25/2/2014

Factors that Affect Customers' Loyalty in Online Games and the Impact of Economic Recession in the Industry.

Dissertation thesis

PSAROS ATHANASIOS

Supervisor: Dr. Santouridis Ilias

Staffordshire UNIVERSITY

"Factors that Affect Customers' Loyalty in Online Games and the Impact of

Economic Recession in the Industry."

Author: Psaros Athanasios

Supervisor: Dr. Santouridis Ilias

Larisa, 2014

[1]

This dissertation is submitted in partial fulfillment of the requirements of

Staffordshire University for the award of MSc. In Management.

ACKNOWLEDGMENTS

A number of people have contributed to the production of this dissertation.

I wish to express my special gratitude to my supervisor Dr. Ilias Santouridis for generously supporting my dissertation in every step with his scientific expertise, guidance and valuable comments.

I am especially thankful to the people that participated in my online survey and for the time they spent to help me gather data on the topic.

I would also like to thank all professors of Technological Institute of Larisa in collaboration with Staffordshire University for the detailed dissertation guidelines that provided me and the numerous lectures that organized for the conduct of this dissertation.

Last but not least, I would like to express my gratefulness to Andra, my family and my friends for their concern and my fellow students for their physiological support and collaboration.

Abstract

The industry of electronic video games is blooming and especially the market of online games is aware of high profile today. Despite the economic recession that exists, the total market of game industry and online games is growing and is gaining larger shares of the total market by each year. Loyalty, seems to be one of the keys for this popularity, but which are these factors that affects this customers' loyalty and what is the impact of economic crisis? Thus, this market is very interesting and this study will try to enlighten this field. It applies a modified and combined model, derived from the theory of reasoned action (TRA) and technology acceptance model (TAM) to investigate which factors affect loyalty and to what extent. An empirical study involving 113 subjects was conducted to test that model. The results revealed that customer preference, satisfaction and economic recession influence the customers' loyalty.

Table of Contents

1. Introduction

According to a report from DFC Intelligence (2013) the global game market is forecasted to grow from $63 billion dollars in 2012 to $78 billion dollars in 2017; the prediction includes revenues from pc games till mobile devices games, such as mobile phones, tablets and others. This increase is due to the increase of the number of internet users worldwide (World Internet Users Statistics Usage and World Population Stats, 2013). Thus, online game industry is a promising market and has attracted more companies into this. (see Appendix A)

Despite the economic recession, the revenues are following an increasing trend. Characteristic example is the interview of Bobby Kotick, CEO of one of the biggest companies in the sector Blizzard Entertainment and leader in Massively Multiplayer Online Games, where he stated that "games offer many more hours of entertainment for the amount of money spent in comparison to traditional forms of entertainment." This statement implies many things; first of all that regardless the economic crisis that USA and Europe mostly sustain, game industry market keeps blooming. Another thing is the social aspect of online games, which it doesn't necessary alienate people, it can also connect them and finally online games is one of the latest strategies to increase customers' loyalty.

In online games, users besides of the traditional experience that some years ago games were offering, now can interact socially, share information, compete each other like in the real world. Hence, more customers are entering this visual world increasing simultaneously the revenues of this segment of game industry. DFC Intelligence (2013) notes that the profits from $21 billion dollars in 2012 are going to reach the amount of $35 billion dollars by 2018 from online games. (Figure1)

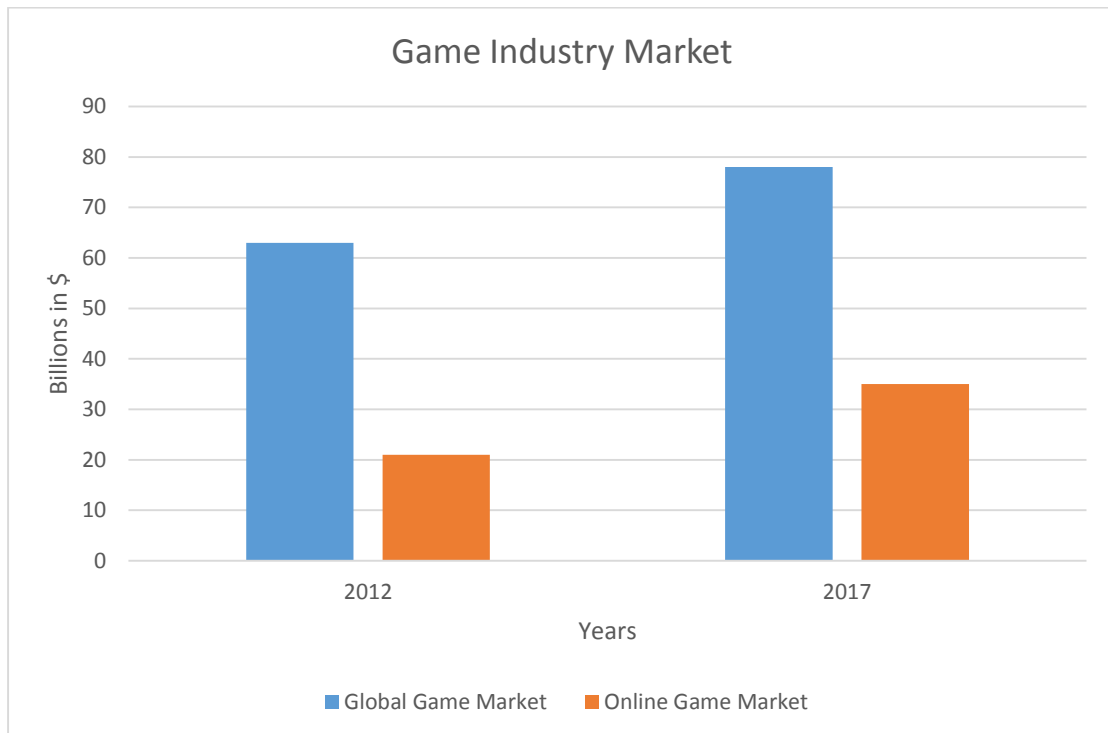FACTORS THAT AFFECT CUSTOMERS' LOYALTY IN ONLINE GAMES AND THE IMPACT OF ECONOMIC RECESSION IN THE INDUSTRY.

Figure1: Game Industry Market Share

For all these reasons game industry and more specifically, online game industry is a hot topic and studying the factors that affect costumers' loyalty is important. This study applies the model that was introduced by C.L. Hsu and H.P. Lu (2007) in order to measure the loyalty of the customers. It is a model based on the Theory of Reasoned Action (Fishbein, M. & Ajzen, I., 1975) and Technology Acceptance Model (Davis et al, 1989). They proposed that perceived enjoyment, perceived cohesion, perceived ease of use and social norms have impact to costumers' loyalty. In addition, it explores whether or not economic recession have a negative impact on customers' loyalty, whose purchasing power is getting lower after 2008 which crisis had burst. From the practical view, the study might be interesting and useful to the managers of the companies and help their awareness of building a new profile of their customers that are more likely now to change their preference and help them implement new strategies to retain the game users.

The major aim of this dissertation thesis is to provide an insight on the loyalty of customers' in online games in the times of economic recession and contribute to the

explanation of this loyalty. Such similar aims have been pursued in the past by other researchers such as Hsu and Lu (2007).

The specific objectives that have been set out within the frame of the dissertation's aim are the following:

• To identify and build the demographic profile of online games customers.

• To determine the most important factors that affect customer's loyalty, by using a modified TAM and TRA model introduced by Hsu & Lu (2007) and examine the relationship between these variables. In that model two extra variables, satisfaction and economic recession, added to facilitate the needs of this paper.

• To investigate if preference is mediated between the group of variables of perceived cohesion, perceived ease of use and perceived enjoyment and the variable of customer loyalty

After this introductive chapter, the second chapter offers a critical literature review and an in depth analysis of online games loyalty. The third chapter presents the literature derived model with the addition of two extra variables that has been applied in the context of this dissertation and the relevant hypotheses that were developed. The fourth chapter analyses the research methodology used to achieve the objectives. In the fifth chapter, the results and findings are discussed and analyzed. In chapter six are offered the conclusions drawn from the research among with implications, limitations and recommendations for future research. Finally, the last chapter of this dissertation illustrates the reflections of learning on what has or hasn't been attained as expected while conducting this paper project.

2. Theoretical Background

2.1. Interest in the research

The interest in this research stems from two reasons. Despite the fact that several studies have been conducted trying to explain users' loyalty to online games, none of them offered a complete model, including several reasons explaining this behavior. On the contrary, these several studies tried to explain online gaming intention either through the Technology Acceptance Model (TAM), even including some more parameters in this model, or through the flow experience theory, or through the aspect of addiction. The second stems from the assumption of Huang and Hsieh (2011, p. 584), that consumer loyalty is an important and significant criterion, since it can serve as "an indicator of continuance and represents an important behavioral consequence in online gaming".

2.2. Online Gaming

Online gaming is a form of digital gaming, where digital game can be defined as a game which "can be played on any electronic device such as a game console, a computer, and/or handheld devices. Some games are "single-user games where the players compete against themselves or the electronic devices, whereas other games are multi-user games where players compete with other players from around the world" (Green and McNeese, 2008, p. 258).

Online gaming is becoming increasingly popular, especially among young people and is the fastest and growing entertainment industry on the Internet since 1990 (Hsu and Lu, 2004; Green and McNeese, 2008; Lee and Tsai, 2010; Zhu et al., 2012; Liao,

[10]

2012; Chen et al., 2012; Wu et al., 2013). Analysts estimate the online game market to be about one-fifth of the size of the video console game market (So-eui and Martinez, 2009). Only in 2007 the value of the game industry reached approximately $41.9 billion worldwide (Liao, 2012). According to a study conducted from the Entertainment Software Association (2005, as cited in Green and McNeese, 2008), in 2005 about 43% of game players reported that they play online games one or more hours per week, whereas in 2003 this percentage was 37% and in 2002 was 31%. Moreover, in January 2005 the word 'games' was in the 8th position in the top 10 queries (Green and McNeese, 2008). In addition, the time an individual spends playing games on the computer has increased from 12 minutes per day in 1999 to 19 minutes in 2004 (Green and McNeese, 2008). According to the China Game Industry Survey Report, the number of online game players in China in 2007 reached a record high of over 40 million, half of whom were paying online game players (Chen, 2013). In 2008 there were around the world nearly 16 million people who subscribed to fantasy-type role online games, whereas in Taiwan online games were the leading form of cyber entertainment in Taiwan in 2006 (Wu et al., 2013).

The game market is very profitable: only in 2004 almost 248 million games were sold in America, meaning profits of about 7.3 billion dollars for this industry (Green and McNeese, 2008). A survey conducted by DFC Intelligence in 2004 indicated the total output value of global online games at USD 1.9 billion, with 50% contributed by Asian nations (Zhu et al., 2012). A survey conducted in Taiwan by the Market Intelligence Center and the Institute for Information Industry indicated that the market scale of computer games in Taiwan reached NTD 8.97 billion in 2004, where online games accounted for 80% (Zhu et al., 2012). According to the Digital Future Coalition Intelligence prediction of worldwide online game revenues, online game global output value in 2006 reached US$5.2 billion (Chen, 2013).

[11]

2.3. Theories Explaining Preference of Users for Online Games

Gratification theory

People prefer to play games for entertainment. For this reason, one model that can be used for identifying the factors predicting online games use is the well-known gratification theory. Green and McNeese (2008) argue that game use and gratification theory suggest that: a) media selection is goal oriented; b) people's role in selecting the media for online games is active; c) the choice of media is influenced by a number of social and psychological factors; d) the choice of a particular media competes with other forms of communication; e) people are typically more influential than the media in the process of choosing media.

Technology Acceptance Model

The Technology Acceptance Model (TAM) has been developed in order to predict users' initial adoption of a new information technology. The significance of TAM derives from the fact that this model "is expected to explain and predict future user behavior based on simple measures taken "after a very brief interaction with a system" as a prototype or in a preadaptation trial" (Lee and Tsai, 2010, p. 603). The following figure depicts TAM.

[12]

Figure2: Technology Acceptance Model
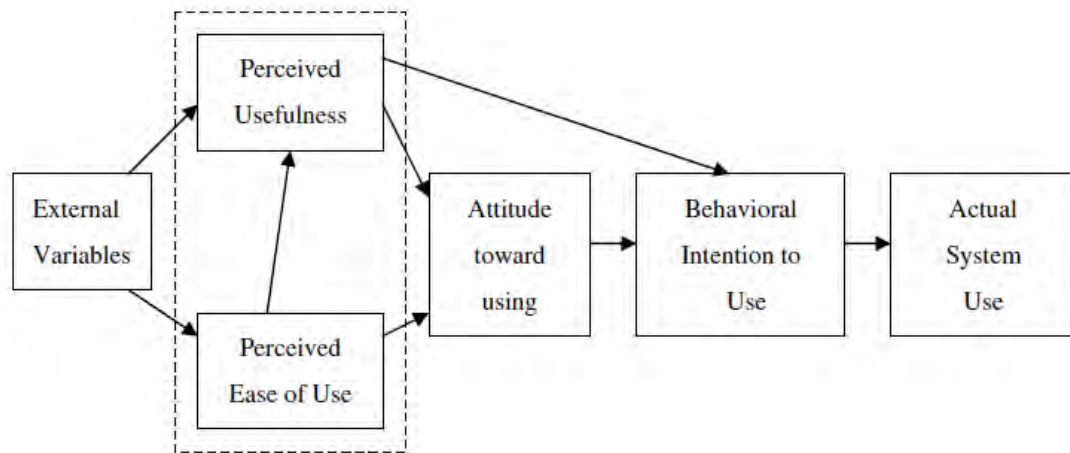
Source: Hsu and Lu, 2007, p. 1645

In TAM, both perceived usefulness and perceived ease of use affect somebody's behaviour towards the use of a technology, such as online games (Lee and Tsai, 2010; Zhu et al., 2012). Perceived usefulness "refers to the degree to which a person believes that using a particular system would enhance his or her job performance", whereas perceived ease of use is defined as "the degree to which a person believes that using a particular system would be free of effort" (Lee and Tsai, 2010, p. 603). The variables that influence perceived usefulness and perceived ease of use also influence users' attitude, practical use and consequently intention of use (Zhu et al., 2012). In the case of online games (Zhu et al., 2012): a) intention of use is defined as the user intention to use an online game; b) perceived usefulness is the level to which users feel that the online game fulfills the gaming objectives, which are fun, recreation, messaging, information exchange, making friends, chatting, team work, fantasy, hobby, work, and transaction; c) attitude is the level of user preference for an online game; d) perceived ease of use is related to the efficiency and quickness according to which the online game meet users' needs. The results of the study of Zhu et al. (2012) indicate on the one hand that, if gamers feel that a game is easy to become familiar with and get involved in, they will have more preferences for the game and further increase their intention to continue using it and on the other that perceived usefulness enhances users attitude and intention of use. Gao (2004) found in his study that the intention

[13]

to return to the online game is positively related to both perceived ease of use and perceived entertainment, while the attitude was found to be positively related to perceived entertainment.

Theory of Reasoned Action

The Theory of Reasoned Action (TRA) is a model used to predict the behavioral intention, including forecasting of attitude (Fishbein, M. & Ajzen, 1975). The research method allows for explanation of limiting factors on attitudinal influence. The Theory, developed by Martin Fishbein and Icek Ajzen, based on previous research started as the theory of attitude, eventually, led to the study of attitude and behavior.

According to TRA, a person's behavioral intention (BI) is determined by person's attitude (A) and subjective norm (SN); thus, the regression that derived is the following:

$$BI = A + SN$$

The core constructs of this model are the Attitude Toward Behavior, where it is defined as "a person's general feeling of favorableness or unfavorableness toward some stimulus object" (Fishbein & Ajzen, 1975, p.216) and the Subjective Norms as "the person's perception that most people who are important to him think he should or should not perform the behavior in question" (Fishbein & Ajzen, 1975, p.302).

[14]

Figure3: Theory of Reasoned Action
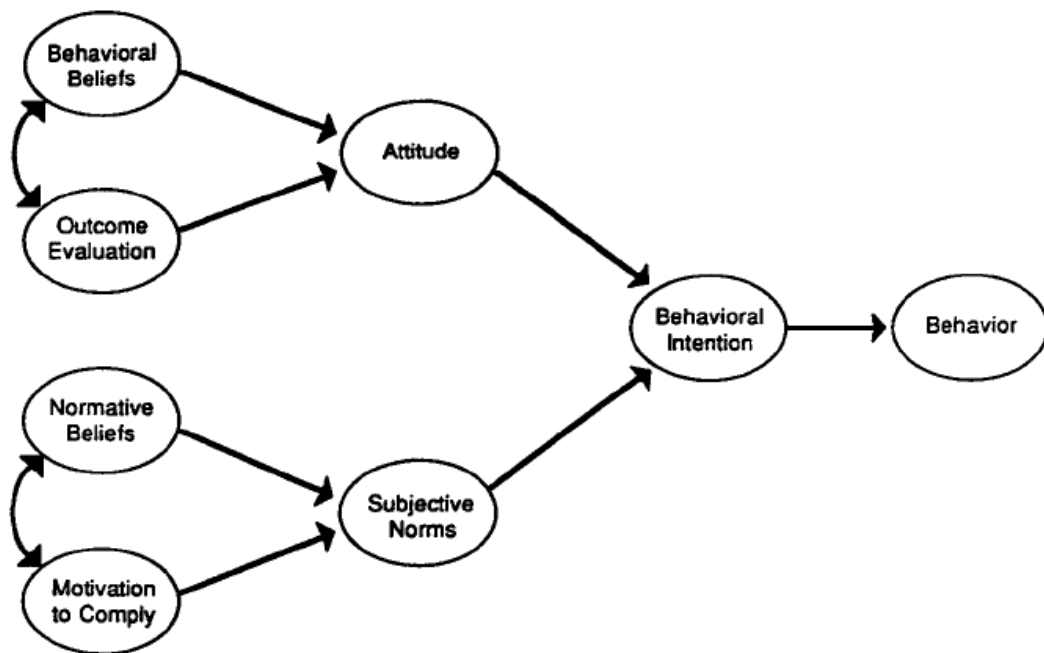
Source: Vallerand et al., 1992, p. 99

Theory of Planned Behavior

The Theory of Planned Behavior (TPB) is based on the theory of reasoned action. This theory was developed so as to explain and predict human behavior. The behavioral intention in TPB is a function of three determinants (Lee and Tsai, 2010). The first is attitude, which refers to an individual's feelings about performing a specific behavior. TPB predicts that if an individual regards a particular behavior as positive, then this person is more likely to perform this behavior. The second is subjective, which is related to what other people, who are important to an individual, think about a behavior. In the case an individual sees that the important others hold a behavior as positive, then this person is more likely to be engaged in this behavior. The third is perceived behavioral control, which is related to both internal and external constraints on the behavior, such as difficulty in completing a task.

[15]

2.4. Factors That Affect Customers' Loyalty in Online Games

The interest in identifying the factors affecting customers' loyalty in online games stems from the fact that, the fees that gamers pay to play online games are based on the time spent playing the game; thus, the companies should ensure that gamers will visit again the online game, in order to be profitable (Lee and Tsai, 2010). In addition, apart from the fact that, gamers play online games primarily for entertaining reasons (Green and McNeese, 2008), the choice of a person to play an online game it not based on the game's material utility, but on the symbolic meaning of the game, as expressed through the personalities that are depicted in the game (Lin, 2009). Similar, Davis et al. (2013) mention that the hedonic rather than the utilitarian aspect of consumption affect users' purchase of online games. Finally, one more reason is that online games are an IT and network-based, creative and evolving service (Choi, 2011).

One important factor that drives one's intention to play an online game is perceived enjoyment, as Davies et al. (2013) mention. According to Lee (2009, p. 852), perceived enjoyment is defined as "the extent to which the activity of using a specific system is perceived to be enjoyable in its own right, apart from any performance consequences resulting from system use". Lee (2009) also stresses that perceived enjoyment has been found to be an important factor in user's technology acceptance, to be positively related to attitude to playing online games and be positively related to the intention to play online games. Lee and Tsai (2010) claim that people play online games for entertainment and pleasure and not for achieving specific goals or for improving their job performance.

However, Lee and Tsai (2010) mention that the enjoyment that online gamers experience may not be the only motivating factor. Since online games are heavily based on the interaction among the players (social interaction), as well as the

[16]

interaction between the player and the system used, Lee and Tsai (2010) and Choi (2001) argue that this interaction is an important factor in the decision of a person to continue to play online games. The same is supported also by Liao (2012), who advocates that interaction can contribute towards value creation. Interaction is defined as "the behavior of communicating with two or more objects and each party or object affecting the others" (Lee and Tsai, 2010, p. 604). The importance of interaction is also mentioned by Herman et al. (2006, p. 189), who refer to interactivity as a factor that "encourages the development of particular forms of subjectivity". The degree of interactivity, or else the level of control, that the user exercises through the game is an important factor of enjoyment and satisfaction that the user experiences through the game. Using the example of sport games and more precisely football, Crawford (2008) claims that the fantasy of being the manager of one's favorite team, player or club is one important aspect of gamers' satisfaction. Finally, both Chang et al. (2014) and Huang and Hsieh (2011) mention that, players' sense of control influence positively their loyalty toward an online game. Consequently, it can be supported that, both the fantasy and entertainment that users experience in online games is a combination of various types of interactions, including the traditional human-to-machine interactivity, which is delivered through the game's user interface, as well as the human-to-human interactivity, which is most common in multi-player online games (Chang et al. 2014). In addition, Lee (2009) indicated that both human-computer interaction and social interaction is positively related to the flow experience of online game players.

One interesting aspect of interaction is that this factor is also stimulated by personalization, meaning that products are tailored to reflect consumers' preferences. Personalization can be defined as "matching categorized content to profiled users, through a filtering process based on a company's determination of the content's relevance to each user" (Liao, 2012, p. 1304). Through personalization the companies can meet users' unique needs; hence, personalization can increase the satisfaction of

[17]

consumers of the particular online game and enhances the interaction between the player and the game. For this reason, players should take active role in the game's design process. For example, in the online game World of Warcraft, collaborative filtering is used so as to determine which roles, interfaces, drama, scenes, arms, or tasks will be recommended to users. One more online game, Everquest, can recognize the user and provide a prototype for further personalization (Liao, 2012).

Moreover, flow experience is another factor that can contribute in customers' loyalty in online games (Lee and Tsai, 2010) and according to Lee (2009), flow experience is much more important in influencing customer acceptance and use of online games in comparison to perceived enjoyment. Flow experience is defined as "the holistic experience that people feel when they act with total involvement" (Hsu and Lu, 2004, p. 856). Flow experience refers to "optimal and very pleasing activities experienced by individuals with their total involvement and concentration, as well as a sense of time distortion" (Lee and Tsai, 2010, p. 604). Due to the flow experience, people lose their self-consciousness and concentrate only to the performing activity in the online game (Hsu and Lu, 2004; Lee and Tsai, 2010), where time, skills, involvement and challenges are important characteristics of flow experience (Lee and Tsai, 2010), unable to recognize any changes in their surrounding environment (Lee, 2009). Online gamers may spent even months in only one game, since the main character of the game builds skills and completes missions (So-eui and Martinez, 2009). Wu et al. (2013) also stress that flow experience influenced positively online gaming. To be more precise, the authors claim that "many advanced participants continue to participate in leisure activities because of the enjoyment (i.e., flow) they experience when involved in chosen pastimes" (Wu et al., 2013, p. 206). Both Chang et al. (2014) and Huang and Hsieh (2011) mention that, players' perceived entertainment and challenge influenced their loyalty toward an online game. As a result, flow experience not only motivates people to play online games, but is a

[18]

motivating factor of replay intention and gamers' commitment to an online game, thus increasing users' loyalty to online games.

Social norm is another important factor linked to online gaming and the intention of users to continue to play. Social norms consist of two distinct influences (Hsu and Lu, 2004, p. 857): "informational influence, which occurs when a user accepts information obtained from other users as evidence about reality, and normative influence, which occurs when a person conforms to the expectations of others to obtain a reward or avoid a punishment". The social norms of the physical world can also be observed in online games, such as Second Life (Yee et al., 2007). As Nielsen et al. (2008, as cited in Crawford, 2012, p. 25) wrote: "games are special contexts where particular rules apply, but we can apply this definition to a wide array of utterly different activities: work, family life, university classes, weddings, the nightlife of a big city. All of these situations are governed by special rules and norms that do not always … apply to other contexts". The social norms applied in online games are also applied in the real life, but they can also be different from what the user experiences in reality. This results in a freedom in the game, which constitutes the game a separate and self-contained context, with specific rules and social norms, isolating the online game from the daily life and its rules (Crawford, 2012). These social norms that are applied only in the online game offer the users the ability to experiment with their personality, to try new identity (Wu et al., 2013).

Finally, there some more factors affecting online gamers' decision to play and replay an online game. Satisfaction is defined as "the contentment of customers with respect to their prior experiences and perceptions of a given brand" (Lin, 2009, p. 222). According to another definition, satisfaction is "the synopsis psychological state resulting when the emotion encompassing disconfirmation expectations is combined with the consumer's former feeling regarding the consumption incident" (Liang, 2012, p. 952). Satisfaction can be regarded as a post-purchase evaluation of the

[19]

product/service, related to the pre-purchase expectations. Within this framework, satisfaction reflects customers' individual preferences, customer evaluation and follow-up consumers' behavior and hence it is an important factor in studying consumer behavior. Besides, satisfaction derived from playing online games is linked to the players' personality characteristics and traits. For example, Liang (2012) found that neuroticism, openness, extroversion, and conscientiousness significantly affected satisfaction for online games, while agreeable persons do not pay attention to satisfaction evaluation for online games. Despite the fact that satisfaction is different for each game, it cannot be doubted that it enhances enjoyment and is an important factor of online gaming success (Choi, 2011).

Satisfaction does not derive only from the fulfillment of pre-purchase expectations of consumers. Satisfaction may also derive from the creation of attractive brand personalities of the game (Lin, 2009). This assumption stems from the fact that a person will continue to play an online game only in the case the game fits him/her. The determinants of this satisfaction within this framework are the influences of imaginative personality, the cheerful personality, and the successful personality (Lin, 2009). The reason for which perceived imaginative personalities can generate gamers' interest and increase their satisfaction is that these types of personalities are related to qualities of youthfulness, trendy, energy, uniqueness, and original, creating a meaning for online gamers. Furthermore, the perceived cheerful personality of an online game brand can increase gamers' satisfaction, since this personality sparks inferences of gamer trustworthiness and dependability (Lin, 2009). Finally, perceived successful personality is related on the one hand to incentives for performance, such as weapons, treasures, and on the other to gamer performance, such as skills and scores. Within this context, Lin (2009) argues that the perceived successful personality serves as an expressive function of the gamer linked to the acquisition of accomplishments, representing an image and / or reputation of important achievement. This is further justified by a major characteristic of online games, which

[20]

is that the success is rewarded in the form of advancement to higher levels, which include new challenges and novelty and requires both much time, effort and skill (Wu et al., 2013). These characteristics are associated with higher perceived enjoyment, pleasure and thus satisfaction, which leads to users' intention to continue to play.

Race is another important factor in affecting the choice of online games. For example, African Americans and Hispanics play less computer games and spend more time than Caucasians in playing digital games (Green and McNeese, 2008). Finally, there is also gender, where males spend much more time than females in playing games (Green and McNeese, 2008).

Apart from the above, there is one more factor that affects customer loyalty and use of online games: the economic recession. Chen (2013) argues that perceived monetary cost would induce consumers' constraint perception of online behavior. Online gamers are normally invited to purchase subscriptions, point cards, or monthly cards for participating, and even virtual currencies to increase a character's virtual property in pay-to-play online game world. However, the financial constraint, or else the financial risk, may reduce the intention of use. More precisely, Chen (2013, p. 118) claims that the financial risk "means the constraint that the actual costs may exceed the planned / budgeted costs of online game engagement. In other words, the financial constraint is the fear of the online gamers that they must pay more for the game service than originally anticipated". Chen et al. (2012, p. 1024) argue that financial risk may occur when online gamers fear misappropriation of their accounts, meaning that online gamers may fear that the company may misuse their personal account/credit card information to make illegal purchases. However, here we adopt the first definition of Chen (2013). One the one hand the financial crisis has resulted in an increased of peoples' free time due to the increase of unemployment. This resulted in an increase of online games. More precisely, it is supported by analysts that "the online game industry is not only recession-proof but can even benefit from

[21]

an economic slump, as people stay home more often and have more time on their hands" (So-eui and Martinez, 2009). A strong example of this phenomenon is provided by So-eui and Martinez (2009) and Jin (2010), who argue that in South Korea, online gaming boosted and spread to become a social phenomenon in the aftermath of the 1997-98 Asian financial crisis, which left many young men unemployed. The rise in the number of people shifting towards online games stems from one more reason: online games offer a person the ability to escape from daily routine and problems (So-eui and Martinez, 2009). On the other the unemployment, the increase of part-time employment, the rise of temporary work and the existence of more flexible part – time and/or short – term labor contracts resulted in a decrease of people's income. As a result, it is more difficult for people to pay for online games. Hence, it can be supported that the financial recession has a negative effect on users' intention to play online games.

[22]

PSAROS ATHANASIOS
25/02/14

FACTORS THAT AFFECT CUSTOMERS' LOYALTY IN ONLINE GAMES AND THE IMPACT OF
ECONOMIC RECESSION IN THE INDUSTRY.

3. Conceptual Model & Hypotheses development

3.1. Conceptual Model

The model that generated and used in this paper is derived from the literature and first was implemented by Hsu and Lu (2007). It is the modified model that combines the Technology Acceptance Model and the Theory of Reasoned Action. For the needs of this research paper, two extra variables were added; these are the Satisfaction, which measures the individual and perceived satisfaction of the online games customers and the Economic Recession, which is a contemporary hot topic which its impact is obvious. Therefore, the model which was resulted and used in this research paper is the following:
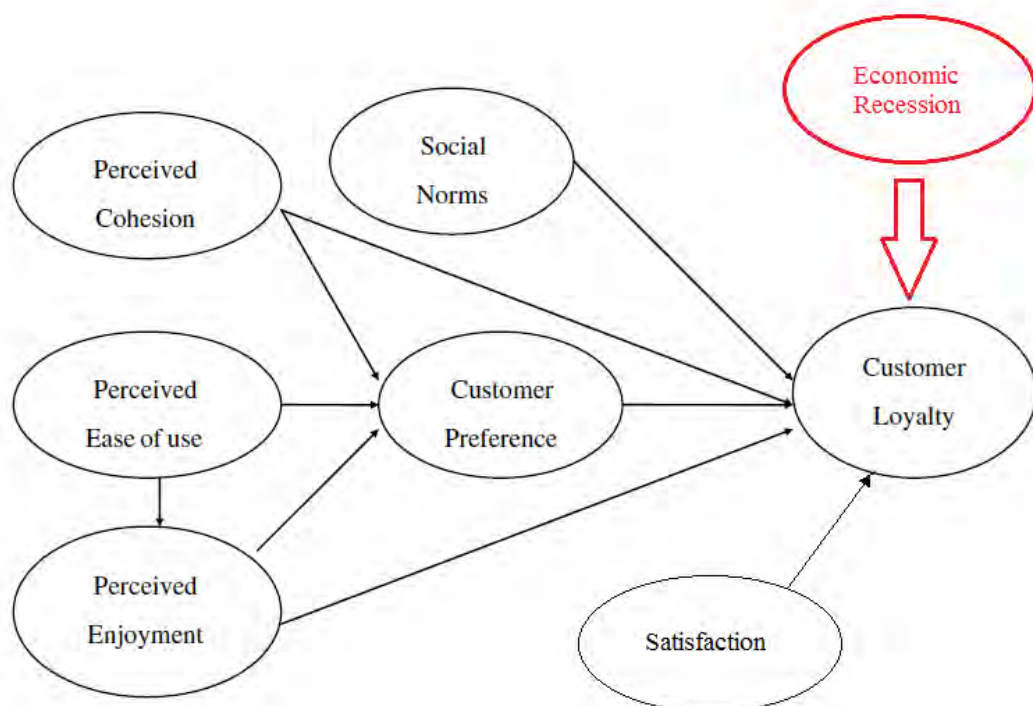
Figure4: Research Model

[23]

3.2. Hypotheses Development

Hypothesis1: Social Norm positively affects Customer Loyalty

Hypothesis2a: Perceived Ease of Use positively affects Customer Preference

Hypothesis2b: Perceived Ease of Use positively affects Perceived Enjoyment

Hypothesis3a: Perceived Cohesion positively affects Customer Preference

Hypothesis3b: Perceived Cohesion positively affects Customer Loyalty

Hypothesis4a: Perceived Enjoyment positively affects Customer Preference

Hypothesis4b: Perceived Enjoyment positively affects Customer Loyalty

Hypotheis5: Customer Preference positively affects Customer Loyalty

Hypothesis6: Satisfaction positively affects Customer Loyalty

Hypothesis7: Economic Recession negatively affects Customer Loyalty

Social norms is defined as the degree to which the user perceives that others from his/her environment approves their participation in the online games.

The perceived ease of use can be defined as the degree to which the user believes that the user believes that participating in an online game requires no or low effort.

Perceived cohesion can be described as the degree to which the user is attracted to the group and to each other.

Regarding now the perceived enjoyment, this can be described as the extension of how much pleasure an online game offers and satisfy the user who participates in there.

Customer preference can be defined as the degree of players' positive feelings about participating in online video games.

Finally, as a customer loyalty can be described as willingness of users to re-participate in online games. (Hsu & Lu, 2007).

[24]

4. Methodology

4.1. Design

The research design is explanatory study; it projects and it explains the relationships between the variables. (Saunders et al., 2009). More specifically, it examined the relationships between cohesion, ease of use, enjoyment, social norms, preference, satisfaction and economic recession and their impact on customers' loyalty; it studied the preference related with cohesion, ease of use and enjoyment and finally it inspected the relationship between perceived ease of use and enjoyment.

The research used the strategy of survey; this strategy is usually related to the deductive approach. It is used commonly in explanatory research studies. The survey allows to collect quantitative data with the help of questionnaires, which can be analyzed using statistic software. Then, the data can be used to suggest specific relationships between the variables. (Saunders et al., 2009).

The final disseminated questionnaires were divided into three parts. The 1st part had 3 items introductive questions, drawn for validated questionnaires. The 2nd part included likert scale questions, drawn from validated questionnaires of the existing literature as well (see Appendix B). Likert scale questions were used due to their easiness to be answered by the queried and analyzed by the author. The final and 3rd part was composed of 7 demographical questions that their analysis fulfilled the first objective of the research.

4.2. Contact Method

The online questionnaire, likert scale form questions, ranging from 1 (strongly disagree) to 7 (strongly agree), was designed and was placed into websites and social media network sites, such Facebook. It was strategically posted on the fan pages of online games and popular game related forums in order to increase the response rate. Moreover, the questionnaire was sent to author's personal acquaintances in order to gather data. These acquaintances subsequently sent the survey to their associates who met the eligibility criteria and could potentially contribute to a specific study.

The advantages of online surveys are significant; first of all, are fast, simple and cheap. In addition, the data collection time is shrink since all data are register in a data base online. That is the reason why this research paper adopted this contact method as the most appropriate one. (Saunders et al., 2009).

4.3. Sampling

The sampling technique that the research proposal implies is non-probabilistic, because the total population of online gamers is unknown. (Saunders et al., 2009). More specifically, snowball sampling technique is one of the sampling methods that can be used, in order to gather primary data. The online questionnaire posted in game related websites, fan pages and forums. The members of these online communities can answered the questionnaire and forwarded it to others; the process stopped once the given sample is large enough and manageable (Saunders et al., 2009). In this paper, the number of subjects was 113, a number fair enough to project the results.

[26]

As in all cases, there are also drawbacks; in snowball sampling the sample is biased. The fact that there is no control of who is actually answering the survey, this by itself, can produce varied and inaccurate results. This sampling method, of course, is not able to deliver representative results. Although, it can easily applied for online surveys, like this paper implements, because there is online access to interested parties. What is more, for populations where size is difficult to identify, snowball sampling may be the only option that is possible. (Saunders et al., 2009).

4.4. Strategy for assessing the model

The proposed model will be tested using the SPSS Statistics. It is a powerful statistical analysis software package tool for analyzing models, including the measurement and the relationship between variables of a model. SPSS is one of the most widely used programs; Researchers of any type, survey companies, marketing organizations and others use that software to do their own statistical analysis.

4.5. Reliability

Inter-item analysis was used to verify the internal consistency and reliability of each item of the variables that are used in the model. These are social norms, perceived ease of use, perceived cohesion, perceived enjoyment, preference, satisfaction, economic recession and loyalty. Thus, the Cronbach's alpha, (Cronbach, 1960) was calculated for each one of them and it was found to range between 0.689 and 0.866 (Table1). The minimum level for acceptance of reliability is over 0.7 (Nunnally & Bernstein, 1994). Still, one of the values is slightly lower, 0.689.

[27]

Variables	Cronbach's alpha	Number of Items
Social Norms	0.866	3
Ease of Use	0.802	3
Cohesion	0.689	3
Enjoyment	0.859	3
Preference	0.800	2
Satisfaction	0.776	3
Economic Recession	0.788	3
Loyalty	0.866	2

Table1: Cronbach's alpha

Though, we can accept values near of .60 especially if the factor has only few items, which in this paper there are only 3 items measuring the variable of cohesion (Hair, et al., 2009). Thus, the questionnaire was consider to be reliable.

5. Research Findings and Discussion

5.1. Characteristics of the Sample

The favorite game of the respondents' preference is the World of Warcraft, a massively multiplayer online role-playing game developed by Blizzard Entertainment with many awards, with a vast majority of 48.7%; In similar survey conducted by others researchers (Teng, 2010), World of Warcraft was also in the top of customers' preference. Lineage II follows with 24.8% while others gathered less than 10% each. The table below illustrates the results.

[28]

Table2:Online_Game

Games	Percent	Cumulative Percent
Age of Conan	1.8	1.8
Aion	1.8	3.5
Dota 2	3.5	7.1
Dungeons & Dragons Online	3.5	10.6
EVE Online	1.8	12.4
League of Legends	7.1	19.5
Lineage II	24.8	44.2
Rift	4.4	48.7
Starcraft 2	2.7	51.3
World of Warcraft	48.7	100.0

The demographical characteristics of the executed research's sample, which are illustrated in the table3, are the following:

- 79.6% of those who filled in the questionnaire were males and 20.4% women implying that in this field, the male population is mainly interested about online games.
- The vast majority of customers of online games are in the age group of 25-34 years old, 54% while the cumulative percent till that group is 86.7%. Noteworthy is the fact that almost 10% of those who replied the survey were in the age group of 35-44; This can be interpreted that online games are not addressed only for young and teenagers opposed to the common belief.
- As for now the marital status, 89.4% declared as single against 10.6% that were married.
- According to the question about children, probably as a result of the marital status, the majority 91.2% stated that they had no children while only the 8.7% had children.
- From the participants, only 10.6% replied that they didn't have college degree; the majority of the sample 59.3% had a college degree while the 30.1% had postgraduate studies.
- 58.4% of the individuals were employed and the rest 41.6% stated that they were not working. This fact represents also the economic recession which affects, besides others, the unemployment.
- Income, probably affected as a result of the education, age characteristics of the sample and economic recession, ranged from 0€ to 1500€ and over; almost half of the sample 48.7% answered that their income is from 0€ till

[29]

500€. Persons with personal monthly incomes between 501€ and 1000€ comprised a 28.3% of the sample, 4.4% between 1001€ and 1500€ and finally 18.6% of the sample belongs to the highest income category.

- More than the half of the examined sample, 50.5% replied that they were playing online games for more than five years. Probably as a result from loyalty, the majority of the sample remained occupied with the online games. 9.7% of the sample answered that they were playing for less than 1 year, 22.1% between 1 and 3 years, while 17.7% of it is declared between 3-5 years.
- Finally, for those who were players of only 1 game comprised the 53.1% of the sample which is more than one half. This can be explained that customers are loyal to only one game and they repeat using it; 23.9% of the sample replied that they were playing two games, 5.3% answered three games and 17.7% more than three.

Demographic Characteristics		Percent	Cumulative Percent
Gender	Male	79,6	79,6
	Females	20,4	100,0
Age	Under 18	4,4	4,4
	18-24	28,3	32,7
	25-34	54,0	86,7
	35-44	9,7	96,4
	45-54	1,8	98,2
	55 and over	1,8	100,0
Marital Status	Married	10,6	10,6
	Single	89,4	100,0
Children	Yes	8,8	8,8
	No	91,2	100,0
Education	No College	10,6	10,6
	College	59,3	69,9
	Graduation School	30,1	100,0
Work	Yes	58,4	58,4
	No	41,6	100,0
Income (personal in euros)	0-500€	48,7	48,7
	501-1000€	28,3	77,0
	1001-1500€	4,4	81,4
	1501 and over€	18,6	100,0

[30]

Continued Demographic Characteristics			
Years (playing online games)	Less than a year	9,7	9,7
	1-3 years	22,1	31,8
	3-5 years	17,7	49,5
	More than 5 years	50,5	100,0
Games (number of games)	One	53,1	53,1
	Two	23,9	77,0
	Three	5,3	82,3
	More than three	17,7	100,0

Table3: Demographic Charasteristics

5.2. Descriptive Statistics

The following table, (table4) presents the means and standard deviations of the constructs. It can be found that, on average, users responded positively to participating in online games, the averages are all greater than 3.5 but economic recession, which is indicated as indifferent.

Table4. Descriptive Statistics (means & std. deviation)

	Mean	Std. Deviation
Social norms	3,8186	1,63748
Perceived ease of use	5,6519	1,14901
Perceived cohesion	4,5693	1,14320
Perceived enjoyment	5,7699	1,00206
Costumer preference	5,7876	,98608
Customer satisfaction	5,2802	1,02214
Economic recession	3,1445	1,58795
Loyalty	5,0575	1,64988

The fact that online games are based on communities, it was expected that social norms would play a significant role to the gamers' perception. However, the means of social norms was slightly higher than the average. This may explain that the reasons of participating in an online game would satisfy an individual's enjoyment and leisure.

[31]

Furthermore, the means of economic recession was to some extent lower than the average. This could be mean that this industry was not affected yet by the crisis and the willingness of participation was higher than the impact of this factor.

5.3. Examining the Hypotheses

In order to investigate the above hypotheses, author used the Bivariate Correlations procedure, which computes the pairwise associations for a set of variables and displays the results in a matrix. It is useful for determining the strength and direction of the association between author's suggested variables. The following matrix (table5) illustrates the Bivariate Correlations.

[32]

FACTORS THAT AFFECT CUSTOMERS' LOYALTY IN ONLINE GAMES AND THE IMPACT OF ECONOMIC RECESSION IN THE INDUSTRY.

Table5: Bivariate Correlations

		Loyalty	Social Norms	Cohesion	Enjoyment	Preference	Satisfaction	Economic Recession
Loyalty	Pearson Correlation	1	-.037	.219*	.336**	.481**	.402**	-.355**
	Sig. (2-tailed)		.698	.020	.000	.000	.000	.000
	N	113	113	113	113	113	113	113
Social Norms	Pearson Correlation	-.037	1	.058	.175	.079	-.007	.207*
	Sig. (2-tailed)	.698		.542	.065	.403	.945	.028
	N	113	113	113	113	113	113	113
Cohesion	Pearson Correlation	.219*	.058	1	.533**	.416**	.328**	-.161
	Sig. (2-tailed)	.020	.542		.000	.000	.000	.089
	N	113	113	113	113	113	113	113
Enjoyment	Pearson Correlation	.336**	.175	.533**	1	.775**	.388**	-.249**
	Sig. (2-tailed)	.000	.065	.000		.000	.000	.008
	N	113	113	113	113	113	113	113
Preference	Pearson Correlation	.481**	.079	.416**	.775**	1	.448**	-.255**
	Sig. (2-tailed)	.000	.403	.000	.000		.000	.006
	N	113	113	113	113	113	113	113
Satisfaction	Pearson Correlation	.402**	-.007	.328**	.388**	.448**	1	-.303**
	Sig. (2-tailed)	.000	.945	.000	.000	.000		.001
	N	113	113	113	113	113	113	113
Economic Recession	Pearson Correlation	-.355**	.207*	-.161	-.249**	-.255**	-.303**	1
	Sig. (2-tailed)	.000	.028	.089	.008	.006	.001	
	N	113	113	113	113	113	113	113

[33]

Hypothesis 1: Social Norm positively affects Customer Loyalty

The Pearson correlation coefficient measures the linear association between two scale variables. The results are indicated from the table4. The correlation reported in the table is, surprisingly, negative with low impact upon loyalty, and more specifically -0.37, although not significantly different from 0 because the p-value of 0.698, which is greater than 0.05. This means that we cannot accept the hypothesis that Social Norm has positive impact on Loyalty. As already mentioned above, social norm's mean was just above the average (table4) and online games satisfy an individual's enjoyment and leisure, thus this explains why the hypothesis of social norms and loyalty cannot be accepted.

Reaching these conclusions has required some work and shown that correlation analysis using the Pearson correlation coefficient may be not always straightforward. For comparison, author used also nonparametric correlation measures and more specifically Spearman's rho and Kendall's tau-b statistics. These tests, measure the rank-order association between two scale or ordinal variables. They work regardless of the distributions of the variables.

Spearman's rho and Kendall's tau-b results are indicated in the next table (table6).

Table6-Social Norms and Loyalty Spearman's rho & Kendall's tau-b Correlations

			Social_Norms	Loyalty
Kendall's tau_b	Social_Norms	Correlation Coefficient	1.000	-.010
		Sig. (2-tailed)	.	.882
		N	113	113
	Loyalty	Correlation Coefficient	**-.010**	1.000
		Sig. (2-tailed)	**.882**	.
		N	113	113
Spearman's rho	Social_Norms	Correlation Coefficient	1.000	-.004
		Sig. (2-tailed)	.	.967
		N	113	113
	Loyalty	Correlation Coefficient	**-.004**	1.000
		Sig. (2-tailed)	**.967**	.
		N	113	113

Examined the test with Kendall's tau_b, the correlation reported in the table5, remained slightly negative with the value of 0.01 and the significant has the value of 0.882, greater that the accepted limit of 0.050. Thus, the hypothesis cannot be accepted.

Finally, Spearman's rho test results was even worse regarding the significant, which has the value of 0.967. The correlation, on the other hand, is almost zero, which indicates that there is no correlation between these two variables. Consequently, the Hypothesis1 once again cannot accepted.

Hypothesis2a: Perceived Ease of Use positively affects Customer Preference

The second hypothesis pair, it was between the variables of ease of use and preference. The procedure remained the same; Bivariate Correlation test performed and the following table (table7) projects the results. Concerning the findings, ease of use and preference had moderate and positive correlation 0.328 and it was significant zero. Thus, the hypothesis is accepted and there was a correlation between these two variables.

Table7: Ease of Use and Preference Correlations

		Ease_of_Use	Preference
Ease_of_Use	Pearson Correlation	1	.328[**]
	Sig. (2-tailed)		.000
	N	113	113
Preference	Pearson Correlation	.328[**]	1
	Sig. (2-tailed)	.000	
	N	113	113

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

[35]

Hypothesis2b: Perceived Ease of Use positively affects Perceived Enjoyment

The next pair that was examined, is the one between the ease of use and the enjoyment. Pearson's correlation test was performed and the data shown that there was indeed a fairly positive and moderate correlation which was above 31% and it had p-value zero. (table8)

Table8: Ease of Use and Enjoyment Correlations

		Ease_of_Use	Enjoyment
Ease_of_Use	Pearson Correlation	1	.312**
	Sig. (2-tailed)		.001
	N	113	113
Enjoyment	Pearson Correlation	.312**	1
	Sig. (2-tailed)	.001	
	N	113	113

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

The hypothesis is accepted, and ease of use affects positively the perceived enjoyment.

Hypothesis3a: Perceived Cohesion positively affects Customer Preference

The first half of the Hypothesis3 states that there is a positive impact of cohesion to the preference. To examine this, one more correlation test performed. The following table indicates the results. (table9)

Table9: Cohesion and Preference Correlations

		Cohesion	Preference
Cohesion	Pearson Correlation	1	.416**
	Sig. (2-tailed)		.000
	N	113	113
Preference	Pearson Correlation	.416**	1
	Sig. (2-tailed)	.000	
	N	113	113

[36]

From the table9, the correlation results reports that there was over than 40% positive impact between the two variables and it was significant zero. The hypothesis is accepted.

Hypothesis3b: Perceived Cohesion positively affects Customer Loyalty

The second half of Hypothesis3, inspecting the pair between perceived cohesion and customer loyalty; according to the table5, the results projected that there was indeed a correlation between these two variables, however this was weak, 0.219 with p-value lower than 0.05 and more specifically 0.02. Therefore, this hypothesis is accepted. However, to amplify the findings of the results the hypothesis and achieve a more clear view and understanding, these two variables was examined with Spearman's rho and Kendall's tau-b statistics as well.

The result from these two tests remained the same; the hypothesis is accepted. However, there were small differences between the coefficients and the p-values. In Kendall's tau-b the correlation was 0.190, slightly weaker than Pearson's with p-value 0.007 while in Spearman's rho test there results were 0.245 and 0.09 respectively (table10).

Table10: Cohesion and Loyalty Spearman's rho & Kendall's tau-b Correlations

			Cohesion	Loyalty
Kendall's tau_b	Cohesion	Correlation Coefficient	1.000	.190[**]
		Sig. (2-tailed)	.	.007
		N	113	113
	Loyalty	Correlation Coefficient	.190[**]	1.000
		Sig. (2-tailed)	.007	.
		N	113	113
Spearman's rho	Cohesion	Correlation Coefficient	1.000	.245[**]
		Sig. (2-tailed)	.	.009
		N	113	113
	Loyalty	Correlation Coefficient	.245[**]	1.000
		Sig. (2-tailed)	.009	.
		N	113	113

[37]

Hypothesis4a: Perceived Enjoyment positively affects Customer Preference

In this pair, the author examined the correlation between perceived enjoyment and customer preference. The results that derived from the table11 indicate a very strong correlation between these two variables, which is 77.5% with p-value of zero. Thus, the hypothesis is accepted, and enjoyment indeed has a positive impact upon customer preference.

Table11: Enjoyment and Preference Correlations

		Enjoyment	Preference
Enjoyment	Pearson Correlation	1	.775**
	Sig. (2-tailed)		.000
	N	113	113
Preference	Pearson Correlation	.775**	1
	Sig. (2-tailed)	.000	
	N	113	113

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

Hypothesis4b: Perceived Enjoyment positively affects Customer Loyalty

Considering the table5, the results revealed a moderate positive correlation (0.336) between this pair. The significant p-value was 0 and the hypothesis of enjoyment that positively affects the loyalty is accepted.

Hypotheis5: Customer Preference positively affects Customer Loyalty

From table5, the indicator of Pearson shown that there was indeed a strong positive correlation between preference and customers' loyalty and more specifically, 48%. It was statistical significant since the p-value was 0; thus, the hypothesis is accepted.

[38]

Hypothesis6: Satisfaction positively affects Customer Loyalty

The sixth hypothesis states that there is a positive impact between satisfaction and loyalty; according to the findings of Pearson's test, data projected a fairly strong and positive correlation, 0.402. The hypothesis is accepted since the p-value is zero (table5).

Hypothesis7: Economic Recession negatively affects Customer Loyalty

The final correlation test that was conducted was to examine the relationship between the variables of economic recession and loyalty. According with Pearson's, data had shown no surprise and they have shown that there was indeed a slightly moderate correlation between these two variables and it is negative, -36%. The hypothesis here is also accepted and it is statistically significant because p-value is zero (table5). Economic crisis seems to have impact in every industry and game industry belongs to this, nevertheless that impact is not very high. Based on descriptive statistics, the means of loyalty and economic recession are 5.0575 and 3.1445 respectively (table4).

5.4. Regression Analysis

Linear regression is used to model the value of a dependent scale variable based on its linear relationship to one or more predictors. The linear regression model assumes that there is a linear, or "straight line," relationship between the dependent variable and each predictor. The linear regression model works better with normal variables where in this study's case are preference, satisfaction and economic recession.

In this research paper, author used linear regression with dependent variable the loyalty and three independent variables which are preference, economic recession and satisfaction. From the Model Summary table (table12), the results indicate that almost 30% of the variables were explained by the model. (adj. R^2 .296)

[39]

FACTORS THAT AFFECT CUSTOMERS' LOYALTY IN ONLINE GAMES AND THE IMPACT OF
ECONOMIC RECESSION IN THE INDUSTRY.

Table12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.561[a]	.314	**.296**	1.38477

a. Predictors: (Constant), Economic_Recession, Preference,
Satisfaction

From the ANOVA (table13), it is interpreted that the model makes sense, since the significant is zero.

Table13: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	95.860	3	31.953	16.663	**.000[b]**
	Residual	209.017	109	1.918		
	Total	304.876	112			

a. Dependent Variable: Loyalty

b. Predictors: (Constant), Economic_Recession, Preference, Satisfaction

Finally, from the coefficients' table (table14), the significant in these three variables of preference, satisfaction and economic recession, are below .05 which means that they contribute much to the model.

Table14:Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.847	1.032		.821	.413
	Preference	.578	.150	**.345**	3.853	**.000**
	Satisfaction	.295	.147	**.183**	2.012	**.047**
	Economic_Recession	-.220	.087	**-.211**	-2.515	**.013**

a. Dependent Variable: Loyalty

[40]

Residuals of Regression Analysis

The difference between the observed value of the dependent variable (y) and the predicted value (ŷ) is called the residual (e). Each data point has one residual. (Lloyd R. Jaisingh, 2000)

Residual = Observed value - Predicted value

$$e = y - ŷ$$

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.6749	6.7362	5.0575	.92514	113
Residual	-3.88750	2.32877	.00000	1.36610	113
Std. Predicted Value	-2.575	1.814	.000	1.000	113
Std. Residual	-2.807	1.682	.000	.987	113

a. Dependent Variable: Loyalty

[41]

Figure 5
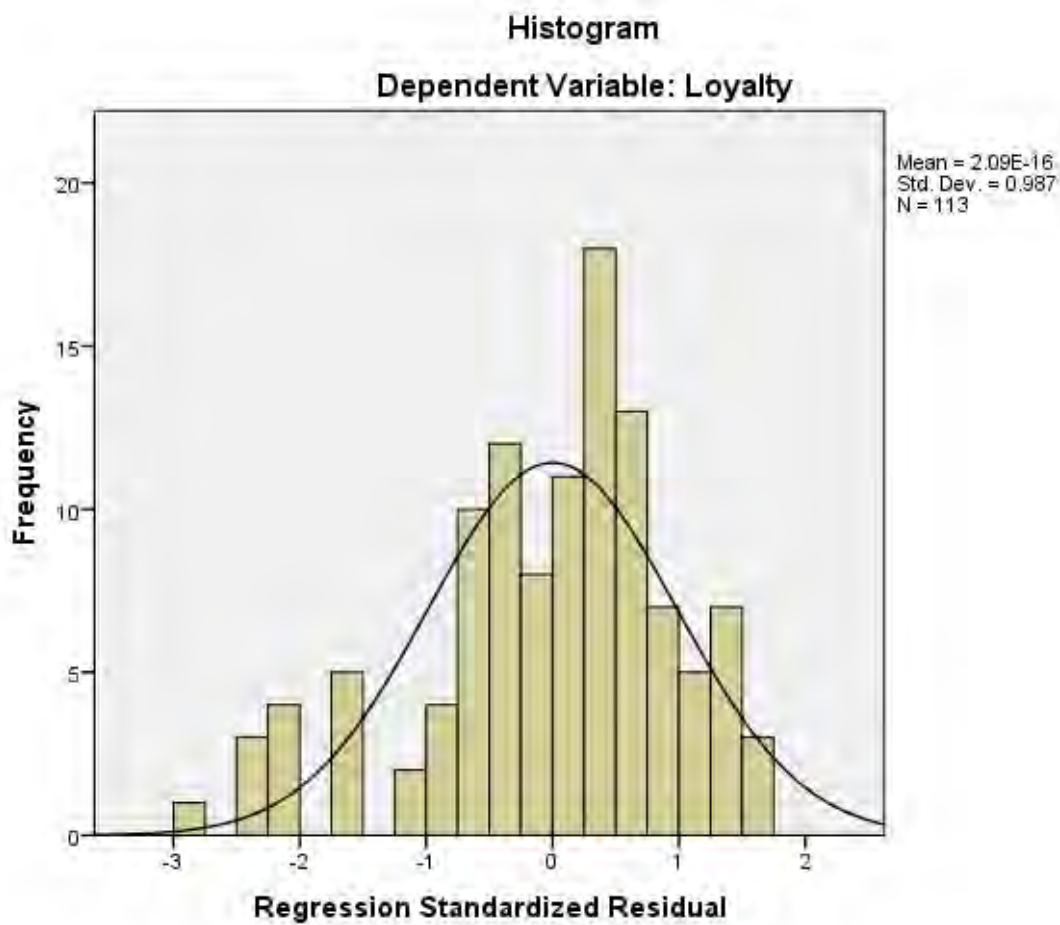
The Histogram of the Residual can be used to check whether the variance is normally distributed. A symmetric bell-shaped histogram which is evenly distributed around zero indicates that the normality assumption is likely to be true. If the histogram indicates that random error is not normally distributed, it suggests that the model's underlying assumptions may have been violated. In this research paper, the graph (figure5) shows that residuals follows the "bell", thus normality assumption is likely to be true.

[42]
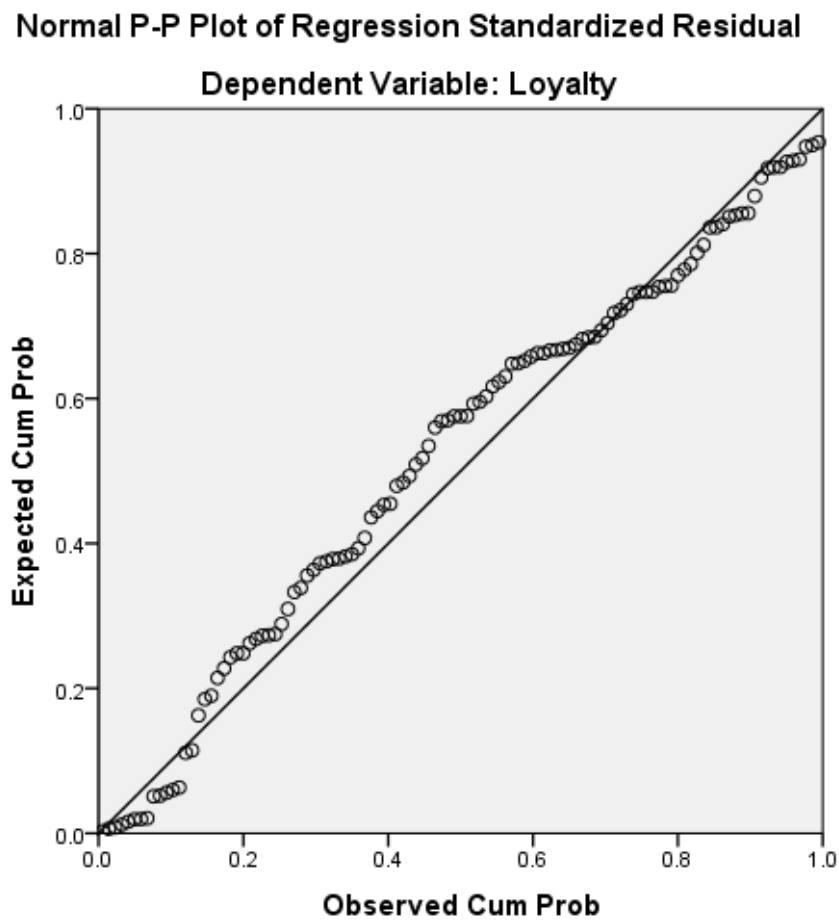
Figure 6

Normality plot for residuals reveals as well the normality of residuals. In figure6 above, the plot of residuals fits well enough the expected pattern. Therefore, residuals are normally distributed.

5.5. Mediated Regression Analysis

In this part of the analysis, author performed three regression tests to examine whether or not, preference mediates between the group of cohesion, ease of use and enjoyment (group1) and loyalty.

[43]

The first Regression analysis was with as dependent variable the preference while independent variables enjoyment, ease of use and cohesion. The next tables designate the results of the 1st regression test between group1 and preference.

Table15: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.781[a]	.609	**.599**	.62473

a. Predictors: (Constant), Enjoyment, Ease_of_Use, Cohesion

Table16: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	66.362	3	22.121	56.678	**.000[b]**
	Residual	42.541	109	.390		
	Total	108.903	112			

a. Dependent Variable: Preference

b. Predictors: (Constant), Enjoyment, Ease_of_Use, Cohesion

Table17: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.096	.398		2.751	.007
	Ease_of_Use	.083	.054	**.096**	1.522	**.131**
	Cohesion	-.006	.061	**-.006**	-.090	**.929**
	Enjoyment	.736	.071	**.749**	10.311	**.000**

a. Dependent Variable: Preference

The effect of group1 was significant, since an adjusted R^2 value of almost 60% of the total variance was explained, indicating that it is related significantly to loyalty. Although, only one out of three dimensions was proved to have positive statistically significant direct effects on loyalty. This is the variable of enjoyment with values of standardized coefficients beta 0.749 and p-value zero. No significant relationship was

[44]

PSAROS ATHANASIOS

25/02/14

FACTORS THAT AFFECT CUSTOMERS' LOYALTY IN ONLINE GAMES AND THE IMPACT OF
ECONOMIC RECESSION IN THE INDUSTRY.

confirmed between ease of use and cohesion, since their p-values are over the max limit of 0.50 (Howitt & Cramer, 2008).

The second Regression was as depended loyalty and as independents cohesion, ease of use and enjoyment; the next three tables represents the findings.

Table18: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.339[a]	.115	.090	1.57348

a. Predictors: (Constant), Enjoyment, Ease_of_Use, Cohesion

Table19: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.011	3	11.670	4.714	.004[b]
	Residual	269.865	109	2.476		
	Total	304.876	112			

a. Dependent Variable: Loyalty

b. Predictors: (Constant), Enjoyment, Ease_of_Use, Cohesion

Table20: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.824	1.004		1.817	.072
	Ease_of_Use	-.011	.137	-.008	-.079	.937
	Cohesion	.081	.154	.056	.525	.601
	Enjoyment	.507	.180	.308	2.818	.006

a. Dependent Variable: Loyalty

From the Table18 and Table19 above, an adjusted R^2 value of 0.09 at a 0.004 level of significance has been estimated, which shows that the examined independent variables can reliably explain not even 10% of the variation of intentions. The coefficients table presents the beta values of all the independent variables together

[45]

with their corresponding significance values. Taking into account these values, the most significant predictor of the group1 is only enjoyment with standardized coefficients beta 0.308. The other independent variables employed obtained high significance values than 0.05. Hence, they were excluded from further analysis. (Howitt & Cramer, 2008).

Finally, the third Regression was as depended variable loyalty and as independent factors cohesion, ease of use, enjoyment and preference; the next tables show the results.

Table21: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.490a	.240	**.212**	1.46454

a. Predictors: (Constant), Preference, Ease_of_Use, Cohesion,
Enjoyment

Table22: ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	73.230	4	18.308	8.536	**.000b**
1	Residual	231.646	108	2.145		
	Total	304.876	112			

a. Dependent Variable: Loyalty

b. Predictors: (Constant), Preference, Ease_of_Use, Cohesion, Enjoyment

[46]

Table23: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.785	.966		.812	.418
	Ease_of_Use	-.089	.129	**-.062**	-.693	**.490**
	Cohesion	.086	.144	**.060**	.600	**.550**
	Enjoyment	-.191	.235	**-.116**	-.812	**.419**
	Preference	.948	.225	**.566**	4.221	**.000**

a. Dependent Variable: Loyalty

From the Table21 above, an adjusted R^2 value of 0.212 with p-value zero. Thus, the model makes sense and 21% of variables are explained, indicating that it was related significantly to loyalty. However, only preference had significant effect on loyalty. (Howitt & Cramer, 2008).

Therefore, the relationship of group1 with loyalty is mediated by preference, because the strength of this relationship was increased and remained statistically significant by the entry of preference in the last model. The following table summarizes the findings (table24).

	Dependent variables		
	Model 1 (Preference)	Model 2 (Loyalty)	Model 3 (Loyalty)
	Std. beta	Std. beta	Std. beta
Group1			
Cohesion	.096	-.008	-.062
Ease of Use	-.006	.056	.060
Enjoyment	.749*	.308*	-.116
Preference	-	-	.566*
Adjusted R^2	.599*	.090*	.212*

Significant at *p<0.05

Table24

[47]

6. Epilogue

6.1. Conclusion

The three objectives of this study have been achieved. The first objective was to build the demographic profile of customers who occupied with online games. According to the research findings, the majority of users are males, belong to the age group of 25-35, are single and have no children, have college degrees, they are working with low income. Moreover, the majority of them have more than 5 years of experience in online games and they are loyal to one game.

The second objective has been accomplished via correlation and regression analyses, which were employed to verify seven hypotheses. These hypotheses aimed to identify the predictors of loyalty, customer preference and perceived enjoyment and the relationship among all these variables. The results showed that the most significant predictors of loyalty are customer preference, satisfaction and economic recession, where last factor has negative impact upon loyalty. Perceived cohesion and perceived enjoyment have moderate positive correlation (table4) but after the regression test they proved to be not significant predictors of loyalty (see Appendix C).

The third objective was to investigate the customer preference mediation between loyalty and perceived cohesion, perceived ease of use and perceived enjoyment. The objective was accomplished via three regression tests. The results proved that customer preference indeed mediates through loyalty, since preference improves more than 10% the adjusted R square, from 0.090 to 0.212 and with level of significance zero.

[48]

Overall, the variables that affect the most the loyalty are satisfaction, economic recession and customer preference while for the preference the most significant determinant is the perceived enjoyment. Thereby, development software companies should focus especially on these two factors and which criteria affect them, in order to be in the position to understand their customers.

6.2. Implications

The previous conclusions, which were derived from the executed research, provide useful insights for actions to be taken by quite a few interested parties. First of all, managers and developers of online games should be in the position to understand which factors affect users' loyalty and it should help them to revise and implement new strategies to retain their customers and acquire new ones.

Online games are purely entertainment products, which are used for enjoyment and relaxation. Thus, developers should stimulate users' intrinsic motivation such as fun, curiosity and exploratory (Hsu & Lu, 2004).

Perceived ease of use, according to author's results, has moderate and positive impact on the perceived enjoyment and customer preference. Thus, designers should improve the user interface, making it easy for everyone (Hsu & Lu, 2007).

The demographic profile should be used by the companies to identify some of the characteristics of their customers and should adopt their strategies among these groups. The new development enterprises should be informed about which factors affect mostly the game loyalty and should be adopt to these. Moreover, companies should focus more in order to improve the impact of social norms. They should build strong relationships between the customers

[49]

Moreover, social researchers should understand reasons of what makes these online games the new trend as a way of enjoyment.

6.3. Limitations

Due to the time available for the completion of the research paper, several were the limitations. Hence, the outcomes of this study should be taken and accepted with caution for numerous reasons. First, it should be noted that a bias exists because the sample was self-selected. The number of population who are participating such online games is unknown, therefore there is no equal chances for the individuals to be collected. Second, the questionnaire was uploaded and posted online, where respondents are self-selected, therefore there is no control of who is actually responding to this survey. In addition, the sample size might be small for the needs of such survey. However, the nature of the targets, as well as time and budget limitations, left no room for further investigation among the sampling methods. Finally, as it derived from the regression results (table12), only 30% of the prediction model of loyalty can be explained, which means that there are other variables that are not included in this paper and are significant to the loyalty of the customers.

6.4. Suggestions for further studying

The industry of online games is growing each year. A further research on costumers' loyalty is consider to be important not only for the development companies but for sociologists to study the trends in entertainment. Future researchers could measure online games with other forms of ways of entertainment, such as indoor activities like cinema or outdoor activities like nature excursions. They could focus on reasons why these people prefer to stay inside home and occupied themselves with online games. Moreover, future researches could also pursue the further testing of satisfaction that someone can enjoy while playing such games.

[50]

Finally, as already stated, the industry of online games is growing; the future researches could investigate the reasons of this growth. They could explore the ratio of the entry of new users occupying with online games, in combination of the current players.

7. Reflections on Learning

The whole experience of carrying out the present dissertation has been valuable. The author had the opportunity to improve his knowledge in the area of loyalty in online games and the impact of the economic recession. First of all, the whole procedure of research, including literature review, methodology and sampling improve his skills and knowledge. Moreover, deadline catching was one other advantage that the author acquired through this experience. Additionally, his writing skills are significantly improved, composing large reports, such as this paper. The author improved his teamwork abilities and acquired leadership capabilities and built a better organization attitudes. Furthermore, the author significantly improved the command of English language, both writing and oral skills as well listening and understanding abilities. Finally, the author improved his technical and computer software skills in using statistical analysis methods and software, such as SPSS, as well as in conducting surveys and managing time and stress.

If the research was to be conducted again, under the same time and budget limitations:

- The online questionnaire would have been posted in more forums related with computer games and would have been further promoted in order to gather more primary data; 113 filled questionnaire maybe be not enough, since the population number is very large.
- More time would have been devoted to the statistical analysis of the findings, which took more time than the originally scheduled.

[51]

References

- Chang, C., Liu, C.C., Chen, K. (2014). The effects of hedonic/utilitarian expectations and social influence on continuance intention to play online games. *Internet Research*, 24:1, 21-45

- Chen, L.S. (2013). Consumer-based leisure constraint for online gaming. *The Service Industries Journal,* 33:1, 115-132

- Chen, L.S., Lee, Y.H., Wang, S.T. (2012). Impact of intangibility on perceived risk associated with online games. *Behavior & Information Technology*, 31:10, 1021-1032

- Choi, J. (2011). Evolution of innovation focus of online games: from technology-oriented, through market-oriented, and to design-oriented soft innovation. *Asian Journal of Technology Innovation*, 19:1, 101-116

- Crawford, G. (2008). 'It's in the game': sport fans, film and digital gaming. *Sport in Society: Cultures, Commerce, Media, Politics*, 11:2-3, 130-145

- Crawford, G. (2012). *Video gamers*. Oxon: Routledge

- Davis, F.D., Bagozzi, D. P. & Warshaw, P.R. (1989). User Acceptance of Computer Technology: A Comparison of two Theoretical Models. Management Science, 35:8, 982-1003

- Davis, R., Lang, B., Gautam, N. (2013). Modeling utilitarian-hedonic dual mediation (UHDM) in the purchase and use of games. *Internet Research*, 23:2, 229-256

- DFC Intelligence » DFC Intelligence Forecasts Worldwide Online Game Market to Reach $79 Billion by 2017. 2013. *DFC Intelligence » DFC Intelligence Forecasts Worldwide Online Game Market to Reach $79 Billion by 2017*. [ONLINE] Available at: http://www.dfcint.com/wp/?p=353. [Accessed 05 July 2013].

- Fishbein, M. & Ajzen, I. (1975), Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley.

- Gao, Y. (2004). Appeal of online computer games: a user perspective. *The Electronic Library,* 22:1, 74-78

- Green, M.E., McNeese, M.N. (2008). Factors That Predict Digital Game Play. *Howard Journal of Communications*, 19:3, 258-272

[52]

- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. (2009), Multivariate Data Analysis 7th ed., Prentice Hall

- Herman, A., Coombe, R.J., Kaye, L. (2006). Your second life?. *Cultural Studies,* 20:2-3, 184-210

- Howitt, D. & Cramer, D. (2008), Introduction to Statistics in Psychology, 4th ed., Prentice Hall

- Hsu, C.L. & Lu, P.H. (2007), Consumer Behavior in Online Game Communities: A Motivational Factor Perspective, Computers in Human Behavior 23, pp. 1642-1659

- Hsu, C.L., Lu, H.P. (2004). Why do people play on-line games? An extended TAM with social influences and flow experience. *Information & Management*, 41, 853-868

- Huang, L.Y., Hsieh, Y.J. (2011). Predicting online game loyalty based on need gratification and experiential motives. *Internet Research*, 21:5, 581-598

- Jin, D.Y. (2010). *Korea's online gaming empire*. Massachusetts: Massachusetts Institute of Technology

- Lee, M.C. (2009). Understanding the behavioral intention to play online games. An extension of the theory of planned behavior. *Online Information Review*, 33:5, 849-872

- Lee, M.C., Tsai, T.R. (2010). What Drives People to Continue to Play Online Games? An Extension of Technology Model and Theory of Planned Behavior. *International Journal of Human-Computer Interaction*, 26:6, 601-620

- Liang, Y.H. (2012). Exploring the relationship between perceived electronic service quality, satisfaction, and personality: a study of Taiwan's online game industry. *Total Quality Management & Business Excellence*, 23:7-8, 949-963

- Liao, C.S. (2012). Self-construal, personalization, user experience, and willingness to use code sign for online games. *Information, Communication & Society*, 15:9, 1298-1322

- Lin, C.P. (2009). Learning Online Brand Personality and Satisfaction: The Moderating Effects of Gaming Engagement. *International Journal of Human-Computer Interaction,* 25:3, 220-236
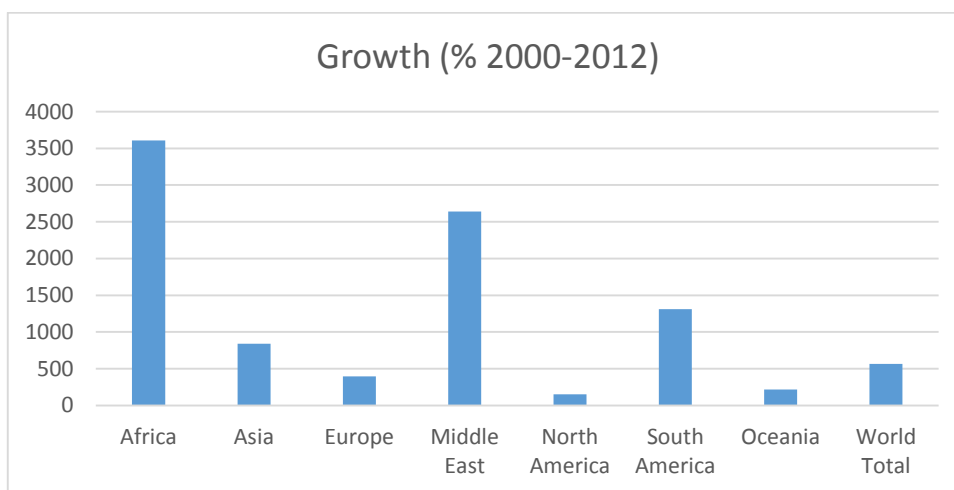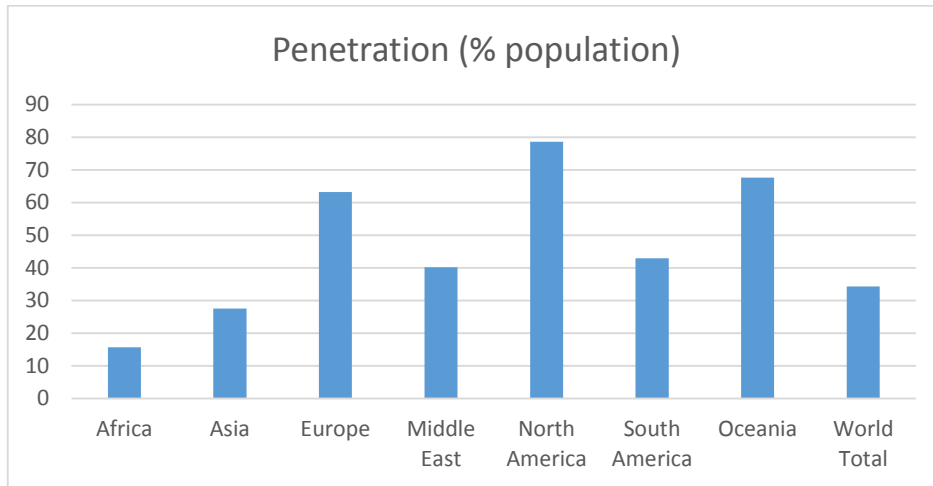
PSAROS ATHANASIOS

25/02/14

FACTORS THAT AFFECT CUSTOMERS' LOYALTY IN ONLINE GAMES AND THE IMPACT OF
ECONOMIC RECESSION IN THE INDUSTRY.

- Lloyd R. Jaisingh, 2000. Statistics for the Utterly Confused (Utterly Confused Series). 1 Edition. McGraw-Hill.

- Mouakket, S. & Al-hawari, M. A. (2012). Examing the antecedents of e-loyalty intention in an online reservation environment: Journal of Hight Technology Management Research, 23, 46-57

- Nunnaly, J. & Bernstein, I. (1994), Psychometric Theory, 3rd ed., McGraw Hill, INC

- Saunders, M., Lewis, P. & Thornhill, A. (2009), *Research Methods for Business Students,* 5 Ed. Prentice Hall

- So-Eui, R., Martinez, J. (2009). Online games look for gains from recession. Available at http://www.nytimes.com/2009/02/02/business/worldbusiness/02iht-game.1.19860447.html?_r=0

- Teng, C. (2010). Customization, immersion satisfaction, and online gamer loyalty. Computers in Human Behavior, 26, 1574-1554

- Vallerand, R.J., Pelletier, L.G., Deshaies, P., Cuerrier, J.P. & Mongeau, C. (1992), Ajzen and Fishbein's Theory of Reasoned Action as Applied to Moral Behavior: A Confirmatory Analysis, Journal of Personality and Social Psychology, 62:1, 98-109

- World Internet Users Statistics Usage and World Population Stats. 2013. *World Internet Users Statistics Usage and World Population Stats*. [ONLINE] Available at: http://www.internetworldstats.com/stats.htm. [Accessed 05 July 2013].

- Wu, T.C., Scott, D., Yang, C.C. (2013). Advanced or Addicted? Exploring the Relationship of Recreation Specialization to Flow Experiences and Online Game Addiction. *Leisure Sciences: An Interdisciplinary Journal*, 35:3, 203-217

- Yee, N., Bailenson, J.N., Urbanek, M., Chang, F., Merget, D. (2007). The Unbearable Likeness of Being Digital: The Persistence of Nonverbal Social Norms in Online Virtual Environments. *CyberPsychology & Behavior*, 10:1, 115-121

- Zhu, D.S., Lin, C.T., Hsu, Y.C. (2012). Using the technology acceptance model to evaluate user attitude and intention of use for online games. *Total Quality Management & Business Excellence*, 23:7-8, 965-980

[54]

Appendices

A. Bar Charts illustrating the penetration and growth of internet.

Source: World Internet Users Statistics Usage and World Population Stats. 2013. *World Internet Users Statistics Usage and World Population Stats*. [ONLINE] Available at: http://www.internetworldstats.com/stats.htm. [Accessed 05 July 2013].

[55]

B. Questionnaire

Part A - Introductive	
1) Which of the following Online Games, is your favorite 2) How many years do you have online gaming experience 3) How many online games do you play	Teng, C. (2010)
Part B – Main Questions	
Social Norms	
1) My colleagues think that I should participate in the online game 2) My classmates think that I should participate in the online game 3) My friends think that I should participate in the online game	Hsu, C.L. & Lu, P.H. (2007), Mouakket, S. & Al-hawari, M. A. (2012)
Ease of Use	
1) Learning to participate in the online game is easy for me 2) It is easy for me to become skillful at participating in the online game 3) I think it is easy to participate in the online game	Hsu, C.L. & Lu, P.H. (2007)
Cohesion	
1) I fit in well in the online game community 2) I like the members of the online game community 3) In general, online game communities act as a cohesive unit	Hsu, C.L. & Lu, P.H. (2007)
Enjoyment	
1) The process of participating in online games is enjoyable 2) While participating in the online games, I experienced pleasure 3) Overall, I believe that the online game is playful	Hsu, C.L. & Lu, P.H. (2007)
Preference	
1) I like participating in online game 2) I feel good about participating in the online game	Hsu, C.L. & Lu, P.H. (2007)
Satisfaction	
1) The online game is committed to my satisfaction 2) Generally speaking, all my experience with the online game has been satisfactory 3) This online game had the level of quality I expected	Mouakket, S. & Al-hawari, M. A. (2012), Self- worded
Economic Recession	
1) The economic recession had a negative impact on my behaviour in the online games 2) Due to the economic recession, I think subscription of online games are perceived as expensive 3) I am thinking to quit participating online games due to the economic recession	Self- worded
Loyalty	
1) I will frequently re-participate in the online game in the future 2) I intent to continue participating in the online game	Hsu, C.L. & Lu, P.H. (2007), Teng, C. (2010)

[56]

Part C - Demographical	
1) Sex 2) Age 3) Marital Status 4) Do you have children 5) What is your education 6) Do you work 7) Monthly personal Income (in euros)	Self- worded

C. Regression Analysis

The following regression was conducted with loyalty as dependent and a number of variables independent which are social norms, cohesion, enjoyment, preference, satisfaction and economic recession. From this test, almost 29% was explained by the model with only the half of the variables were significant. These are preference, satisfaction and economic recession. The others could be eliminated by the test.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.568a	.322	.284	1.39605

a. Predictors: (Constant), Economic_Recession, Cohesion, Social_Norms, Satisfaction, Preference, Enjoyment

ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	98.288	6	16.381	8.405	.000b
	Residual	206.588	106	1.949		
	Total	304.876	112			

a. Dependent Variable: Loyalty

b. Predictors: (Constant), Economic_Recession, Cohesion, Social_Norms, Satisfaction, Preference, Enjoyment

[57]

FACTORS THAT AFFECT CUSTOMERS' LOYALTY IN ONLINE GAMES AND THE IMPACT OF
ECONOMIC RECESSION IN THE INDUSTRY.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.132	1.081		1.047	.297
	Social_Norms	-.002	.085	-.002	-.020	**.984**
	Cohesion	.019	.138	.013	.141	**.888**
	Enjoyment	-.242	.229	-.147	-1.057	**.293**
	Preference	.754	.220	.451	3.432	**.001**
	Satisfaction	.301	.150	.186	2.006	**.047**
	Economic_Recession	-.226	.091	-.218	-2.481	**.015**

a. Dependent Variable: Loyalty

[58]