adapted from Kim et al. (2011). The measurement items for these constructs used a seven-point Likert scale anchored between "strongly disagree" and "strongly agree."

Guild Engagement. Guild engagement captured respondents' extent of absorption, dedication, and vigor in the guild activities when they are playing WoW. It was modeled as a reflective second-order factor with absorption, dedication, and vigor as its underlying reflective first-order constructs (Cheung et al., 2011). The construct assessed respondents' psychological states using the physical, emotional, and cognitive aspects of the interaction process during guild activities (Patterson et al., 2006). These states reflected the respondents' self-investment of personal resources in a task (Kahn, 1990), thus supporting our method of operationalizing guild engagement as a reflective second-order factor. The scales for measuring guild engagement were adapted from Cheung et al. (2001) and a seven-point Likert scale anchored between "strongly disagree" and "strongly agree" was used.

5. Data Analysis

As recommended by Anderson and Gerbing (1988), this study used a two-step approach to conduct data analysis. The first step validated the measurement model by assessing the reliability, convergent validity, and discriminant validity of research constructs. The second step tested the hypothesized relationships among research constructs. The data was analyzed using partial least squares (PLS), a structural equation modeling technique that uses a component-based approach for estimation. This study used PLS for the following reasons: First, this study is primarily intended for causal analysis, a condition for PLS suggested by Chin and Newsted (1999) and Joreskog and Wold (1982); Second, PLS requires fewer statistical specifications and constraints on the data than covariance-based approaches such as LISREL; Lastly, PLS is considered appropriate to use for small to moderate sample sizes (Cassel et al., 2000). The software utilized for the PLS analysis was SmartPLS v. 3.2.1 (Ringle, Wende, and Becker, 2015).

5.1 Measurement Model Validation

In this study, all of the first-order constructs were measured in terms of reflective indicators allowing the quality of measurement model to be assessed using internal consistency reliability, indicator reliability, convergent validity, and discriminant validity of the research constructs (Hair et al., 2014). In addition, due to the presence of reflective-formative second-order constructs, this study used a two-stage approach to perform PLS analysis (Henseler and Chin, 2010). In the first stage, the second-order constructs utilized the indicators of the underlying first-order constructs as their measures. Such repeated indicators approach allowed the authors of the study to obtain parameters for assessing the measurement model. In the second stage, the latent variable scores of first-order constructs obtained from the previous analysis served as indicator values for the second-order constructs. Then, a PLS analysis was performed again to obtain the parameter estimates for the structural model.

Table 2 shows the mean and standard deviation of the research constructs. Moreover, composite reliability and Cronbach's alpha values which assessed the internal consistency and reliability of the research constructs are also shown. As indicated in Table 2, all of the values are

well above the commonly acceptable threshold, i.e., 0.70 (Nunally and Bernstein, 1994). Indicator reliability was evaluated by looking at indicators' outer loadings. As shown in Appendix B, all of the loadings of the indicators are higher than 0.7 on their respective constructs, which signifies that the indicator reliability of all of the research constructs are satisfactory.

Convergent validity was assessed using two criteria: (Fornell and Larker, 1981) First, all indicator loadings should be significant and must exceed 0.7. Second, the average variance extracted (AVE) should be greater than 0.5, to signify that the variance captured by each construct exceeded the variance captured by the measurement error of that the same construct. Our analysis shows that all of the items exhibited a loading higher than 0.70 on their respective construct. Meanwhile, all of the values of average variance extracted (AVE) range from 0.688 to 0.886. These results indicate that both criteria for convergent validity are satisfied for all of our research constructs.

Discriminant validity was evaluated by using the following criteria (Chin, 2012): (1) items should load more highly on the construct that they intend to measure than on other constructs; (2) the square root of the AVE should exceed the values of the inter-construct correlations; (3) all the correlations among the constructs should be below the 0.85 threshold value (Kline, 1998). Appendix B presents that all items are highly loaded on their own construct than on other constructs. Table 2 shows that the square root of the AVE for each construct is greater than 0.70 (i.e., AVE > 0.50) as well as the correlations between the construct and other constructs, indicating that all the constructs share more variances with their indicators than with other constructs. Also, all the correlation values shown in Table 2 are less than 0.85. These analyses show that the discriminant validity of the research constructs is acceptable. Taken together, the above results demonstrate that all the measurement scales exhibit sufficient psychometric properties to support the subsequent test of the structural model.

Table 2: Correlation Matrix and Reliabilities of Research Constructs using Cronbach's Alpha, Taiwan, 2015

Construct	Mean	STD.	CR	AVE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Vigor	5.462	0.955	0.914	0.727	(0.874)													
2. Dedication	5.504	0.875	0.898	0.688	0.839	(0.845)												
3. Absorption	4.965	1.125	0.925	0.712	0.652	0.728	(0.897)											
4. Self-image expression	4.888	1.078	0.960	0.856	0.476	0.470	0.462	(0.944)										
5. Social relationship support	4.936	1.017	0.921	0.744	0.480	0.504	0.506	0.817	(0.885)									
6. Perceived Enjoyment	5.483	0.936	0.937	0.831	0.600	0.638	0.541	0.699	0.692	(0.898)								
7. Aesthetic	5.504	1.103	0.969	0.886	0.311	0.425	0.349	0.507	0.451	0.611	(0.957)							
8. Price	5.413	1.112	0.959	0.854	0.430	0.484	0.347	0.604	0.539	0.652	0.644	(0.943)						
9. Quality	5.399	1.117	0.953	0.836	0.350	0.425	0.319	0.569	0.489	0.602	0.592	0.745	(0.934)					
10. Satisfaction	5.835	1.039	0.961	0.861	0.588	0.640	0.571	0.595	0.562	0.650	0.532	0.599	0.538	(0.946)				
10. Continuance	4.860	1.422	0.946	0.854	0.322	0.328	0.278	0.481	0.395	0.393	0.428	0.475	0.390	0.490	(0.915)			
11. Age	2.434	0.977	1.000	1.000	0.162	0.140	0.084	0.046	0.044	0.067	0.041	0.032	0.092	0.090	0.056	(1.000)		
12. Gender	0.874	0.332	1.000	1.000	0.183	0.140	0.112	0.144	0.063	0.047	0.021	0.059	0.111	0.068	-0.028	-0.070	(1.000)	
13. Experience	2.077	1.067	1.000	1.000	0.336	0.217	0.079	0.199	0.123	0.129	0.136	0.218	0.088	0.249	0.304	0.363	0.178	(1.000)

Note: the values presented in the diagonal of the table are Cronbach's Alpha values.

5.2 Structural Model Validation

As described previously, this study used latent variable scores of the first-order construct to represent the indicator values for the second-order constructs. Then, a bootstrapping technique with a path weighting scheme and 300 resamples was performed to obtain the estimates of standard errors for testing the statistical significance of path coefficients using *t*-test (Hair et al., 2012). Table 3 presents the results of PLS analysis for the structural model. Using two-tailed *t*-test, all of the three path coefficients in the structural model are significant at $p < 0.001$; thus, all the proposed

hypotheses received empirical support. As for the explained variances (R^2), the results show that our research model explains 58.3% of the variances in continuance intention; 49.6% of the variances in satisfaction is accounted for by perceived value; guild engagement explains 38.6% of the variances in perceived value. These results indicate that the fit of the overall model is fairly good.

We also examined the Q^2 value to assess the model's predictive relevance (Chin, 2012; Hair et al., 2014). The Q^2 measure applies a sample re-use technique that omits part of the data points and uses the model and its parameter estimates to reconstruct (and thus predict) the data points of indicators in endogenous constructs. A value of 0.02, 0.15, or 0.35 indicates that exogenous constructs have a small, medium, or large predictive relevance respectively, for a selected endogenous construct (Cohen, 1988). Using the cross-validated redundancy approach with omission distance of 5, the Q^2 values of the endogenous constructs obtained range from 0.184 to 0.408, indicating a medium to large predictive relevance of exogenous constructs.

Third, we calculated the f^2 effect size to assess the impact of each predictor construct on its own endogenous construct. The f^2 effect size measures the change in the R^2 value when a specified predictor construct is omitted from the model. As shown in Table 3, the calculated f^2 values indicate that all of the predictor constructs in our model have a large effect in producing the R^2 for their own exogenous constructs.

Lastly, the PLS analysis shows that only perceived enjoyment, price, and social relationship support have significant loadings on perceived value at $p < 0.1$ level (two-tail). The results also show that, except for prior experience, the other two control variables (i.e., age and gender) do not have significant impact on continuance intention.

Table 3: Summary of PLS Results of Endogenous Variables, Taiwan, 2015

	Endogenous Variables					
	Continuance Intention		**Satisfaction**		**Perceived Value**	
	β	f^2	β	f^2	β	f^2
Satisfaction	0.438***	0.250				
Perceived Value			0.702***	0.761		
Guild Engagement					0.657***	0.973
R^2	0.282		0.493		0.432	
Q^2	0.184		0.408		0.220	

Note: *, **, *** indicates significant at $p < 0.1$; $p < 0.05$; $p < 0.01$ respectively (two-tailed test).

6. Conclusion

This study aims to examine the impact of players' guild engagement on their continuance intention of playing an MMORPG. The analysis showed that guild engagement enhances players' continuance intention indirectly by increasing their perceived value and satisfaction with the game. This result corroborates the proposition of both service-dominant logic as well as regulatory engagement theory that individuals' active engagement can enhance their value perception of the pursued goal, thereby, increasing their intention to continue the pursuit action. The finding is complementary to social and cognitive psychology-based consumer behavior research in that it demonstrates that interaction experiences matters to consumers' valuation of their consumption of goods/services, which in turn influence their subsequent consumption intention and behavior.

The primary limitation of this study is that it utilized a non-probability sampling to collect data. Inevitably, the generalizability of the research result is limited. There are several avenues to improve this research. First, not all examined value components are co-created in nature; thus, it is necessary to examine whether guild engagement has a similar impact on each of

the value components. Second, this study assumed that perceived value only has an indirect influence on continuance intention; however, prior literature contends that perceived value can also be directly influenced by behavioral intention. Therefore, future research could also look into the direct relationship of perceived value and continuance intention.

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