UNDERSTANDING CONSUMER INNOVATIVENESS VIA THEORY OF GOAL DIRECTED BEHAVIOR: AN INVESTIGATION OF FACTORS AFFECTING ADOPTION OF ONLINE GAMES

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ABSTRACT

UNDERSTANDING CONSUMER INNOVATIVENESS VIA THEORY OF GOAL DIRECTED BEHAVIOR: AN INVESTIGATION OF FACTORS AFFECTING ADOPTION OF ONLINE GAMES

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This study aims to analyze the factors behind adoption of online games, using a theoretical foundation based mostly on the theory of goal-directed behavior and diffusion of innovations model. Factors affecting the adoption behavior are determined on the basis of the goal directed behavior theory, and differences between adopter categories of online game buyers are investigated by applying Rogers' diffusion of innovations (DOI) theory.

Online survey was conducted to reach target group by using social media and forums. 308 online game players from different environments participated to the survey. Hypotheses were identified according to the objectives of the study and theoretical framework. The results demonstrate the importance of anticipated emotions and triability for the adoption of online games. Players expect to have positive impression and experiences with the new online game. In addition, online gamers want to be sure that new online game is worth purchasing and playing. This study aims to contribute to both the relevant theoretical knowledge regarding consumer innovativeness and the strategic approaches of online game marketers.

Keywords: Diffusion of innovation, goal-directed behavior model, online games, attributes of innovation

ÖZ

AMACA YÖNELİK DAVRANIŞ TEORİSİ İLE TÜKETİCİ YENİLİKÇİLİĞİNİN İNCELENMESİ: ÇEVRİMİÇİ OYUNLARIN BENİMSENMESİNİ ETKİLEYEN FAKTÖRLERİN ARAŞTIRILMASI

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Bu çalışma, çevrimiçi oyunların benimsenmesini etkileyen faktörleri amaca yönelik davranış modeli ve yeniliğin yayılması teorisi kullanılarak araştırılmasını amaçlamaktadır. Yeniliğin benimsenmesini etkileyen faktörler amaca yönelik davranış teorisi kullanılarak belirlenirken, kabullenici kategorileri arasındaki farkların incelenmesinde Rogers'ın yeniliğin yayılması teorisine başvurulmuştur.

Araştırma kapsamında veri toplamak için çevrimiçi bir anket çalışması yürütülmüş ve toplam 308 online oyun kullanıcısı ankete katılmıştır. Sosyal medya ve çevrimiçi forumlar kullanılarak farklı çevreden pek çok katılımcıya ulaşılmıştır. Çalıma kapsamında test edilecek hipotezlerin belirlenmesinde çalışmanın hedefleri ve teorik altyapı esas alınmıştır. Elde edilen sonuçlar duyguların çevrimiçi oyunların benimsenmesindeki önemini ortaya koymuştur. Oyuncuların yeni bir çevrimiçi oyun oynarken olumlu bir deneyim yaşamak istedikleri görülmüştür. Buna ek olarak, kullanıcılar yeni oyunun oynamaya ve satın almaya değer olduğundan emin olmak istemeleri, denenebilirlik özelliğinin önemini vurgulamıştır. Bu çalışma, tüketici yenilikçiliği ile ilgili literatüre ve çevrimiçi oyun pazarlamacıların stratejik yaklaşımlarına katkıda bulunmayı amaçlamaktadır.

Keywords: Yeniliğin yayılması, amaca yönelik davranış modeli, çevrimiçi oyun, yeniliğin özellikleri

To my precious family

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AE	Anticipated Emotions
ATCSI	Attention to Social Comparison Information
DOI	Diffusion of innovation
EFA	Explanatory factor analysis
KMO	Kaiser-Meyer-Olkin
MMOFPS	Massively Multiplayer Online First-Person Shooter
MMORPG	Massively multiplayer Online Role-playing Game
MMORTS	Massively Multiplayer Online Real-time Strategy
MGB	Model of Goal-directed Behavior
TURKSTAT	Turkish Statistical Institute
TPB	Theory of Planned Behavior

CHAPTER 1

INTRODUCTION

Ted Levitt once declared: *"Just as energy is the basis of life itself, and ideas the source of innovation, so is innovation the vital spark of all human change, improvement and progress."* Innovations increase quality of life for everyone and make people's lives easier. There is no doubt that internet is one of the most significant innovations in the history of humankind, since it opens a new world of communication and provides infinite access to information. Nowadays, internet is inevitable for many people. There are more than 35 million internet users in Turkey, and people continue to spend more and more time online for communicating with others, shopping, travel arrangements, following news, playing games, and so on. Online games are one of many forms of significant innovation facilitated by the internet revolution.

The popularity of online games has also driven substantial scholarly attention. Studies about different dimensions of online games have been conducted by many researchers. Much research in this area has been conducted within the general domain of the topic of consumer innovativeness. Understanding why some consumers are more innovative than others in terms of adopting new products has been the core subject matter of this research stream. Since online games are truly innovative products in a highly dynamic market, studying the antecedent factors affecting adoption of online games would obviously contribute substantially to this research area. There is also ample evidence that different adopter categories behave differently in terms of what drives their adoption of new products. Thus, studying the effects of antecedent factors separately for each adopter category (i.e., innovators, early adopters, late adopters, laggards, etc.) would reveal valuable insights. If the relative effects of selected antecedent factors on the adoption of online games can be

determined for different adopter categories, several normative insights could also be revealed for the practice of online game marketing.

Accordingly, the main objective of this thesis is to reveal the factors affecting adoption of online games, using a theoretical foundation based mostly on the theory of goal-directed behavior and diffusion of innovations model. Factors affecting the adoption behavior are determined on the basis of the goal directed behavior theory, and differences across adopter categories of online game buyers are investigated by applying Rogers' diffusion of innovations (DOI) theory. In doing so, the study aims to contribute to both the relevant theoretical knowledge regarding consumer innovativeness and the strategic approaches of online game marketers.

Perugini and Bagozzi's model of goal-directed behavior (hereafter, MGB) and Rogers' DOI (diffusion of innovation) theory are used as the basis of theoretical background in this thesis. After a deep understanding of theories and review of literature, data are collected from online gamers and analyses are conducted to reveal the significant factors behind the diffusion of online games. Firstly, correlation between attributes of innovation and constructs of goal-directed model are examined by conducting advanced statistical analysis. Linear regression models and hierarchical regression procedures are applied in order to observe the significant relationships between the variables of interest. Variables are categorized as socio-economic factors, personal characteristics, attributes of innovation and determinants of MGB. These variable groups are identified as the main blocks and each block is included into the analyses sequentially. Differences across adopter categories are then revealed.

The results of the study are rather rich and highlight several interesting issues regarding consumer adoptions of new products. Most prominent result of the study points out to the importance of anticipated emotions for the adoption of online games, for instance. Players expect to feel relaxed, happy and excited while playing online games. They hope to have positive impression and experiences with the new online game. In addition, online gamers want to be sure that new online game is

worth purchasing and playing. This expectation emphasizes the significance of triability for new online game. People prefer to try the new online game before purchasing/ playing. Therefore, triability of new online game before purchasing/ playing is another significant factor affecting adoption of online games. These and several other novel and insightful findings are revealed and discussed through the study.

The present chapter aims to make brief introduction by explaining the objective and main reasons behind why this study is conducted.

Chapter 2 focuses on comprehensive literature review which includes the theoretical background of this study. First of all, diffusion of innovation theory is explained in detail regarding significant research and article in the field. There are plenty of essential studies in the literature which should be definitely considered under diffusion of innovation theory. Therefore, related studies and resources are mentioned so as to include different perspectives to this study. Furthermore, attributes of innovation and adopter categories are examined in detail. Goal-directed behavior model is the second significant theory which should be mentioned in the literature review chapter. Determinants of goal directed theory are explained separately in order to enlighten the logical background of the theory.

Aim of the study is to investigate the factors behind the adoption of online games by applying goal-directed behavior model and diffusion of innovation theory. After providing the insight about theoretical background of the study, following chapter will involve the main research question and the hypotheses which will be tested by applying statistical analyses. In Chapter 3, research model is presented and all hypotheses are indicated separately.

Data collection, explanations of the questions and scales are given in the Chapter 4. Data collection methods and reasons behind selection of online survey are provided in this chapter. Development of measures and questions in the survey is explained in detail.

Chapter 5 includes findings and results of the survey. First of all, descriptive statistics is given with the graphs and tables. For measure purification, reliability analysis and factor analysis are applied in order to obtain accurate results. Lastly, advance statistical analyses are conducted in order to test the identified hypotheses one by one. Results are interpreted in accordance with the appropriate statistical theories and literature review.

Finally, Chapter 6 is the conclusion part. This chapter involves discussions and deductions regarding the findings and interpretation of results. Limitations of this study are mentioned. Discussions of results are provided and recommendations for future research are made to provide guidance for other researchers. Last part will be managerial implications which will involve recommendations for managers considering the results of the study.

CHAPTER 2

LITERATURE REVIEW

2.1 Definition of Innovation & Diffusion

Rogers (1983) defined diffusion as "*process by which an innovation is communicated through certain channels over time among the members of a social system."* Diffusion is as a type of communication which involves new ideas (Rogers, 1983, p. 5).

Many people defined innovation differently by mainly focusing originality and newness. According to Rogers, innovation is *"perception of an idea or object as new by an individual*". If individual's reaction is new to the idea or the object, then it is an innovation. (Rogers, 1983). Mohr believes that it is significant to make distinction between two ideas of invention and innovation. According to him, *"Invention implies bringing something new into being; innovation implies bringing something new into use"* (Mohr, 1969, p.112).

2.2 Theory

2.2.1 Diffusion of Innovations (DOI) Theory

Diffusion of innovation research started with the studies of German-Austrian and British schools of diffusion in anthropology members. They proposed that introduction of an innovation in other societies can cause change in a society. The second significant study in 1940s was conducted by French sociologist Gabriel Tarde who revealed the role of opinion leaders during the process of imitation. As a result of initial studies, classical model for the diffusion of new ideas has emerged. According to this model, the main elements of diffusion model are the innovation, certain communication channels, time and social system. This classical model actually formed a basis for Rogers's Diffusion of Innovation Theory (Rogers, 1976).

Ryan and Gross conducted a significant research which can be considered as revolutionary in many ways during 1940s. Their study aimed to reveal the innovation process of Hybrid Corn which is one of most remarkable innovation in mid-west agriculture. As a result of interviews with Iowa farmers, rate of adoption appeared to be s-shape normal curve. It was concluded that farmers who adopts quickly (innovators) were more cosmopolitan and they had higher socio-economic status compared to late adopters. Farmers mostly learned the innovation from corn salesman and interpersonal communication between friends and farmers. This was the most frequent channel to spread the innovation. In this case, time to adopt innovation took nine years which can be regarded as long (Ryan & Gross, 1943) .

Researchers tried to develop a scale for measuring innovativeness using time-of-adoption method. Time-of-adoption method should not be used for forecasting since it depends on customer and it can be biased. Moreover, it is really hard to evaluate scale's validity and reliability. This method has been criticized due to methodological and theoretical weaknesses by many researchers (Hurt, Joseph, & Cook, 1977). Goldsmith and Hofacker (1991) studied on development of a measure for consumer innovativeness since there has been no reliable, valid and adoptable scale until then. They achieved to develop self-report, valid and reliable measure for innovativeness which assesses consumer's adoption of innovation behavior. This measure can be used to identify the profile of potential customers which includes demographics, lifestyle, behaviors, and brand preferences (Goldsmith & Hofacker, 1991).

Tolba and Mourad (2013) investigated cultural factors behind acceptance and diffusion of innovations and constructed a conceptual model. Adoption process for new products changes according to personal values such as demographics, personality factors, socioeconomics and culture. Among these factors, it was concluded that income, educational level, professional status, age, ethnicity have a significant relationship with the attitudes of people towards innovation acceptance. People who are more inclined to adopt new products were found to be young and have high professional status, income and educational level (Tolba & Mourad, 2013).

Diffusion of innovation theory has been studied for many years now, and the most significant theories belong to Bass and Rogers. Rogers can be considered as one of the pioneers of this theory. After him, more than 400 publications have been produced about the subject matter and diffusion of innovation theory has been popular among researchers.

2.2.1.1 Rogers's Diffusion of Innovation Theory

Rogers started to study diffusion of innovation in 1962 and constructed main framework of theory. According to Rogers's there are four main elements behind diffusion of innovation theory. These are innovation, communication channels, time and the social system. An ***innovation*** is perception of an idea or object as new by an individual. A ***communication channel*** is a way of transmitting messages from one individual to another. It is really important for diffusion process since innovations spreads by communication channels in a specific amount of time. ***Time*** is other essential element for the innovation-decision process, innovativeness, and an innovation's rate of adoption. ***Social system*** consists of people, formal groups, organizations and informal groups. Social system structure has an impact on diffusion process in many ways. Opinion leaders in social system, relationship between individuals and culture all affect diffusion of innovation process differently (Rogers, 1983).

There has been significant amount of research conducted to validate the profiles of customers of adopter categories. These researches mainly focus on investigating the relationship between time of adoption and age, gender, education, income level, personality characteristics.

According to Rogers (1983) all individuals adopt an innovation differently, not at the same time. Time sequence that they adopt innovation formed the basis of Rogers' adopter categories. As it can be seen in Figure 1, there are five main adopter categories, namely, innovators, early adopters, early majority, later majority, and laggards.

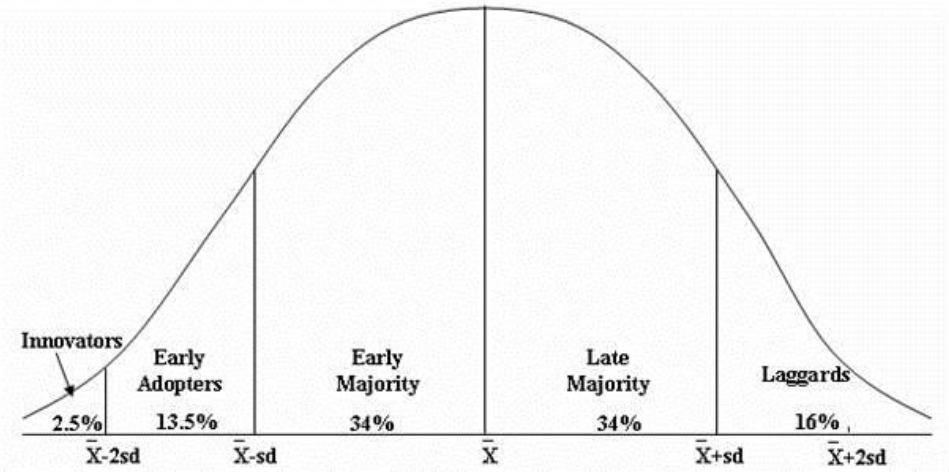

Figure 1 Adopter Categories

Source: Rogers, E. M. (1983). *Diffusion of Innovations*. London: Collier Macmillan.

Rogers has developed these categories to identify ideal types of customers on the basis of "demographic, socioeconomics and personality". Rogers drew some conclusions about personality of adopter categories and decided some adjectives to identify each category. These words are "venturesome" for innovators, "respectable for early adopters, "deliberate" for early majority, "skeptical" for late adopters and "traditional" for laggards (Rogers, 1983, p.248).

Early adopters play significant part in diffusion of new products compared to other categories. According to the study based on role of early adopter, they have two different roles in adoption of new product: dissemination and labeled imitation. Dissemination involves sharing information with people about the new product. In other words, early adopters take part in spreading information related to new product including their opinion about features, advantages, disadvantages, quality and valuableness. Labeled imitation, on the other hand, is resulted from early adopters' way of communication with late adopters. Purchase of new innovation after early adopters can be interpreted as implication of imitative behavior for late adopters. Therefore, they have positive and negative influence in adoption process. Dissemination period may accelerate the diffusion process of late adopters while imitation role has reverse effect which can cause late adoption (Frattini, Bianchi, Masis, & Sikimic, 2014).

There is plenty of research carried out so as to define the adopter categories of different products. One was conducted for diffusion of personal computers considering the five adopter categories. Aim of the study is to reveal the differences among groups and show the usefulness of the categories. According to the statistics obtained, adopter categories were differentiated substantially in terms of age, education, household income and occupation. Results demonstrate that early adopters are more likely to be highly educated. Moreover, they tend to have higher income and profession. There is no significant difference between Laggards and Late Adopters regarding occupation. The study also showed that Bass model might be used to work on the differences between adopter categories (Mahajan, Muller, & Srivastava, 1990).

Adoption of innovation cannot be generalized for each product category. In the same way, characteristics and profile of adopter categories cannot be generated for each product category. Robertson identified profiles of each adopter category by using important values, personal characteristics and social relationships instead of considering product category (Robertson, 1971).

Adopter categories of Rogers have so many advantages. This categorization is not only simple but also applicable since it allows researchers make comparison between results of different studies. As diffusion of innovation curve is proposed to be normal, acceptance of a product can be easily forecasted and contributed to adopter categories. Despite the advantages of categorization, there are some limitations of applying these categories. First of all, there is no accurate proof that all products will have normal-distribution pattern as it was claimed by Rogers. Furthermore, there is no precise rationale behind the proportions of each adopter category for all new innovative products (Mahajan, Muller, & Srivastava, 1990).

Wright and Charlett (1995) also claimed that there are some potential limitations of Rogers' approach. First of all, there is no experimental proof for correlation between innovativeness and personal characteristics. Secondly, Rogers identify these categories considering mean time of adoption, so researchers/marketers have to wait

until the completion of diffusion of new product. Lastly, people are defined as innovators because they are among the first purchasers. However, socio-economic, demographic characteristics and personality of people are not actually included when identifying the adopter categories (Wright & Charlett, 1995). Considering the limitations of Rogers's theory, they also investigated the predictive ability of the other famous model "Bass Model for DOI Theory". So, what makes Bass theory different from Rogers's theory?

2.2.1.2 Bass's Model for Diffusion of Innovation Theory

Bass claims that diffusion of innovation is mainly affected by two types of communication, namely, mass media and word of mouth. According to Bass, individuals can be divided into two groups; innovators, and imitators. Innovators are influenced by mass-media communication (external influence) while imitators are basically affected by word-of-mouth communication (internal influence). External and internal influence on diffusion of innovation can be seen in the below figure. Bass's model is claimed as a powerful model to make accurate prediction about diffusion of innovation in many sectors including retail service, industrial technology, agricultural, educational and so on. (Mahajan, Muller, & Bass, 1990)

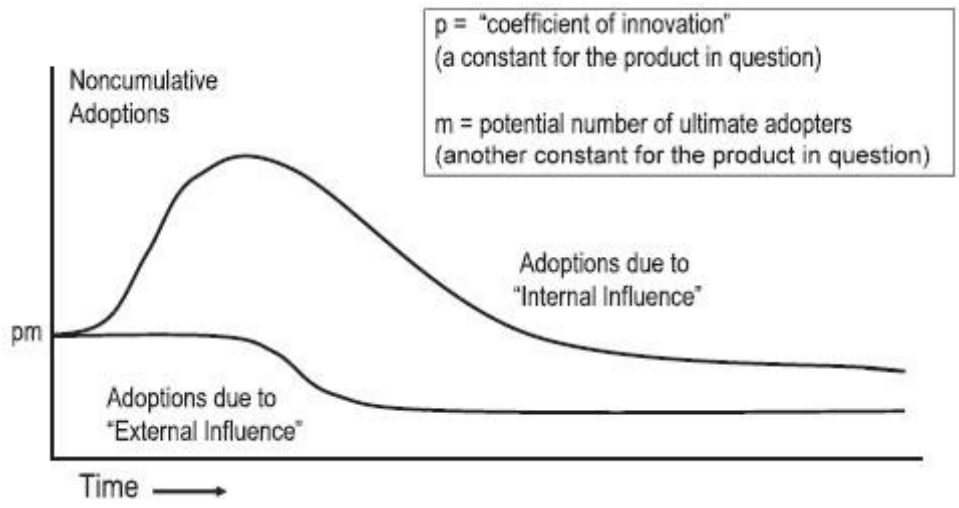

Figure 2 Adoptions in Bass Model

Source: Mahajan, V., Muller, E., & Bass, F. M. (1990). New Product Diffusion Models in Marketing: A Review and Directions for Research. Journal of Marketing, 1-26.

Attributes of Innovation

Innovations can be adopted at different times in terms of product category. Some of the innovations are adopted more rapidly than others in the social system. Main reason of this difference is the specific characteristics of innovation. So, what are these characteristics of innovations? Rogers, Moore-Benbasat and Tornatzky-Klein studied on this subject in order to determine which characteristics might have an important impact on rate of diffusions.

Rogers claimed that there are five main characteristics to predict individual's rate of adoption since his first studies in 1962. According to him, "relative advantage, compatibility, complexity, triability and observability" consistently affect diffusion of innovation. He described these five characteristics as follows:

- ***Relative advantage:*** the degree to which an innovation is perceived as better than its rivals. Relative advantage can be resulted from price, benefits, quality, economic advantages and etc. For instance, some of products have successful technological improvements which result in decreasing costs of production. So, these products can be released the market with low price which will differentiate this product from its rivals.
- ***Compatibility:*** the degree to which an innovation is perceived as compatible with values, experiences, life style, expectations and needs of potential adopters.
- ***Complexity:*** the degree to which an innovation is perceived as comparatively hard to comprehend and use. When a product is complicated to use and hard to follow the instructions, people may classify the product as complex. Complexity is generally accepted as a negative factor which might slow down the diffusion process.
- ***Triability:*** the degree to which an innovation can be experienced temporarily before purchase. If customers have a chance to try new innovations and ideas, it is quite likely that they will be adopted more quickly.

After trying new online game on the store or trying the game with trial version, people might have a good experience. Then, they may decide to buy the online game earlier than expected.

- ***Observability:*** the degree to which consequences of an adoption is visible to people. The results of some innovations can be visible to others easily, whereas some innovations are difficult to observe. For instance, the software is not a convenient example for observation which cause slower rate of adoption process. (Rogers, 1983)

In 1982, Tornatzky and Klein reviewed literature of innovation characteristics and conduct an analysis on research results in order to reveal relationship between attributes of innovation. Ten characteristics of innovation were mainly worked on so as to find significant relationship between them and adoption. As a result of meta-analysis they applied, three of ten characteristics are consistently related to adoption. According to Tornatzky and Klein's research results, relative advantage and compatibility are positively correlated with innovation adoption, while complexity is negatively related. Therefore, it was concluded that compatibility and complexity are the most effective attributes of innovation. (Tornatzky & Klein, 1982).

Moore and Benbasat added one more significant characteristic to the attributes of innovation defined by Rogers. This characteristic is "voluntariness of use". Voluntariness of use is described as *"the degree to which use of the innovation is perceived as being voluntary or freewill".* In other words, it is whether person is free to adopt or reject. When diffusion of innovation is investigated, voluntariness of use should also be considered. Many studies assume that adopters are free/ voluntary to adopt since is it not likely that they are forced to buy the product (Moore & Benbasat, 1991, p.195). Nevertheless, some adopters may feel compelled to adopt the new idea/ innovation due to environmental reasons. Moreover, some people may believe that they should purchase some products in order to fit into the society and socially accepted by others.

Opinion Leadership and Innovativeness

Opinion leadership concept was first introduced with study of voting which was conducted by Lazarsfeld, Barelson and Gaudet in 1940s. According to the study, it has been revealed that interpersonal communication is a powerful way of exchanging information. Furthermore, it is an effective way of affecting decisions of individuals (Lazarsfield, Berelson, & Gaudet, 1944).

According to Rogers's (1983) description, opinion leadership is "the degree of an individual's capability of affecting other people's attitudes and behaviors as desired" (Rogers, 1983, p.27). Friends, colleagues, relatives, neighbors are all considered as potential opinion leaders in a social system. Opinion leaders are regarded as a significant source of influence on other people's purchasing decisions. This influence includes face-to-face interaction or any other communication between opinion leader and follower. This relationship between opinion leader and follower is a strong predictor of consumer behavior (Childers, 1986).

Personal influence is interpreted as opinion leadership in a lot of diffusion of innovation studies. It has been claimed by many researchers that opinion leaders are powerful characters affecting other people's decisions and thoughts about innovations. Behavior of opinion leaders not only play an important role on innovation adoption but also activate the diffusion network. According to Rogers's claim, the reason behind s-shape diffusion curve is the time at opinion leaders adopt the innovation and influence others in the social system. Rogers (1983) made some generalizations about opinion leaders in his book and explained the relationship between innovativeness and opinion leadership in whole chapter. According to his generalizations, opinion leaders are claimed to be more innovative than followers. Furthermore, opinion leaders have a higher status and they have interest in following mass and social media. They are more likely to participate in the social events and activities. As a result, they are more familiar to the sector rules and standards compared to their followers (Rogers, 1983).

King and Summers (1970) worked on an important study to produce opinion leadership scale by using six broad product categories. Opinion leadership consists of seven questions and it was applied for each product categories. Respondents were selected from opinion leaders of each product. As the interest in diffusion of innovation theory increases, measuring the effect of opinion leadership becomes more significant. Therefore, Childers (1986) focused on opinion leadership and assessed the scale developed by King and Summers. Aim of the assessment was to increase the internal consistency of the scale. Findings explained the relationship between innovativeness and opinion leadership more accurately. According to the results, 7-item scale of King and Summers's reliability is 0.66 (which is lower than acceptable limit), while revised improved Childers's scale's reliability is 0.79. It can be concluded that reliability of the scale was improved (Childers, 1986).

2.2.2 Theory of Goal Directed Behavior

Goal directed behavior model is an extensional study of theory of planned behavior (TPB) with additional determinants of intention. Before getting into details about the goal directed behavior, it will be better to briefly mention about the theory of planned behavior. TPB is a commonly used model in order to explain the attitude-behavior relationship. TPB predicts variety of behavior by using specific determinants such as intention, attitude, subjective norms and perceived behavioral control (Connor & Armitage, 1998). According to article of Ajzen; attitudes toward the behavior, subjective norms, and perceived behavioral control are important factors to predict intentions accurately. These intentions and perceptions of behavioral control, explain significant variance in actual behavior (Ajzen, 1991).

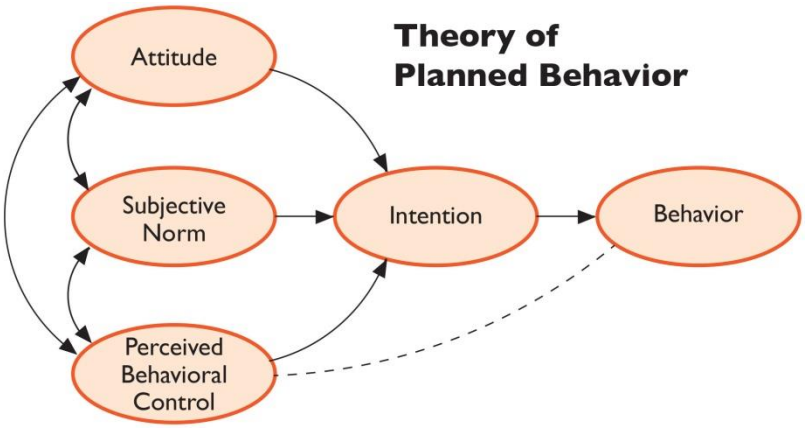

Figure 3 Theory of Planned Behavior

There are a lot of research to support validity and usefulness of theory of planned behavior. However, more powerful model called "goal-directed behavior" is proposed which is an alternative to the TBP (Leone, Perugini, & Ercolani, 2004). Perugini and Bagozzi (2001) conducted a comprehensive study and proposed a new model as "goal-directed behavior" which extends theory of planned behavior. MGB widens TPB's scope by adding new dimensions which might have an impact on intention and behavior. Perugini and Bagozzi claimed that behavioral intention can be better understood by introducing new constructs contributed to the effects of existing variables. MGB identifies positive and negative anticipated emotions to explain variance in desire. Frequency of past behavior is considered as a predictor of desire, intention and behavior, while recency of past behavior only explains behavior. Lastly, frequency and recency of past behavior are included in the model in order to help researcher to integrate information related to different aspects of goal-directed behaviors which is also not considered in TPB. (Perugini & Bagozzi, 2001). To sum up, desire primarily activates intention in order to perform behavior according to MGB (Leone, Perugini, & Ercolani, 2004). Below figure demonstrates the goal-oriented behavior model:

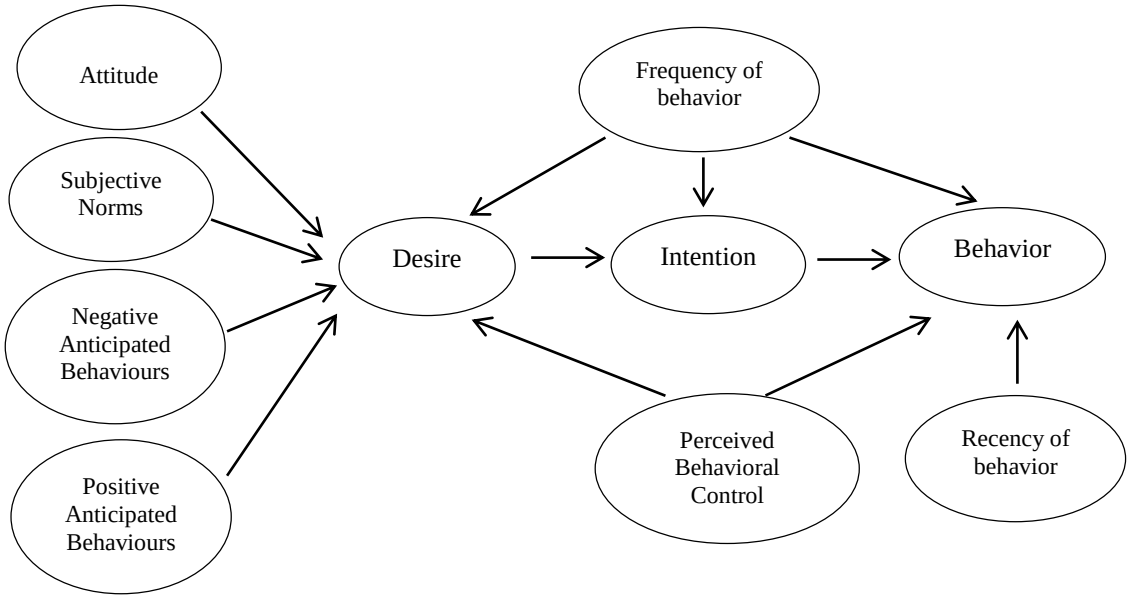

Figure 4 The Model of Goal-directed Behavior

Source: Perugini, M., & Bagozzi, R. P. (2001). The role of desires and anticipated emotions in goal-directed behaviors: Broadening and deepening the theory of planned behavior. *British Journal of Social Psychology*, 79-98.

Perugini, Leone and Ercolani conducted an inclusive research in order to compare theory of planned behavior and goal-directed behavior theory in terms predictive functions, validity and usefulness. In this study, they aim to measure effectiveness of a training program for statistical software SPSS. They conducted a questionnaire which includes measurements for attitudes, subjective norms, perceived behavioral control, desires, anticipated emotions, intention and past behavior. Participants filled the questionnaire both at the beginning and at the end of the training program so that difference can be observed. Measurement of Perugini and Bagozzi (2001) was used in order to collect the data. According to results, both models successfully explained the variance in intention, behavior and goal attainment. Results demonstrate that MGB accounts for more variance in goal attainment, intention and behavior compared to TPB. Nevertheless, TPB can be preferred for some research due to

being a simpler model, but MGB is more advantageous and powerful (Leone, Perugini, & Ercolani, 2004).

There has been limited number of research conducted about the emotional factors together with social psychological factors behind people's travel vehicle choices. Therefore, study has been carried out in order to reveal the motivational basis behind the use of bicycle for daily travel. Motivational factors included attitudes, habits, intentions and norms. Perugini and Bagozzi (2011) model of MGB was applied as theoretical framework in order to measure the influence of factors (norms, attitudes, past behavior and etc.) on desire. According to results of the study, emotions, subjective norms and attitudes all have a significant effect on forecasting people's desire to use a bicycle in a big city. Study also demonstrated that positive anticipated emotions and past behavior predict desire directly while subjective norms and attitudes are found to predict desire indirectly. (Passafaro, et al., 2014)

Determinants of the Goal-Directed Behavior Model

As it is mentioned before, MGB added new variables into TPB model to explain the behavior and decision making process of people in a better way. All effective variables included in MGB can be seen in Figure 4. All these variables are proposed to have significant effect on people to perform behavior, so it is important to examine each variable separately.

Desire can be defined as person's motivation to do something. Desire is the most fundamental construct of MGB. It can also be described as motivational state of mind regarding reasons to behave. Desire integrates attitude, subjective norms and perceived behavioral control and create prediction value for intention. (Perugini & Conner, 2000)

According to the definition of Fishbein and Azjen (1975), ***intention*** is defined as a bridge between a person and behavior. They described intention as a subjective probability whether person will perform a behavior or not (Fishbein & Ajzen, 1975). Desire is a powerful predictor of intention. However, there are additional factors

which might have an impact on intention regardless of desire. *Appropriateness of the behavior* and *logical reasons to behave* might have an influence on intention. Certain behaviors may be intended if a person believes the appropriateness of behavior. Self-efficacy belief of a person might also have an influence on intention to conduct some behaviors. In other words, some behavior can only be performed when person believes that he/she is capable of doing it. (Leone, Perugini, & Ercolani, 2004). For instance, a girl might intend to play FIFA without knowledge of football game rules. The important thing is to believe in her to enact the behavior.

Attitude is a predictor included in both TPB and MGB. Eagly and Chaiken defined attitude by using three main features; evaluation, attitude object and tendency. Attitude is a tendency of an individual for evaluation of a specific situation with having some level of favor / disfavor (Eagly & Chaiken, 2007).

According to TPB, attitude, perceived behavioral control and subjective norm have independent influence on intention. In other words, prediction ability of each variable may differentiate considering various situations and behaviors. Ajzen (1991) suggested that the higher the perceived behavioral control and the more convenient the attitude and subjective norms, the more powerful the intention should be to perform the behavior. (Ajzen, 1991).

Perceived behavioral control is a perception of an individual about available resources and opportunities needed to perform the behavior. In other words, resource and opportunities should be adequate for an individual to behave. For instance, a student has a huge desire to play new online game by XBOX, but he does not have enough money to purchase this game. In this situation, it is impossible for him to play this new online game since his condition and resources are not sufficient. Perceived behavioral control has a direct effect on behavior and it plays a significant role in both MGB and TPB. (Ajzen, 1991). Perceived behavioral control involves two components. First one represents the availability of resources and opportunities required to pursue the behavior. Resources may include money, time and availability.

The second component demonstrates the self-reliance of a person in order to achieve the behavior (Chiou, 1998).

Subjective Norm can be simply described as social impact of other people on an individual for performance of a certain behavior. Subjective norms are basically related to perceptions of people around an individual. These people include friends, family members, colleagues, relatives and so on.

Choiu (1998) conducted a research in order to examine the effect of attitude, perceived behavioral control and subjective norm on consumer's intention to purchase. In this case, level of product knowledge and attention to social comparison information (ATSCI) differentiated among participants in order to be able to observe the difference between levels. According to results, if individual is self-confident in decision of purchasing a product, perceived behavioral control will not have an important effect on person's intention to buy. On the contrary, when she/he is unconfident, perceived behavioral control will be a significant factor on predicting the intention. According to the results, there is a positive correlation between person's ATSCI level and subjective norms which should be taken into consideration. To be more precise, if person's ATSCI level is high, then impact of subjective norms on intention will be more powerful. The obtained results from the study are compatible with the literature since people with high level of ATSCI will have a tendency to attach more importance to other people's opinion before purchasing. (Chiou, 1998).

It was proposed in the goal directed behavior model that **anticipated emotions** have a significant impact on desire together with attitude and subjective norms to pursue an act. Anticipated emotions are powerful determinant of intention and they are introduced as new variables in the MGB theory. Anticipated emotions can be divided into two as positive and negative (Perugini & Conner, 2000). The main function of adding these variables to the model as predictors of desire is that goal achievement/ failure is contributed to person's negative/positive emotions. Desire should be related

to positive emotions considering goal achievement, while negative emotions are contributed to goal failure (Perugini & Bagozzi, 2001).

In the MGB, another added new construct is **past behavior** which is revealed to have a direct influence on behavior. Past behavior also affect desire and intention in some circumstances. Past behavior can be examined as two parts namely, frequency and recency of past behavior. Frequency demonstrates performing the behavior within a long period of time (more than 6 months) while recency contains short period of time such as 3-4 weeks (Leone, Perugini, & Ercolani, 2004). Perugini and Bagozzi added past behavior into the MGB model as recency and frequency. In the model, frequency of past behavior is proposed to predict behavior, desire and intention while recency of past behavior only affects behavior (Perugini & Bagozzi, 2001).

2.3 Online Games

Computer games started to become a part of our lives after development of consoles such as Sony *Playstation*, Sega *DreamCast* and Nintendo *Super Nintendo* starting from the early 1990's. Game characters such as *Super Mario Brothers*, *Lara Croft* become so popular that their movies were made as a result of their huge success. With the advances in the technology and development of internet, new generation of games emerged and began to take the place of console games. These new "online games" are capable of connecting people and allowing communication between players by using internet (Griffiths, Davies , & Chappell, 2003). Traditional games started to become obsolescence and give its place to online and computer games as a result of technological improvements. Games become diversified in accordance with the changing needs of the current era and new communication environments. Computer games are mainly single-player games, so people started not to satisfy with playing those games. This increases the popularity of online games. Now, online games are more preferred due to bringing more people (from different culture, country and ages) together in the same environment (Ögel, 2011).

Internet usage is an important factor which increases online game playing. TURKSTAT conducted Information and Communication Technology Usage Survey on Households regarding the aim of internet usage for the first quarter of 2014. According to the results, 78.8% of people use internet for social network websites, 74.2 % reading online news, newspaper or magazine, 67.2 % searching for information about products and services and **57.8% playing online games,** downloading music, video, movies and 53.9% sending/ receiving e-mails. As it can be seen in the results, percentage of people who play online games is high (TURKSTAT News Release, 2014).

As internet usage is widespread all around the world, online games become a remarkable issue among game industry. Game industry including both online and offline, continues to expand with millions of players in around the world including Turkey. With the help of the technology, companies start to develop mobile applications for smart phone users. Therefore, now people are able to play games in both their computers and phones. As the number of online game players is growing incrementally, the market value of online games is increasing rapidly as well. According to Hsu and Lu (2004) study in 2004, increase in internet usage had a considerable impact on online games and online games have become so popular currently. In Taiwan, 40% of the Internet users play online games. There are several reasons behind this popularity. One of them is that online games are entertainment-oriented and internet-based technology. Moreover, they enable users to fantasize and be entertained at the same time (Hsu & Lu, 2004).

Social media is an effective tool to increase the popularity of online games due to extensive usage of Facebook, Twitter, Instagram, Pinterest, LinkedIn and Skype among individuals. There is no doubt that Facebook is the most popular social network with a 26% penetration rate in overall 52% of social media users in Turkey (Penetration of leading social networks in Turkey , 2014). The reason behind this popularity is that Facebook does not only enable people connect with their friends but also follow up events and spend pleasant time by playing online games. Currently, people have a chance to play games with their friends on Facebook since

it offers various types of online games. Hence, more people enjoy playing online games and this increase the number of online game players in all around the world.

As number of online game players increases incrementally, excessive number of new features are proposed by game producers in order to reach their target consumers. Choi and Kim (2004) realized that few studies investigated the reasons why people continue to play certain online games. Therefore, they conducted a comprehensive study to find out which design features are more contributed to the amount of time spent by players at particular online gaming sites. They worked on theoretical model which includes concepts of customer loyalty, personal communication and social interaction to explain why people continue to play online games. According to the results of this research, people continue to play online games when they have positive impression and good experiences with the online game. Research revealed that this positive experience is mainly contributed to effective personal interaction with the system. Moreover, it is also related to the pleasant social interactions with other people connected to the Internet. (Choi & Kim, 2004).

There are two types of business model in online game market: subscription based model and free-to-play models. When gamers pay money to the company to play, then it is subscription based models. If gamers do not pay anything to play an online game, it is free-to-play models. Many social network games such as Candy Crush, FarmVille, FarmHeroes, RescuePets, Texas HoldEm Poker are counted in the free-to-play models which can be played free via Facebook. On the other hand, FIFA, PES, Battlefield, GTA, DOTA can be regarded as subscription-based models since gamers need to pay fee to play those games. Free-to-play gamers are still subject to buy online game items such as swords, clothing, guns and powers even if they don't have to pay for the game. Park and Lee (2011) conducted a study to investigate the reasons why gamers buy online game items while playing games free of charge. According to results, gamers attach importance to four types of consumption values when purchasing online game items: character competency value which strengthens the characters' abilities, enjoyment value to increase the pleasure from online game, visual authority value to glamorize the game characters and monetary value to gain

social status in the game. In addition, game producers should increase the variety of items so that gamers have more choice. Lastly, results revealed that no matter how satisfied the gamers are, they may not necessarily buy online game items (Park & Lee, 2011).

Cheng & Kao studied online games in Taiwan and carried out inclusive research. This research aims to investigate diffusion of online games in Taiwan. Rogers's Diffusion of Innovation Theory was applied and major differences between adopter categories were investigated. Statistical analysis including cluster analysis techniques were used to divide game players into categories regarding diffusion stages. Study demonstrated that Rogers' Theory can be applicable to predict online game players' personality and attitudes. Researchers can make deductions about the profile of online gamers by interpreting the findings. According to results of research, online game players in early adopters category are tend to be more innovative, young, sympathetic, friendly, curious, education-driven (Cheng & Kao, 2004).

Although online games become popular day by day, there have been few studies study focused on demographic factors and personality of the online game players. Therefore, survey was carried out in order to find out the demographic factors of online game players considering the popular online game "*Everquest"*. Everquest is one of the popular massively multiplayer online role-playing games (MMORPG). According to results, %81 of the participants are male, %67 of the participants are under the age 31, %55,5 of the participants are single and %29 of the players are currently university students. There is a remarkable difference between percentage of female and male players which was also observed in many other research. This might be due to the fact that many online games are developed by males for male players (Griffiths, Davies, & Chappell, 2004).

Types of Online Games

Ghuman and Griffiths (2012) proposed that there are three kinds of multiplayer online games enabling thousands of players to access the game simultaneously. These are first person shooter games, real time strategy games and role playing

online games (Ghuman & Griffiths, 2012). Each type of online game will be mentioned separately in the following paragraph.

Massively multiplayer online role playing games (MMORPGs) is a type of online game which has graphically rich environment and provides social communication among players. MMORPGs are the latest online game which enables players to taste unique experience for players with sophisticated, evolving, virtual gaming world. Recently, MMORPGs demonstrate remarkable increase in terms of profitability among online games due to the fact that it enables numerous gamers access game environment at the same time. MMORPGs are persistent game environment which allows large number of gamers to play concurrently by using specific game website. There are three main reasons behind popularity of MMORPGs: perpetual gaming universe, strong interaction between players and endless game since there is no final level. (Badrinarayanan, Sierra, & Martin, 2015). Massively Multiplayer Online First-Person Shooter (MMOFPS) games depend on person's skills and expect player to demonstrate their quick reactions and high attention. Massively Multiplayer Online Real-time Strategy (MMORTS) games, on the other hand, require management and coordination of teams while improving special skills in order to achieve higher status in the game (Nagygyörgy, et al., 2013).

Study has been carried out in order to examine the socio-demographic factors and gaming preferences of players regarding mentioned three types of massively multiplayer online game players. According to results, major proportion (%79) of MMOG players has specific gaming preferences which may be contributed to the different socio-demographic characteristics of each player. MMOFPs players are more likely to be male, young, and less-educated and they have low socio-economic status. MMORPG players are more inclined to have problematic gaming attitudes due to spending more time on playing games compared to others. MMORTs players have resemblance to MMORPGs players in so many ways except the gender proportion of players (Nagygyörgy, et al., 2013).

CHAPTER 3

RESEARCH MODEL AND METHODOLOGY

The main aim of this research is to investigate the factors affecting adoption of online games based on goal-directed behavior model. This study is a combination of goal-directed behavior and diffusion of innovation theory which aims to reveal the significant factors behind diffusion of online games (Figure 5). Research model of this study is presented below in the Figure 6.

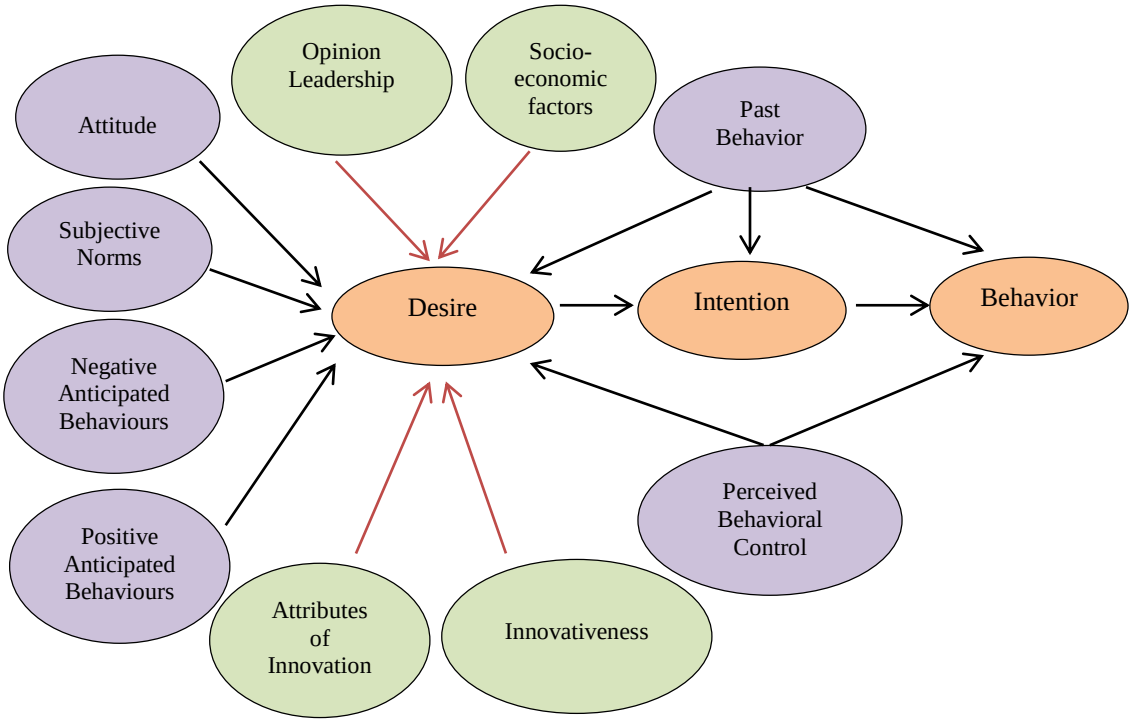

Figure 5 Goal Directed Behavior Model & Diffusion of Innovation Theory

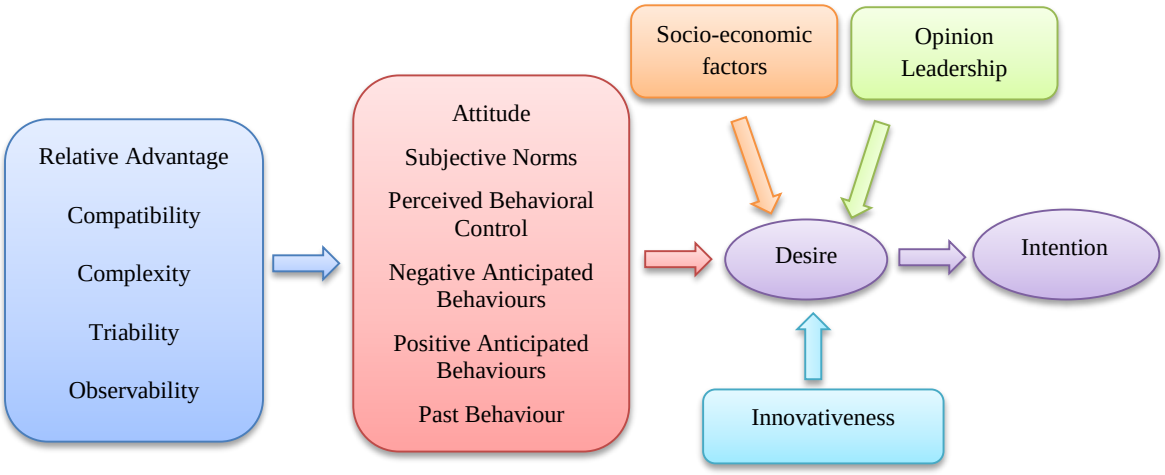

Figure 6 Research Model

First of all, relationship between attributes of innovation and constructs of goal-directed model will be examined by conducting advanced statistical analysis. Secondly, effects of all variables on desire and intention will be investigated deeply with further analyses. Finally, difference between each adopter category will be analyzed and interpreted.

Independent variables are categorized as 4 groups, namely, socio-economic factors, personal characteristics, attributes of innovation and goal-directed behavior model determinants. Influence of each factor on adoption of online games will be analyzed separately by applying appropriate statistical analysis techniques. Important factors to be included in this research are demonstrated below:

Table 1 Independent Variables

Independent Variables	
Socio-economic Factors	
x_1	Gender
x_2	Age
x_3	Education
x_4	Household Income
Personal Characteristics	
x_5	Innovativeness
x_6	Opinion leadership
Attributes of Innovation	
x_7	Relative advantage
x_8	Compatibility
x_9	Complexity
x_{10}	Triability
x_{11}	Observability
Goal-directed behavior determinants	
x_{12}	Attitude
x_{13}	Perceived Behavioral Control
x_{14}	Negative anticipated emotions
x_{15}	Positive anticipated emotions
x_{16}	Subjective Norms
x_{17}	Past Behavior
x_{18}	Desire

Hypotheses are constructed after comprehensive literature review and determination of research question. Identified hypotheses represent the information to be obtained as a result of this study. All hypotheses are tested within the scope of the study and results are interpreted accordingly.

Table 2 Hypotheses of the study

No	Hypotheses	Determinants
H_{1a}	Gender has a significant relationship with adoption of online games.	Gender
H_{1b}	Age has a significant relationship with adoption of online games.	Age
H_{1c}	Education level has a significant relationship with adoption of online games.	Education level
H_{1d}	Household income has a significant relationship with adoption of online games.	Household income
H_2	Innovativeness has a significant relationship with adoption of online games.	Innovativeness
H_3	Opinion leadership has a significant relationship with adoption of online games.	Opinion Leadership
H_{4a}	Relative advantage of an online game has a significant relationship with adoption of online games.	Relative Advantage
H_{4b}	Compatibility of an online game has a significant relationship with adoption of online games.	Compatibility
H_{4c}	Complexity of an online game has a significant relationship with adoption of online games.	Complexity
H_{4d}	Triability of an online game has a negative relationship with adoption of online games.	Triability
H_{4e}	Observability of an online game has a significant relationship with adoption of online games.	Observability
H_{5a}	Attitude has a significant relationship with adoption of online games.	Attitude
H_{5b}	Positive anticipated emotions have a significant relationship with adoption of online games.	Positive anticipated emotions
H_{5c}	Negative anticipated emotions have a negative relationship with adoption of online games.	Negative anticipated emotions
H_{5d}	Subjective norms have a significant relationship with adoption of online games.	Subjective norms
H_{5e}	Perceived behavioral control has a significant relationship with adoption of online games.	Perceived behavioral control
H_{5f}	Past behavior has a significant relationship with adoption of online games.	Past behavior

3.1 Data Collection and Survey

In this study, quantitative survey is conducted in order to collect data so that hypotheses can be tested and accurate results can be obtained. There are four main survey methods which can be applied in such studies, namely, telephone, personal,

mail and electronic. Specific criteria are applied to evaluate methods and determine the appropriate one. Electronic (online) survey is carried out due to several advantages. First of all, response rate and speed is very high comparing other methods. Large number of people can be reached via internet and social media easily. Online survey provides flexibility of data collection. Moreover, online survey is a useful way of collecting data by preventing participants from giving socially acceptable answers. Since participants do not have a chance to see the researcher, they will be more objective answering questions (Malhotra, 2010). As a result, online survey is found appropriate for data collection.

Questionnaire is transferred to the online platform by using an online survey website. Then, online survey is initiated by sharing the survey link via social media websites Facebook and Twitter. Furthermore, link is shared in online game forums so as to reach the target participants.

3.2 Questions and Measure Development

Questionnaire is prepared by using reliable and valid scales in order to test the hypotheses accurately. Questionnaire is mainly composed of five-point Likert scales. Likert scale is preferred since it enables participants to indicate their disagreement or agreement to the statements in each question.

First part of the questionnaire aims to collect data about the demographic and socio-economic characteristics of the respondents. As it is mentioned in the Chapter 2 Literature Review, socio-economic characteristics are claimed to have an impact on innovation acceptance. Many researchers are highly interested in investigating this relationship, including Rogers. According to Rogers, there are logical reasons behind why socio-economic status and innovation adoption vary together. For instance, when new innovation is introduced on the market, generally it is too expensive to adopt. Hence, some part of the society may not afford to purchase these products, so automatically they become late adopters. Early adopters, on the other hand, are believed to be highly educated and wealthy compared to late adopters. Although, there is a strong relationship between socio-economic status and innovativeness,

innovative behavior cannot be fully explained by these factors. Some people may not adopt certain types of innovations even if they are wealthy enough to adopt it (Rogers, 1983). As a result, socio-economic status questions are added to this survey is the significant relationship between socio-economic status and innovativeness. Last question of the first part is to determine which adopter category respondent belongs.

It has been claimed by many researchers that new products diffuse more rapidly than before due to the significant players on the market. These players can be identified as "opinion leaders" who have a considerable influence on diffusion process. Rogers also agreed that opinion leaders play significant role in triggering diffusion networks and fasten the adoption (Rogers, 1983). Opinion leaders are more likely to be early adopters due to being curious and more involved with the product category compared to followers (Goldsmith & Witt, 2003). Moreover, several numbers of researchers accepted that factors such as innovation attributes and opinion leadership variables are the best estimators of diffusion. Therefore, opinion leadership scale of King and Summers and Moore and Benbasat's attributes of innovation scale are added to the questionnaire.

Second part of the questionnaire mainly composed of validated scales. Opinion leader scale of King and Summers (1970) is used in order to measure respondent's opinion leadership behaviors regarding online games. Respondent's innovativeness scale of Cheng& Kao (2004) is applied to measure the tendency of participant's adoption of online games. Scale of Perugini and Bagozzi (2001) which includes the main determinants of the goal-directed behavior model is added. This scale is included in order to reveal the significant factors influencing respondent's adopting behavior. Lastly, Moore & Benbasat (1991) measurement is used so as to see the effect of attributes of innovation on purchasing / playing online games.

CHAPTER 4

FINDING AND RESULTS

4.1 Descriptive Statistics

Total number of 308 online game players fills the questionnaire and completes the online survey. Respondents are reached by using social media websites and they fill out the questionnaire by entering the created link. Profile of the respondents is composed of Turkish citizens whose ages are from 13 to 57. First of all, demographic factors are taken into consideration for online game players. Demographic statistics provide brief profile of online gamers participated in the study. As it can be seen in the below figure, 89.6 % of online users are male while, 10.4 % of them are female. Results are compatible with the literature since males are more likely to play online games compared to females. Another research has been conducted with Everquest game players in order to reveal the demographic factors of online game players. According to results, 81% of participants are male while only 19% of them are female (Griffiths, Davies, & Chappell, 2004). Therefore, it can be concluded that men have more tendency to play online games compared to women.

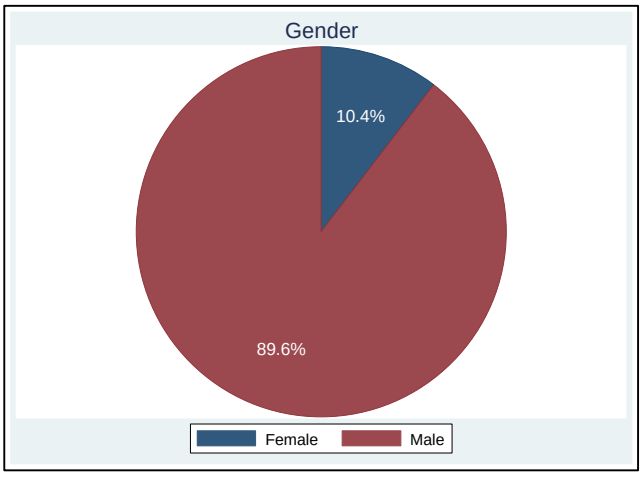

Figure 7 Gender Distribution of the Sample

Age is another important demographic factor to be considered for online game adoption. Average age of the respondents is 23 and majority (87%) of online gamers is gathered between age interval 15 and 30. Results of the study which was carried out in Taiwan about online game players also support these findings. According to the research, again majority (52%) of respondents is young (15-30). However, it is not as high proportion as in this case. Moreover, there is a considerable amount of people above 31 as online game players (Cheng & Kao, 2004). Therefore, it can be concluded that age distribution can be differentiated between countries, but in general online game players have younger profile and 15-30 age interval contains the considerable part of the online game players.

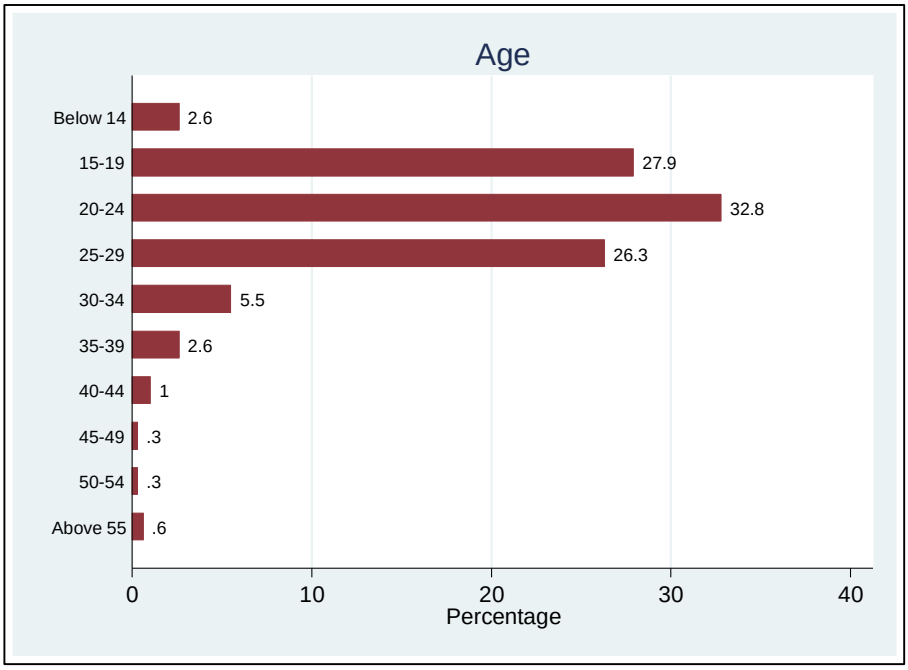

Figure 8 Age Distribution of the Sample

Education level, household income and occupation questions are also included in the survey in order to draw a socio-economic profile of online game players. Results are presented below:

Table 3 Education, Occupation and Household Income of the Sample

Education	Frequency	Percent (%)
Primary School	0	0
Secondary School	9	2.9
High School	71	23.1
University	191	62.0
Master	31	10.1
PhD	6	1.9

Occupation	Frequency	Percent (%)	Household Income (TL)	Frequency	Percent (%)
Not working	36	11.7	**Below 1500**	30	9.7
Working	106	34.4	**1501-3000**	94	30.5
Retired	4	1.3	**3001-4500**	85	27.6
Student	161	52.3	**4501-6000**	43	14.0
Others	1	.3	**Above 6000**	56	18.2

Participants are asked to indicate the online games that they usually play. This is a multiple answer question that participants are able to select more than one answer. According to the table below, MMOFPS (69.2%) and MMORP (%51.6) games are the favorite games that majority of respondents enjoy to play. Call of Duty, Halo, Battlefield, Counter Strike, Quake, Far Cry are the examples of first person shooters game that many players prefer to play while World of Warcraft, Elder Scrolls Online, Knight Online, Guild Wars, Final Fantasy are the examples of favorite role playing games. Strategy (Age of Empire, Total War and etc.) and sport games (FIFA, PES, NBA, NFL and etc.) followed these games with the percentage of 38% and 29.2%.

Table 4 Online Game Preference of Participants

Online Games	Percentage (%)
Massive multiplayer online role playing game	51,6
Massive multiplayer online first person shooters game	**69,2**
Strategy games	38,0
Sport games	29,2
Racing games	19,5
Card games	15,6
Puzzle games	11,0
Others	17,2

4.2 Measure Purification

Measure purification includes reliability analysis and factor analysis. Before conducting advance statistical analysis with the dataset, measure purification should be applied in order to obtain accurate results. Therefore, explanatory factor analysis and reliability analysis are used for all scales in the questionnaire in order to measure the validity and reliability. SPSS is used as software in order to perform all statistical analysis.

Reliability of the measurements is assessed by using Cronbach's alpha which provides information about the consistency of the scale (Hair, Black, Babin, & Anderson, 2010). According to Churchill, first thing researchers calculate should be Cronbach's Alpha in order to evaluate the quality of the measurements. Cronbach's alpha should be higher than 0.70 to conclude high internal consistency. If alpha is larger than 0.70 then it means each item correlates well with other items within the measurement. On the other hand, if value is low, then some items which cause low correlation should be eliminated. Reliability analysis should be applied as a first technique since it plays significant role in multivariate analysis (Churchill, 1979).

Factor analysis is used to decide the number of dimensions in the dataset. Factor analysis draws the structure of correlations (interrelationships) between variables, then defining highly correlated items as "factor". There are two types of factor analysis, namely, confirmatory and explanatory. In this study, explanatory factor analysis (EFA) is used to decide underlying structure of variables in the data set.

Kaiser-Meyer-Olkin (KMO) measure should be calculated in order to evaluate the appropriateness of the data. Acceptable limit for KMO is 0.6 to determine that data is appropriate for factor analysis. After checking the value of KMO measure, Bartlett's test of sphericity should be applied. Bartlett test is used to decide whether items in the scale are correlated or not. Test should imply that there is a correlation between items so that factor analysis can be conducted. Bartlett test value should be smaller than alpha level (Hair, Black, Babin, & Anderson, 2010).

Before determination of number of factors for each scale, total variance explained also needs to be taken into consideration. This value is calculated in factor analysis and it demonstrates the total variance contributed to each factor. This value is expected to include 2/3 of the total items included in the scale (Tabachnick & Fideli, 2001). The higher the variance explained, the better the factor is. Since one factor structure is desired in this study, high number is expected for total variance explained in order to determine the appropriateness of the factor.

Questionnaire of the survey consists of many scales, so reliability test and factor analysis are both conducted. These scales include questions related to opinion leadership, innovativeness, attributes of innovation (relative advantage, complexity, compatibility, triability, observability) and determinants of goal-directed model (attitude, subjective norms, perceived behavioral control, anticipated behaviors, past behavior, desire and intention).

Factor analysis is applied for each scale by using Varimax Rotation and Principal Component Analysis method. First of all, reliability of each scale is calculated and then factor analysis is performed. Cronbach's alpha for each scale and factor analysis results are demonstrated in the below tables. Cronbach's alpha, KMO and Bartlett's test values are checked and evaluated. Factor loadings of each factor are obtained in order to decide the validity of factors. According to the results of these multivariate analyses, Cronbach's alpha of triability, observability and complexity scales are lower than 0.70 (acceptable limit for reliability). Therefore, additional tests are applied in order to improve the scales' reliability and obtain acceptable factors. Results and values of other scales are good enough to conclude that scales are loaded as expected (Table 5).

Table 5 EFA Results and Reliability Analysis of Innovativeness and Opinion Leadership

Item	Factor Loadings	Cronbach's Alpha	KMO Measure	Bartlett's Test of Sphericity	Total Variance Explained(%)
Innovativeness		0,893	0,859	,000	62,221
I see myself as competent and knowledgeable about online games	,808				
I am ahead of people regarding knowledge of online games compared to people around me	,820				
I am a good online game player	,770				
I am usually the first one to learn about the newest online games on the market	,792				
I am one of the leaders of obtaining newest information about online games	,839				
I am usually the first one to learn newest trends related to online games	,848				
I usually play more types of online games compared to my friends	,623				

Table 5 (Continued)

Item	Factor Loadings	Cronbach's Alpha	KMO Measure	Bartlett's Test of Sphericity	Total Variance Explained(%)
Opinion Leadership		0,870	0,835	,000	56,738
In general, I always talk to my friends and neighbors about new games	,705				
When I talk to my friends and neighbors about online games, I give great deal information	,814				
Compared to my friends, I usually talk to larger number of people about online games	,777				
Compared with my friends, I am very likely to be asked	,848				
In a discussion of online games, I am most likely to listen my friends' idea	,508				
In a discussion of online games, I mostly tell my friends about games	,778				
Overall in all of my discussions with friends and neighbors, I am often used as a source of advice	,791				

Table 6 EFA Results and Reliability Analysis of Relative Advantage

Item	Factor Loadings	Cronbach's Alpha	KMO Measure	Bartlett's Test of Sphericity	Total Variance Explained(%)
Relative Advantage		0,748	0,671	,000	58,052
Overall, I find playing online game enjoyable.	,729				
Playing online game enhances quality of my life.	,807				
Playing online game makes me relaxed.	,753				
The advantages of playing online game far outweigh the disadvantages.	,757				

Table 7 EFA Results and Reliability Analysis of MGB variables

Item	Factor Loadings	Cronbach's Alpha	KMO Measure	Bartlett's Test of Sphericity	Total Variance Explained(%)
Intention		0,895	0,5	,000	90,482
I plan to purchase this specific online game when it is launched	,951				
I intend to purchase and play this specific online game	,951				
Perceived behavioral control		0,893	0,50	,000	90,369
I am capable of purchasing/playing this specific online game during the next four weeks	,951				
If I wanted to, it would be easy for me to purchase/ play this specific new online game during the next four weeks	,951				
Positive anticipated emotions		0,927	0,745	,000	87,336
If I ever purchase / play this specific online game, I would feel excited	,931				
If I ever purchase/play this specific online game, I would feel happy	,953				
If I ever purchase/play this specific online game, I would feel satisfied	,919				
Negative anticipated emotions		0,911	0,742	,000	85,001
If I ever purchase/play this specific online game, I would feel angry	,922				
If I ever purchase/play this specific online game, I would feel frustrated	,941				
If I ever purchase/play this specific online game, I would feel guilty	,902				

Table 7 (Continued)

Item	Factor Loadings	Cronbach's Alpha	KMO Measure	Bartlett's Test of Sphericity	Total Variance Explained(%)
Past Behavior		0,870	0,50	,000	88,472
I purchased / played new online games a lot of times during last six month	0,941				
I purchased / played new online games rather frequently during last month	0,941				
Attitudes		0,743	0,623	,000	58,939
I think playing online games is useful for my language skills	,731				
I think playing online games is effective for my social skills	,629				
I think playing online games is exciting	,855				
I think playing online games is enjoyable	,834				

Results of the compatibility scale can be interpreted as sufficient considering the value of Cronbach's alpha and factor structure. However, there is an item which has a lower factor loadings compared to others. Hence, additional analyses are conducted to improve the scale's internal consistency. When the item is removed from the scale, better results are obtained which can be seen in the below table (Table 8). After omitting the item from the scale, Cronbach's alpha is increased to 0.901 while total variance explained by the factor is increased to 78,082. It is concluded that new scale will be more useful for further advanced statistical analyses of the study.

Table 8 EFA Results and Reliability Analysis of Compatibility

Item	Factor Loadings	Cronbach's Alpha	KMO Measure	Bartlett's Test of Sphericity	Total Variance Explained(%)
Compatibility		0,878	0,834	,000	69,155
Playing this specific online game is compatible with all aspects of my life	,857				
Playing this specific online game is completely compatible with my current situation	,764				
I think that playing this specific online game fits well with the way I live my life	,922				
Playing this specific online game fits into my lifestyle	,935				
Items deleted					
I feel that playing this specific online game meet my social needs	,644				
Improved Compatibility Scale after deleting an item		0,901	0,805	,000	78,082
Playing this specific online game is compatible with all aspects of my life	,868				
Playing this specific online game is completely compatible with my current situation	,788				
I think that playing this specific online game fits well with the way I live my life	,934				
Playing this specific online game fits into my lifestyle	,936				

Cronbach's alpha for Complexity scale is calculated as 0.525<0.70 which is not high enough to assume that scale is reliable. According to EFA results, two-factor structure is obtained which is not acceptable as well. Therefore, it is decided that questions causing low reliability should be detected and removed from the scale in order to obtain better results.

Three items are deleted from the scale according to the factor loadings. Below tables demonstrate the improvement in results before and after deleting the items. Cronbach's alpha is increased to 0.717 and number of factors is decreased to one as desired.

Table 9 EFA Results and Reliability Analysis of Complexity

Item	**Factor Loadings**		**Cronbach's Alpha**	**KMO**	**Barlett's Test of Sphericity**	**Total Variance Explained**
	1	**2**				
Complexity			0,525	0,654	,000	62,413
I have a difficult time understanding how to play new online games	,712	,359				
It is hard for me to remember how to apply instructions when playing online game	,792	-182				
Learning to play an online game is hard for me	,866	-041				
Items deleted						
Playing online games requires a lot of mental effort	**-394**	,673				
I believe that this specific online game is hard to play	**,047**	,770				
Playing online game is often frustrating due to complexity	**,230**	,664				
Improved Complexity scale after items deleted			**0,717**	0,618	,000	
I have a difficult time understanding how new to play online games	,732					
It is hard for me to remember how to apply instructions when playing online game	,800					
Learning to play an online game is hard for me	,879					

As it can be seen in the below table, Cronbach's alpha for triability scale is obtained as 0.569<0.70 which is below acceptable limit for a reliable scale. Factor analysis is also conducted in order to see factor structure of the scale. Although one factor is produced according to EFA results, factor loading of last item seems low compared to others. Therefore, last item is deleted from the scale and same analyses are conducted again. Better results are obtained since Cronbach's alpha is increased to 0.634 and factor loadings of remained two items are improved.

Table 10 EFA Results and Reliability Analysis of Triability

Item	**Factor Loadings**	**Cronbach's Alpha**	**KMO**	**Barlett's Test of Sphericity**
Triability		0,569	0,549	,000
I've had a great deal of opportunity to try this specific online game	,766			
I know where 1 can go in order to try this specific online game	,840			
Trying this specific online game before purchasing is very important	**,568**			
Improved Triability scale after items deleted		**0,634**	0,5	,00
I've had a great deal of opportunity to try this specific online game	0,856			
I know where 1 can go in order to try this specific online game	0,856			

Reliability and factor analyses are conducted for observability scale, but results are not satisfactory due to low value of Cronbach's Alpha and two-factor structure. Cronbach's alpha is too low to conclude that it is not a reliable scale to use in this study. Although, additional analyses are applied to increase the reliability of the scale, Cronbach's alpha couldn't increase above 0.311 which is still below the acceptable limit (Table 11). As a result, it is concluded that observability is not an applicable scale for this study. Therefore, it is better to remove observability scale to get more precise results.

Table 11 EFA Results and Reliability Analysis of Observability

Item	Factor Loadings		Cronbach 's Alpha	KMO	Barlett's Test of Sphericity	Total Variance Explained (%)
Observability			**0,081**	0,429	,000	77,210
I feel that I can really see how good this specific online game is in a store	,846	,020				
The benefits of this specific online game can be easily observed in a store.	,478	,759				
I know where I can go to see a demonstration of this specific online game	-,530	,718				
Observability after deleting an item			**0,311**	0,5	,000	
I feel that I can really see how good this specific online game is in a store	,770					
The benefits of this specific online game can be easily observed in a store.	,770					

4.3 Linear regression

Linear regression is applied in order to see the effect of each attributes of innovation on determinants of goal-directed behavior model. Before conducting linear regression, assumptions should be tested in order to obtain trustworthy results. Assumptions of regression include linear relationship between independent and dependent variables, independence of errors, normally distributed errors and homoscedasticity. Required statistical tests have been applied in order to check the assumptions. After conducting reliability and factor analysis, it is determined that observability scale is not included for further analyses due to inadequate value of Cronbach's alpha. Therefore, remaining four attributes are dependent variables for each regression while determinants of goal-directed behavior model are independent variables. Total number of six regressions is conducted to see the effect of attributes on each construct separately. Results are presented below in Table 12 and Table 13.

Table 12 Regression Results for Attitude, Subjective Norms and Perceived Behavioral Control

	Y= Attitude			Y=Subjective Norms			Y= Perceived Behavioral Control		
	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient
Dependent Variables									
Relative Advantage	,531	,055	,549*	,304	,112	,188*	-,022	,113	-,013
Complexity	-,085	,043	-,091*	,171	,087	,110*	-,006	,088	-,004
Triability	,074	,034	,102*	,198	,070	,163*	,297	,071	,237*
Compatibility	,051	,044	,069	,207	,089	,167*	,339	,091	,267*
Adjusted R^2		0,429			0,139			0,161	
R^2		0,437			0,150			0,172	
F for ANOVA		58,760			13,371			15,751	

Notes: P value of each dependent variable is checked according to significance level 0.05 and 0.10. * ρ<0.05, ** ρ<0.10

Table 13 Regression Results for Positive AE, Negative AE and Past Behavior

	Y= Positive AE			Y=Negative AE			Y= Past Behavior		
	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient
Dependent Variables									
Relative Advantage	,528	,086	,383*	-,158	,087	-,132**	,169	,119	,096
Complexity	-,037	,067	-,028	,201	,068	,174*	,031	,093	,018
Triability	,061	,054	,059	,103	,055	,115**	,148	,075	,112*
Compatibility	,195	,069	,185*	,026	,070	,029	,422	,095	,313*
Adjusted R^2		0,293			0,042			0,175	
R^2		0,303			0,055			0,186	
F for ANOVA		32,873			4,397			17,317	

Notes: P value of each dependent variable is checked according to significance level 0.05 and 0.10. * ρ<0.05, ** ρ<0.10

As it can be seen in the above tables, relative advantage has a significant positive relationship with attitude (ß=0.549, ρ<0.05), subjective norms (ß=0.188 ρ<0.05) and positive AE (ß=0.383 ρ<0.05) and negative AE (ß=-0,132 ρ<0.10). According to results, relative advantage has a significant relationship with attitude and emotions of online game player. Relative advantage represents the perception of online game player about how better the online game compared to its rivals. Therefore, it is a significant factor on individual's decision process of playing new online games. Compatibility, on the other hand, is related to perceived behavioral control (ß=0.267 ρ<0.05), positive anticipated emotions (ß=0.185 ρ<0.05), subjective norms (ß=0.167 ρ<0.05) and past behavior (ß=0.313 ρ<0.05). Compatibility mainly represents the consistency between lifestyle of a person and playing online games. As the compatibility increases perceived behavioral control over purchasing online game also increases. Subjective norm is mainly related to thoughts of people around an individual about online game playing. If online game playing fits into player's lifestyle, friends and family also approves this behavior of individual. According to the results, triability seems the most effective factor on constructs of goal-directed behavior model since it has an influence on all constructs except positive anticipated emotion. Results demonstrate that triability of online games is important before purchasing online games. Lastly, complexity has a negative significant relationship with attitude (ß=-0.091 ρ<0.05) and positive relationship with negative anticipated behavior (ß=0.174 ρ<0.05). Questions in the complexity scale include negative expressions, so it explains the negative relationship between complexity and attitude. As the complexity of games increases, positive attitude towards playing that game decreases. In other words, as the online games become more complex, negative emotions about the online game playing increases.

4.4 Hierarchical regression

Hypotheses are tested by applying hierarchical regression analysis. Hierarchical regression is a good way to examine the effect of many variables sequentially. Influence of each variable can be evaluated considering the prediction value it adds to the other significant predictors (Petrocelli, 2003). In other words, hierarchical regression is useful to observe the incremental effect of each independent variable on dependent variable with the set of blocks (Cohen, Cohen, West, & Aiken, 2003). Hierarchical regression analysis is preferred for this study since it gives different point of view compared to other regression methods.

In this study, there will be two regression models in order to test the hypotheses properly. Firstly, the effects of demographic factors (gender, age, education and income), personal characteristics (innovativeness, opinion leadership), attributes of innovation (relative advantage, compatibility, triability, complexity) and determinants of goal-directed behavior (attitude, past behavior, subjective norms, anticipated behaviors, and perceived behavioral control) on desire are investigated in a sequential order. Then, including desire into the model as last block, effects of all these variables on intention is examined.

Results of the first model are presented in Table 14. Each group of independent variables is entered sequentially to see the incremental influence of each variable on dependent variable "desire". As it can be seen in the below table total percentage of variance explained by all variables is 64 percent ($\rho<0.05$). The effect of adding each variable can be observed from the results of hierarchical regression. At the 5% significance level, opinion leadership ($ß=0.178$ $\rho<0.05$) and positive anticipated emotion ($ß=0.667$, $\rho<0.05$) are positively related with the desire to adopt new online games. At the 10% significance level, triability ($ß=0.074$, $\rho<0.10$) and age ($ß=0.072$, $\rho<0.10$) have a positive relationship between desires to buy/play new online games. To sum up, opinion leaders are more likely to adopt online games compared to other people. Age seems an important factor on adopt online games due to younger profile of online game players. Younger people aged 15-30 have more tendency to

purchase/play online games. This study reveals that triability and emotions are the most important factors affecting adoption of online games. As it can be seen in the table, the most significant factor is positive anticipated emotions due to high value of coefficient in the regression. As a result, considering the significant relationships of age, opinion leadership, triability and positive AE with desire, there is not enough evidence to reject hypotheses H_{1b}, H_3, H_{4d} and H_{5b}.

Table 15 demonstrates the results of hierarchical regression for intention to adopt new online games. There are 5 main blocks of independent variables included in this model which are socio-economic factors, personal characteristics, attributes of innovation, goal directed behavior model constructs and desire to adopt new online games. Each group of variables entered one by one sequentially. Percentage of variance explained in the intention is 64.1% which can be interpreted as good. The effects of each variable are examined through comparison between the significance value and p-value. At the 5% significance level, age (ß=0.096), innovativeness (ß=0.156), positive anticipated emotion (ß=0.296), compatibility (ß= 0,181), triability (ß= 0.083) and desire (ß=0.327) are all positively related to intention of adopting online games. At the 10% significance level, there is a significant relationship between perceived behavioral control between intention (ß=0.089, $\rho<0.10$). Only negative anticipated emotion has a negative relationship with intention (ß=-0.073, $\rho<0.05$). As the desire is included in the model, it becomes the most important factor in the model due to high value of the coefficient. Results also support the goal-directed behavior model since desire is the most significant predictor of intention to behave. Innovativeness of people regarding online games is the second significant factor after desire. Innovativeness as personal characteristic is effective on adoption of online games which is also an expected result. As the desire is added to the model, influence of perceived behavioral control and past behavior is revealed. Perceived behavioral control represents gamer's power over performing a certain behavior. When people have full control over purchasing online games, adoption of new online games also increases. Recency and frequency of playing online games provides a clue about past behavior of an online player.

According to the results, people who play online games frequently in the past 6 months tend to adopt new online games. Like the previous regression on desire, emotions are again significant on prediction of intention to buy/play new online games. As a result, there is not enough evidence to reject hypotheses H_{1b}, H_2, H_{4b}, H_{4d}, H_{5b}, H_{5c} and H_{5e} according to the hierarchical regression results.

Table 14 Regression results for "Desire" as dependent variable

	Model 1			Model 2			Model 3			Model 4		
	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient
Independent variables												
Demographic factors												
Gender	-,094	,246	-,022	-,483	,219	-,113*	-,344	,214	-,081	-,147	,161	-,034
Age	-,012	,014	-,059	,012	,012	,057	,012	,012	,057	,015	,009	**,072****
Education	-,302	,121	-,165*	-,129	,107	-,070	-,084	,105	-,046	-,037	,079	-,020
Household income	-,017	,062	-,017	-,011	,055	-,011	-,010	,053	-,009	-,058	,040	-,056
Personal characteristics												
Innovativeness				,228	,105	,178*	,127	,107	,099	,067	,086	,052
Opinion Leadership				,517	,107	,383*	,310	,110	,229*	,241	,082	**,178***
Attributes of Innovation												
Relative Advantage							,290	,103	,186*	-,050	,088	-,032
Compatibility							,174	,080	,146*	,053	,063	,045
Complexity							,031	,080	,020	,031	,062	,020
Triability							,104	,063	,088	,087	,049	**,074****
Goal-directed behavior constructs												
Attitude										-,002	,080	-,002
Positive AE										,755	,050	**,667***
Negative AE										,008	,048	,006
Subjective Norms										-,017	,038	-,018
Perceived behavioral control										-,018	,038	-,019
Past behavior										,014	,039	,016
Adjusted R^2		0,029			0,261			0,315			,0621	
R^2		0,042			0,276			0,338			**0,641**	
ΔR^2		0,042			0,234			0,062			0,303	
F for ΔR^2		3,285			48,665			6,934			40,887	
F for ANOVA		3,285			19,100			15,137			32,417	

Notes: * $\rho<0.05$, ** $\rho<0.10$

Table 15 Regression results for "Intention" as dependent variable

	Model 1			Model 2			Model 3			Model 4			Model 5		
	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient
Independent variables															
Demographic factors															
Gender	,049	,232	,012	-,371	,203	-,092**	-,197	,187	-,049	-,055	,151	-,014	-,010	,143	-,003
Age	-,004	,013	-,021	,022	,011	,114**	,022	,010	,114	,023	,008	,119*	,018	,008	,096*
Education	-,314	,114	-,182*	-,141	,100	-,082	-,070	,091	-,040*	-,040	,074	-,023	-,029	,070	-,017
Household income	,013	,059	,014	,014	,051	,014	,022	,046	,023	-,035	,038	-,036	-,018	,036	-,018
Personal characteristics															
Innovativeness				,447	,097	,371*	,315	,093	,261*	,208	,081	,173*	,188	,076	,156*
Opinion				,289	,099	,228*	,012	,096	,010	-,041	,077	-,032	-,115	,074	-,090
Leadership															
Attributes of Innovation															
Relative Advantage							,190	,090	,130*	-,120	,082	-,082	-,104	,078	-,071
Compatibility							,363	,070	,323*	,220	,059	,196*	,203	,056	,181*
Complexity							,021	,070	,014	,019	,058	,013	,009	,055	,006
Triability							,161	,055	,145*	,118	,046	,107*	,092	,043	,083*
Goal-directed behavior constructs															
Attitude										,096	,075	,063	,096	,071	,064
Positive AE										,547	,047	,514*	,315	,059	,296*
Negative AE										-,087	,045	-,071**	-,089	,042	-,073*
Subjective Norms										,027	,036	,030	,033	,034	,036
Perceived behavioral control										,073	,036	,082*	,078	,034	,089*
Past behavior										,065	,037	,077**	,060	,035	,072**
Desire													,307	,052	,327*
Adjusted R^2		0,024			0,282			0,411			0,622			0,662	
R^2		0,037			0,296			0,430			**0,642**			**0,681**	
ΔR^2		0,037			0,259			0,134			0,212			0,038	
F for ΔR^2		2,922			55,3			17,466			28,750			34,881	
F for ANOVA		2,922			21,079			22,401			32,631			36,339	

Notes: * $\rho<0.05$, ** $\rho<0.1$

Table 16 is prepared to demonstrate the hypotheses of the study that are rejected or failed to reject regarding the results obtained from hierarchical regression on both desire and intention.

Table 16 Hypotheses reject/ fail to reject

No	Hypotheses	Desire		Intention	
		Reject	Fail to Reject	Reject	Fail to Reject
H_{1a}	Gender has a significant relationship with adoption of online games.	✓		✓	
H_{1b}	Age has a significant relationship with adoption of online games.		✓		✓
H_{1c}	Education level has a significant relationship with adoption of online games.	✓		✓	
H_{1d}	Household income has a significant relationship with adoption of online games.	✓		✓	
H_2	Innovativeness has a significant relationship with adoption of online games.	✓			✓
H_3	Opinion leadership has a significant relationship with adoption of online games.		✓	✓	
H_{4a}	Relative advantage of an online game has a significant relationship with adoption of online games.	✓		✓	
H_{4b}	Compatibility of an online game has a significant relationship with adoption of online games.	✓			✓
H_{4c}	Complexity of an online game has a significant relationship with adoption of online games.	✓		✓	
H_{4d}	Triability of an online game has a negative relationship with adoption of online games.		✓		✓
H_{5a}	Attitude has a significant relationship with adoption of online games.	✓		✓	
H_{5b}	Positive anticipated emotions have a significant relationship with adoption of online games.		✓		✓
H_{5c}	Negative anticipated emotions have a negative relationship with adoption of online games.	✓			✓
H_{5d}	Subjective norms have a significant relationship with adoption of online games.	✓		✓	
H_{5e}	Perceived behavioral control has a significant relationship with adoption of online games.	✓			✓
H_{5f}	Past behavior has a significant relationship with adoption of online games.	✓		✓	

4.5 Differences between Adopter Categories

One of the aims of this study is to investigate the factors affecting the adoption of online games in terms of adopter categories. In other words, major differences between adopter categories are also examined by applying hierarchical regression for each category. In this way, significant factors for each category can be observed separately.

There are five main adopter categories: Innovators, early adopters, early majority, late majority and laggards. Specific questions are added to the questionnaire in order to identify the categories of respondents. First of all, people who play free online games are detected. Moreover, there are some people who prefer to buy online games in advance. According to results, 30.5 % of the participants indicated that they prefer to play free online games, while 11.4% of them purchase in advance instead of waiting game to come onto the market. Remaining of the participants are online gamers who frequently purchase new online games. Second question measures how much time it takes for online game player to purchase or play a new online game. Average number of months to buy a new online game for participants is calculated as 5 months. When answers are analyzed, 13.6 % of the participants are more likely to be innovator/early adopters since they indicated that they generally purchase new online games within *one month*. Lastly, respondents are asked to select the most appropriate expression considering their innovativeness.

As it can be seen from the below table, adopter categories are identified according to the answers of respondents. Majority of the respondents (54.2%) early adopters and prefer to observe other people before purchase new online game. They would like to be sure that new online game is worth playing considering the comments and feedbacks of other people.

Table 17 Adopter Categories of Respondents

Innovativeness of Online Game Players	Percentage (%)	Adopter Category
I belong to the earliest group of people who purchase the new online game	8.1	Innovators
I am fast in purchasing, but I don't belong to the first group of purchasing	9.7	Early Adopters
I usually wait and observe the experience of a large group of peers before I purchase	**54.2**	Early Majority
I am generally too late among my peers to purchase	13.6	Late Majority
I wait a long time and purchase together with the latest group among my peers	14.3	Laggards

Table 17 composes a basis for the identification of the adopter categories. Each category is obtained separately by using "Select case" tool of the SPSS. Same steps are followed as in the previous part "hierarchical regression". Two hierarchical regressions are conducted for each category to see whether factors affecting diffusion of online games differentiates between categories or not. Moreover, effect of adding each block can be observed from the results table. Hierarchical regression enables making additional deductions compared to other analysis techniques. Interpretation of the results is presented below under the tables.

Table 18 Regression results of "Desire" as dependent variable / Innovators

	Model 1			Model 2			Model 3			Model 4		
	Regression Coefficient	**Standard error**	**Standard coefficient**	**Regression Coefficient**	**Standard error**	**Standard coefficient**	**Regression Coefficient**	**Standard error**	**Standard coefficient**	**Regression Coefficient**	**Standard error**	**Standard coefficient**
Independent variables												
Demographic factors												
Gender	-1,333	1,107	-,287	-1,286	1,084	-,276	,254	1,212	,055	-,056	,779	-,012
Age	,022	,040	,140	-,001	,038	-,004	-,020	,044	-,133	,012	,020	,081
Education	-,437	,546	-,225	-,126	,521	-,065	,378	,610	,194	-,223	,354	-,115
Household income	,095	,255	,088	,077	,240	,071	,157	,242	,145	,214	,113	,197**
Personal characteristics												
Innovativeness				-,296	,464	-,163	-,532	,450	-,293	-,271	,205	-,149
Opinion Leadership				,905	,378	,559*	,438	,531	,271	,268	,237	,166
Attributes of Innovation												
Relative Advantage							-,116	,573	-,056	-,251	,251	-,120
Compatibility							,047	,529	,029	,171	,239	,104
Complexity							-,716	,486	-,347	-,087	,243	-,042
Triability							,761	,405	,539**	,865	,290	,613*
Goal-directed behavior constructs												
Attitude										,038	,264	,019
Subjective Norms										-,326	,145	-,359*
Perceived behavioral control										,104	,155	,108
Positive AE										,678	,171	,543*
Negative AE										,136	,084	,134
Past behavior										-,505	,215	-,439**
Adjusted R^2		-0,104			0,079			0,210			,866	
R^2		0,080			0,309			0,539			**0,955**	
ΔR^2		0,080			0,230			0,230			0,416	
F for ΔR^2		0,435			2,992			1,747			12,448	
F for ANOVA		0,435			1,345			1,640			10,721	

Notes: * $\rho<0.05$, ** $\rho<0.10$

Table 19 Regression results of "Intention" as dependent variable / Innovators

	Model 1			Model 2			Model 3			Model 4			Model 5		
	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient
Independent variables															
Demographic factors															
Gender	-,476	,731	-,151	-,724	,686	-,229	,120	,791	,038	,448	,608	,142	,476	,502	,151
Age	,028	,027	,272	,013	,024	,124	-,002	,029	-,015	,011	,015	,107	,005	,013	,048
Education	,054	,360	,041	,323	,330	,245	,551	,398	,418	,657	,276	,499*	,768	,234	,583*
Household income	,014	,169	,019	,042	,152	,057	,154	,158	,209	,072	,088	,098	-,034	,087	-,047
Personal characteristics															
Innovativeness				,121	,294	,098	-,057	,294	-,046	,042	,160	,034	,177	,146	,144
Opinion Leadership				,556	,239	,506*	,430	,346	,392	,301	,185	,274	,168	,164	,153
Attributes of Innovation															
Relative Advantage							-,323	,374	-,228	-,272	,196	-,192	-,148	,171	-,104
Compatibility							,178	,345	,159	,063	,187	,057	-,022	,159	-,020
Complexity							-,573	,317	-,409**	-,072	,190	-,051	-,029	,158	-,021
Triability							,245	,264	,256	,298	,227	,312	-,131	,272	-,137
Goal-directed behavior constructs															
Attitude										,155	,206	,111	,136	,170	,097
Subjective Norms										-,199	,113	-,322	-,036	,119	-,059
Perceived behavioral control										,367	,121	,564*	,315	,103	,484
Positive AE										,335	,133	,395*	-,002	,190	-,002
Negative AE										,027	,065	,040	-,040	,062	-,058*
Past behavior										-,263	,168	-,337	-,012	,180	-,015
Desire													,497	,228	,732**
Adjusted R^2		-0,045			0,198			0,270			0,823			0,880	
R^2		0,130			0,399			0,574			0,941			**0,965**	
ΔR^2		0,130			0,269			0,175			0,367			0,024	
F for ΔR^2		0,744			4,032			1,438			8,290			4,757	
F for ANOVA		0,744			1,991			1,886			7,970			11,304	

Notes: * $\rho<0.05$, ** $\rho<0.10$

Innovators belong to the earliest group of people who purchase the new online game. Table 18 and Table 19 demonstrate the regression analysis results for Innovators. First of all, R2 of both regression lines is taken into consideration. R2 is coefficient of determination which provides information related to goodness of fit of a model. Total variance explained by dependent variables is 95.5% for the first regression and 65% for the second regression. High values of R2 can be interpreted that regression line fits the data collected. Therefore, it can be interpreted that first regression model is better than the second one due to high value of R2.

As it can be seen in the Table 18, household income (ß=0.197, ρ<0.05), triability (ß=0.613, ρ<0.05), subjective norms (ß=-0.359, ρ<0.05), positive anticipated emotions (ß=0.543, ρ<0.05) and past behavior (ß=-0.439, ρ<0.10) are the significant variables which have an influence on desire to play new online games. The interesting finding related to this regression is the effect of household income. Innovators belong to the earliest group of people who purchase the new online game. They are expected to adopt new online games quickly compared to other groups. Since online games are relatively expensive, it can be concluded that household income of innovators should be higher compared to other categories. Positive relationship between household income and desire to play new online games seems logical.

Table 19 demonstrates the regression results on innovators' intention to buy/play new online game. Significance of desire (ß=0.732, ρ<0.10) again becomes apparent in the results. Second significant factor on intention is education level (ß= 0.583, ρ<0.05) as it can be seen in the above table. As it is presented in the Descriptive Statistics section, education level of respondents is high. According to results, education level of 62% of the online game players is university. Therefore, it can be concluded that as the education level increases, intention to purchase new online games also increases for innovators.

Table 20 Regression results of "Desire" as dependent variable / Early Adopters

	Model 1			Model 2			Model 3			Model 4		
	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient
Independent variables												
Demographic factors												
Gender	2,061	,981	,393*	1,136	1,068	,217	2,840	1,109	,541*	2,278	,904	,434*
Age	-,011	,065	-,046	,017	,064	,071	,027	,057	,112	,033	,049	,137
Education	,103	,566	,050	-,023	,540	-,011	-,246	,467	-,118	-,154	,329	-,074
Household income	,017	,183	,018	,031	,178	,034	,157	,170	,170	2,426E-5	,139	,000
Personal characteristics												
Innovativeness				,149	,524	,123	-,199	,673	-,165	,186	,469	,154
Opinion Leadership				,393	,583	,321	,298	,559	,243	,104	,394	,085
Attributes of Innovation												
Relative Advantage							1,125	,455	,669*	,011	,363	,006
Compatibility							,031	,334	,024	-,041	,233	-,031
Complexity							,684	,396	,436	,495	,277	,315**
Triability							,378	,277	,329	,232	,182	,201
Goal-directed behavior constructs												
Attitude										-,220	,335	-,104
Subjective Norms										-,074	,115	-,074
Perceived behavioral control										-,044	,214	-,045
Positive AE										,920	,168	,788*
Negative AE										-,157	,133	-,150
Past behavior										,129	,107	,145
Adjusted R^2		0,023			0,120			0,369			0,780	
R^2		0,158			0,302			0,586			**0,901**	
ΔR^2		0,158			0,144			0,284			0,315	
F for ΔR^2		1,169			2,377			3,267			6,919	
F for ANOVA		1,169			1,657			2,693			7,424	

Notes: * $\rho<0.05$, ** $\rho<0.10$

Table 21 Regression results of "Intention" as dependent variable / Early Adopters

	Model 1			Model 2			Model 3			Model 4			Model 5		
	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient
Independent variables															
Demographic factors															
Gender	,112	,816	,028	-,868	,702	-,216	-,058	,773	-,014	-,190	,820	-,047	-1,302	,878	-,324
Age	-,024	,054	-,132	,003	,042	,018	,000	,039	-,003	-,034	,044	-,188	-,050	,039	-,275
Education	,161	,470	,101	-,019	,355	-,012	-,091	,326	-,057	-,029	,298	-,018	,045	,264	,028
Household income	,017	,152	,025	,002	,117	,003	-,002	,119	-,003	-,260	,126	-,367**	-,260	,110	-,367*
Personal characteristics															
Innovativeness				,638	,344	,688**	,573	,469	,619	1,096	,425	1,182*	1,005	,375	1,084*
Opinion				,058	,383	,062	-,211	,390	-,225	-,696	,357	-,741**	-,747	,315	-,795*
Leadership															
Attributes of Innovation															
Relative Advantage							,575	,317	,446**	,214	,329	,166	,209	,289	,162
Compatibility							,252	,233	,253	,333	,211	,333	,352	,186	,353**
Complexity							,321	,276	,266	,616	,252	,512*	,375	,246	,311
Triability							,019	,193	,022	-,171	,165	-,194	-,284	,154	-,322**
Goal-directed behavior constructs															
Attitude										,113	,304	,070	,221	,271	,136
Subjective Norms										-,229	,105	-,300*	-,193	,093	-,253**
Perceived behavioral control										,205	,194	,275	,226	,170	,304
Positive AE										,238	,153	,266	-,211	,243	-,235
Negative AE										-,413	,120	-,513*	-,336	,111	-,418*
Past behavior										,061	,097	,088	-,003	,090	-,004
Desire													,488	,221	,636*
Adjusted R^2		-0,149			0,353			0,478			0,692			0,763	
R^2		0,010			0,487			0,658			0,862			**0,902**	
ΔR^2		0,010			0,477			0,171			0,204			0,040	
F for ΔR^2		0,062			10,680			2,382			3,201			4,884	
F for ANOVA		0,062			3,634			3,657			5,075			6,491	

Notes: * $\rho<0.05$, ** $\rho<0.1$

Early adopters are fast in purchasing, but they do not belong to the first group of purchasing. They are expected to be innovative since they are the second adopter category who adopts new online games quickly. Table 20 demonstrates the regression results on desire for early adopters. Dependent variables of the model explain the 90.1% of the variance on desire. There is a significant positive relationship between gender (ß=0.434, ρ<0.05), complexity (ß=0.315, ρ<0.10), positive AE (ß=0.788, ρ<0.05) and desire. There is a positive relationship between desire and complexity which can be interpreted as interesting. Therefore, early adopters prefer new online game to be complex. As the complexity of new online games increases, adoption of new online games for early adopter also raises. Importance of emotions on adoption of online games is emphasized in the previous analyses. Table 20 also supports this deduction due to significant positive influence of positive AE on desire.

Table 21 shows the incremental effect of each variable as the each block of variables added to the regression. Total variance explained by variables is equal to 90.2%. Innovativeness (ß=1.084, ρ<0.05), compatibility (ß=0.353, ρ<0.10) and desire (ß=0.636, ρ<0.05) have positive influence on intention while household income (ß=-0.367, ρ<0.05), opinion leadership (ß=-0.795, ρ<0.05), triability (ß=-0.322, ρ<0.10), subjective norms (ß=-0.253, ρ<0.10) and negative anticipated emotions (ß=-0.418, ρ<0.05) have negative significant impact on intention. Innovativeness and desire has the highest effect among other variables. Moreover, early adopters prefer new online games to be compatible with their lifestyle so that they can purchase and play these games. The more compatible the online game, the higher the adoption for early adopters.

Table 22 Regression results of "Desire" as dependent variable / Early Majority

	Model 1			Model 2			Model 3			Model 4		
	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient
Independent variables												
Demographic factors												
Gender	-,334	,353	-,072	-,305	,317	-,066	-,339	,317	-,073	-,130	,238	-,028
Age	-,016	,020	-,070	,016	,019	,071	,020	,018	,087	,024	,014	,106**
Education	-,415	,159	-,229*	-,198	,145	-,110	-,134	,147	-,074	-,074	,110	-,041
Household income	-,063	,080	-,061	-,101	,072	-,097	-,090	,071	-,086	-,086	,053	-,083
Personal characteristics												
Innovativeness				,372	,147	,252*	,332	,155	,225*	,161	,121	,109
Opinion Leadership				,416	,138	,287*	,255	,146	,176**	,176	,109	,121
Attributes of Innovation												
Relative Advantage							,242	,133	,169**	,075	,116	,052
Compatibility							,148	,111	,122	,028	,087	,023
Complexity							,127	,109	,085	,115	,084	,077
Triability							,038	,082	,033	,036	,063	,031
Goal-directed behavior constructs												
Attitude										-,092	,125	-,052
Subjective Norms										-,019	,051	-,021
Perceived behavioral control										-,034	,052	-,037
Positive AE										,743	,067	,670*
Negative AE										,037	,065	,029
Past behavior										,062	,051	,069
Adjusted R^2		0,062			0,257			0,282			0,606	
R^2		0,085			0,283			0,325			**0,644**	
ΔR^2		0,085			0,198			0,042			0,319	
F for ΔR^2		3,764			22,143			2,433			22,381	
F for ANOVA		3,764			10,545			7,527			16,966	

Notes: * $\rho<0.05$, ** $\rho<0.10$

Table 23 Regression results of "Intention" as dependent variable / Early Majority

	Model 1			Model 2			Model 3			Model 4			Model 5		
	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient
Independent variables															
Demographic factors															
Gender	-,034	,323	-,008	-,049	,292	-,011	-,145	,277	-,034	,073	,220	,017	,126	,199	,030
Age	-,008	,018	-,039	,022	,017	,107**	,026	,016	,126	,029	,013	,140*	,019	,012	,092*
Education	-,425	,145	-,258*	-,233	,134	-,141	-,138	,128	-,084	-,106	,102	-,064	-,076	,092	-,046
Household income	-,026	,073	-,027	-,059	,066	-,063	-,035	,062	-,037	-,042	,049	-,044	-,007	,045	-,007
Personal characteristics															
Innovativeness				,448	,136	,333*	,354	,135	,263*	,223	,112	,165	,157*	,102	,117
Opinion Leadership				,257	,127	,194*	,028	,128	,021	-,047	,101	-,036	-,119	,092	-,090
Attributes of Innovation															
Relative Advantage							,116	,116	,088	-,082	,108	-,063	-,112	,097	-,086
Compatibility							,339	,097	,307*	,216	,081	,196*	,204	,073	,185*
Complexity							,012	,096	,009	,021	,078	,016	-,025	,071	-,019
Triability							,138	,072	,132**	,119	,059	,114*	,104	,053	,100**
Goal-directed behavior constructs															
Attitude										,003	,116	,002	,040	,105	,025
Subjective Norms										,035	,048	,041	,043	,043	,050
Perceived behavioral control										,033	,049	,039	,047	,044	,055
Positive AE										,594	,062	,587*	,292	,076	,289*
Negative AE										-,088	,060	-,076	-,103	,054	-,089**
Past behavior										,036	,048	,044	,011	,043	,013
Desire													,407	,068	,446*
Adjusted R^2		0,059			0,242			0,340			0,593			0,669	
R^2		0,081			0,270			0,380			0,632			**0,703**	
ΔR^2		0,081			0,188			0,110			0,252			0,071	
F for ΔR^2		3,584			20,623			6,951			17,142			35,514	
F for ANOVA		3,584			9,843			9,565			16,118			20,749	

Notes: * $\rho<0.05$, ** $\rho<0.10$

Table 22 and Table 23 demonstrate the regression results on desire and intention considering the early majority category. As it was mentioned earlier, 52.4 % of the respondents are categorized as ‘early majority’. Member of early majority category usually wait and observe the experience of a large group of peers before purchasing new online games. According to Table 23, age (ß=0.092, ρ<0.05), compatibility (ß=0.185, ρ<0.05), triability (ß=0.1, ρ<0.10), positive AE (ß=0.289, ρ<0.05) and desire (ß=0.446, ρ<0.05) are positively related to intention while there is a negative relationship between negative AE (ß=-0.089, ρ<0.10) and intention. Results again support the importance of emotions on adoption of online games. All dependent variables explain the 70.1% of the total variance in intention. Results of this category have resemblance with the results for all respondents since this category includes the majority of respondents. Members of early majority group prefer new online games to be compatible with their lifestyle, values and expectations. Furthermore, they want to be sure that online game is worth buying, so they would like to try before purchasing. Importance of triability is observed again for Early Majority group. Results support the importance of triability among other attributes of the online games.

Table 24 Regression results of "Desire" as dependent variable / Late Majority

	Model 1			Model 2			Model 3			Model 4		
	Regression Coefficient	**Standard error**	**Standard coefficient**	**Regression Coefficient**	**Standard error**	**Standard coefficient**	**Regression Coefficient**	**Standard error**	**Standard coefficient**	**Regression Coefficient**	**Standard error**	**Standard coefficient**
Independent variables												
Demographic factors												
Gender	-,483	,830	-,102	-1,310	,803	-,276	-1,052	,872	-,222	-1,706	,576	-,359*
Age	,011	,057	,041	-,041	,055	-,161	-,028	,060	-,108	,085	,038	,331*
Education	-,434	,420	-,227	-,041	,405	-,022	-,094	,425	-,049	-,491	,256	-,257**
Household income	,065	,231	,054	,258	,223	,216	,219	,241	,183	-,049	,150	-,041
Personal characteristics												
Innovativeness				-,089	,339	-,060	-,076	,364	-,051	,808	,298	,547*
Opinion Leadership				1,138	,481	,584*	,756	,590	,388	-,585	,413	-,300
Attributes of Innovation												
Relative Advantage							,131	,370	,071	-,145	,291	-,079
Compatibility							,291	,290	,216	,466	,199	,346*
Complexity							-,169	,280	-,098	,198	,214	,115
Triability							,020	,241	,016	,227	,152	,185
Goal-directed behavior constructs												
Attitude										-,712	,311	-,348*
Subjective Norms										-,015	,158	-,012
Perceived behavioral control										,212	,115	,207**
Positive AE										1,009	,179	,889*
Negative AE										,254	,171	,157
Past behavior										-,480	,153	-,456*
Adjusted R^2		-0,070			0,111			0,074			0,723	
R^2		0,034			0,241			0,3			**0,831**	
ΔR^2		0,034			0,207			0,059			0,531	
F for ΔR^2		0,325			4,767			0,656			13,088	
F for ANOVA		0,325			1,850			1,329			7,681	

Notes: * $\rho<0.05$, ** $\rho<0.10$

Table 25 Regression results of "Intention" as dependent variable / Late Majority

	Model 1			Model 2			Model 3			Model 4			Model 5		
	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient
Independent variables															
Demographic factors															
Gender	-,442	,747	-,102	-1,254	,704	-,290**	-,801	,729	-,185	-,818	,791	-,189	-1,151	,929	-,266
Age	-,044	,051	-,189	-,096	,048	-,409**	-,064	,050	-,272	-,007	,052	-,028	,010	,057	,043
Education	-,111	,377	-,064	,270	,355	,155	,156	,355	,090	,162	,352	,093	,066	,381	,038
Household income	,289	,207	,266	,481	,196	,442*	,414	,201	,380*	,225	,205	,206	,215	,208	,198
Personal characteristics															
Innovativeness				-,113	,297	-,084	-,088	,304	-,065	,358	,409	,266	,516	,471	,383
Opinion Leadership				1,137	,421	,640*	,509	,493	,287	-,158	,567	-,089	-,273	,595	-,154
Attributes of Innovation															
Relative Advantage							,209	,309	,125	-,318	,400	-,190	-,346	,406	-,207
Compatibility							,322	,243	,263	,413	,273	,337	,504	,305	,411
Complexity							-,019	,234	-,012	,228	,294	,146	,267	,302	,171
Triability							,218	,202	,195	,299	,208	,267	,343	,219	,306
Goal-directed behavior constructs															
Attitude										,035	,427	,019	-,104	,475	-,056
Subjective Norms										,016	,217	,015	,014	,219	,012
Perceived behavioral control										,057	,158	,061	,098	,170	,105
Positive AE										,599	,246	,579*	,796	,374	,769*
Negative AE										-,125	,235	-,085	-,075	,248	-,051
Past behavior										-,243	,211	-,253	-,337	,251	-,351
Desire													-,195	,277	-,214
Adjusted R^2		-0,043			0,177			0,221			0,371			0,358	
R^2		0,059			0,298			0,411			0,616			**0,624**	
ΔR^2		0,059			0,239			0,113			0,205			0,008	
F for ΔR^2		0,576			5,952			1,490			2,230			0,495	
F for ANOVA		0,576			2,471			2,162			2,509			2,343	

Notes: * $\rho<0.05$, ** $\rho<0.10$

13.6% of the respondents belong to the late majority category. These people are too late among their peers to purchase. Table 24 and Table 25 demonstrate the hierarchical regression results for late majority. First model is conducted to see the effects of variables on desire. Variables explain the 83.1% of total variance in desire. It can be seen in the Table 24 that gender (ß=-0.359, ρ<0.05), age(ß=0.331, ρ<0.05), education (ß=-0.257, ρ<0.10), innovativeness (ß=0.547, ρ<0.05), compatibility (ß=0.346, ρ<0.05), attitude (ß=-0.348, ρ<0.05), past behavior (ß=-0.456, ρ<0.05), perceived behavioral control (ß=0.207, ρ<0.10) and positive AE (ß=0.889, ρ<0.05) have significant impact on desire to play new online games for late majority category. There is a negative significant relationship between gender and desire. Men are more likely to play online games as it is also supported by this research results. Moreover, they have more tendencies to adopt new online games faster than women. Therefore, women are expected to be late majority / laggards which can explain the negative relationship between gender and desire. Past behavior also has a negative influence on desire which can be interpreted as unexpected. People who play online games frequently in past 6 months do not prefer to adopt new online games. The more frequent people play online games, the less the desire they have to adopt new online games.

Last analyses are conducted for laggards who wait a long time and purchase together with the latest group. As it can be observed from Table 26 and Table 27, R^2 for the regressions are 72.5% and 78% which is relatively high. Analyses results demonstrate the importance of emotions on desire. The only significant factors affecting desire are positive (ß=0.515, ρ<0.05) and negative anticipated emotions (ß=-0.232, ρ<0.10) for the first regression. Table 27 shows that attitude (ß=0.284, ρ<0.10) has a positive significant relationship with intention to play new online games. Attitude questions aims to measure the player's evaluation of online games whether they are enjoyable, exiting or effective for their skills. Attitude scale consists of positive statements. Therefore, it can be concluded that the more positive attitude the online game player has, the more intention to play new online games.

Table 26 Regression results of "Desire" as dependent variable / Laggards

	Model 1			Model 2			Model 3			Model 4		
	Regression Coefficient	**Standard error**	**Standard coefficient**	**Regression Coefficient**	**Standard error**	**Standard coefficient**	**Regression Coefficient**	**Standard error**	**Standard coefficient**	**Regression Coefficient**	**Standard error**	**Standard coefficient**
Independent variables												
Demographic factors												
Gender	-,277	,467	-,099	-,630	,418	-,224	-,423	,400	-,151	-,354	,389	-,126
Age	-,010	,025	-,070	,015	,022	,103	,009	,021	,064	,033	,021	,227
Education	-,339	,320	-,192	-,216	,289	-,122	-,178	,275	-,101	-,149	,256	-,084
Household income	-,121	,175	-,127	,028	,158	,029	,013	,144	,014	-,105	,133	-,111
Personal characteristics												
Innovativeness				,182	,299	,170	,134	,270	,124	,073	,252	,068
Opinion Leadership				,503	,280	,478**	,095	,274	,090	,268	,246	,255
Attributes of Innovation												
Relative Advantage							,889	,299	,554*	-,014	,390	-,009
Compatibility							-,050	,200	-,049	,084	,208	,082
Complexity							-,104	,166	-,088	-,084	,147	-,071
Triability							,150	,170	,139	-,095	,162	-,088
Goal-directed behavior constructs												
Attitude										,161	,177	,150
Subjective Norms										,092	,132	,092
Perceived behavioral control										-,016	,140	-,018
Positive AE										,581	,184	,515*
Negative AE										-,375	,198	-,232**
Past behavior										-,085	,151	-,093
Adjusted R^2		-0,012			0,233			0,395			0,562	
R^2		0,082			0,340			0,536			**0,725**	
ΔR^2		0,082			0,258			0,196			0,189	
F for ΔR^2		0,876			7,226			3,843			3,092	
F for ANOVA		0,876			3,179			3,812			4,448	

Notes: * $\rho<0.05$, ** $\rho<0.10$

Table 27 Regression results of "Intention" as dependent variable / Laggards

	Model 1			Model 2			Model 3			Model 4			Model 5		
	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient	Regression Coefficient	Standard error	Standard coefficient
Independent variables															
Demographic factors															
Gender	,161	,177	,150	-,416	,452	-,145	-,185	,430	-,065	-,323	,375	-,113	-,214	,367	-,075
Age	,092	,132	,092	,034	,024	,226	,018	,023	,123	,020	,020	,132	,009	,020	,063
Education	-,016	,140	-,018**	-,527	,313	-,292	-,468	,296	-,260	-,250	,247	-,139	-,204	,240	-,113
Household income	,581	,184	,515	-,012	,170	-,013	-,017	,155	-,018	-,152	,128	-,157	-,119	,125	-,123
Personal characteristics															
Innovativeness				,193	,323	,176	,165	,290	,150	,132	,243	,121	,109	,235	,100
Opinion Leadership				,265	,303	,247	-,125	,294	-,116	-,083	,237	-,078	-,167	,233	-,155
Attributes of Innovation															
Relative Advantage							,706	,322	,432*	-,178	,375	-,109	-,174	,362	-,106
Compatibility							,138	,215	,132	,015	,200	,014	-,011	,193	-,011
Complexity							,127	,178	,106	,128	,142	,106	,154	,138	,128
Triability							,132	,183	,120	-,140	,156	-,127	-,110	,151	-,100
Goal-directed behavior constructs															
Attitude										,360	,171	,329*	,311	,167	,284**
Subjective Norms										,031	,128	,031	,003	,124	,003
Perceived behavioral control										,176	,135	,199	,181	,130	,205
Positive AE										,555	,177	,483*	,375	,200	,326**
Negative AE										-,130	,191	-,079	-,014	,196	-,008
Past behavior										,184	,145	,197	,211	,141	,226
Desire													,310	,179	,305**
Adjusted R^2		0,065			0,138			0,327			0,609			0,636	
R^2		0,152			0,258			0,484			0,754			**0,780**	
ΔR^2		0,152			0,106			0,225			0,271			0,026	
F for ΔR^2		1,749			2,652			3,599			4,956			3,013	
F for ANOVA		1,749			2,148			3,091			5,180			5,416	

Notes: * $\rho<0.05$, ** $\rho<0.10$

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 Discussion and Interpretation of Results

The main concern of this study is to reveal the factors affecting adoption of online games, using a theoretical framework based on the goal-directed behavior model and diffusion of innovations theory. Factors affecting the adoption behavior are determined based on the goal directed behavior theory, and differences between adopter categories of online game buyers are examined through Rogers' diffusion of innovations (DOI) theory. Analyses are conducted in order to obtain the results related to:

- relationship between attributes of innovation and goal-directed behavior determinants,
- effects of socio-economic factors, personal characteristics, attributes of innovation and goal-directed behavior constructs on desire,
- effects of socio-economic factors, personal characteristics, attributes of innovation and goal-directed behavior constructs on intention,
- difference between adopter categories.

Discussion and interpretation of each findings related to above items are explained in the following paragraphs.

First of all, linear regression is applied to see the relationship between attributes of innovation (relative advantage, compatibility, complexity, triability, observability) and goal-directed behavior constructs (positive AE, negative AE, attitude, perceived behavioral control, subjective norms, past behavior, desire, intention). Constructs are identified as dependent variables while attributes of innovation are independent variables. Total number of six regressions is conducted to reveal the significant

relationships. The most insightful result of these analyses is the effect of triability on constructs of goal-directed behavior model. Triability is significantly related to all dependent variables except positive AE. Results demonstrate that people prefer to try new online game before purchasing/playing. Relative advantage is another effective factor on behavioral constructs. Actually, online players may prefer trying new online game to see the differentiated features before adopting. They would like to see how better the game is compared to other products. To sum up, results emphasize the importance of relative advantage and triability of online games on goal-directed behavior model determinants.

The main factors affecting the adoption of online games are deeply investigated by conducting two hierarchical regressions on desire and intention. Socio-economic factors, personal characteristics, attributes of innovation and goal-directed determinants are identified as blocks of independent variables while desire and intention are defined as dependent variables. Hierarchical regression enables to see the incremental effect of each dependent variable. According to results, age, opinion leadership, triability and positive AE have significant impact on desire to adopt new online games. After adding desire as dependent variable, hierarchical regression on intention is conducted again. Results show that age, innovativeness, compatibility, triability, anticipated emotions, perceived behavioral control and desire influence intention. Young and innovative people are more likely to adopt new online games. Players prefer to try online games before purchasing because they want to be sure that it is worth purchasing. Furthermore, triability help them to see how compatible new online game with their lifestyle, expectations and tastes. Results reveal the importance of emotions on adoption of new online game. People would like to feel relaxed, happy and excited while playing online games. As the online games continue to make individuals happy, adoption will increase.

One of the main concerns of this study is to examine the differences across adopter categories. Respondents are divided into five categories as innovators, early adopters, early majority, late majority and laggards in terms of their answers. Hierarchical regression is applied for each category and results are interpreted separately.

According to results, positive anticipated emotions have a significant influence on adoption of online games for all categories. Results support the considerable effect of emotions on adoption of innovations. There is a positive relationship between education level and intention to play new online games. People with high education level are more likely to follow the technological developments and comply with the innovations. Since innovators purchase first and adopt fastest, their education level is expected to be higher compared to other categories. Results also supports that higher the education, more innovative the people. Household income is another socio-economic factor that has an impact on online game innovation. Considering Innovators, there is a significant positive relationship between household income and diffusion of online games. Increase in household income has positive influence on accelerating the adoption of new online game. Rogers (1983) also supports this finding in his studies. According to him, innovators are believed to be highly educated and wealthy compared to late adopters. Therefore, results are compatible with the literature. Early adopters are also fast in purchasing, so they can be considered as innovative as well. Results also demonstrate that innovativeness has a significant influence on intention to adopt new online games for early adopters. Early majority category has the highest percentage of respondents (54.2%) therefore results are similar to the general findings mentioned in the previous paragraph. Late majority and laggards are the two groups whose adoption is slow compared to first three categories. Results indicate that there is a negative relationship between gender and desire for late majority. Negative relationship between gender and desire can be explained as rational, since late majority is expected to include more women than men. As it is also mentioned in the literature review, men are more likely to play online games. Lastly, effect of anticipated emotions is observed in the adoption behavior of Laggards.

In conclusion, results of this study highlight the importance of anticipated emotions and triability of online games. Anticipated emotions have positive influence on both intention and desire to adopt new online games. As it is mentioned in Literature Review part, people continue to purchase and play if they have positive impression

and experiences with the online game. People expect to feel relaxed, happy and excited while playing online games. Moreover, they would like to spend pleasant time and escape from the daily tasks for a while. Therefore, results of this study point out the fundamental effect of anticipated emotions on adoption of online games. Another crucial finding of this study is the importance of triability. Triability is positively related to goal-directed model determinants and it has a significant effect on both desire and intention to adopt new online games. According to results, players want to be sure that new online game is worth purchasing and playing. People also expect new online game to fulfill their expectations, so compatibility is another significant variable affecting adoption of new online games. Results demonstrate that online game should be compatible with player's lifestyle, expectations, preferences and tastes.

5.2 Limitations and Directions for Future Research

There are some limitations for this study which should be mentioned to inform the future researchers. First of all, this study is limited with online game players in Turkey. Sample of the study is not representative since non-probabilistic sampling technique is applied. Sample is aimed to include online game players, so respondents are selected accordingly. Sampling technique of this study is a combination of convenience and judgmental sampling. Therefore, sample selection bias may occur due to applying non-probabilistic sampling technique. Sample selection bias not only affects external and internal validity of the survey but also influences the accuracy of the survey results. Samples with selection bias error may cause obtaining incorrect results about the correlation between variables. Moreover, prediction value independent variables may mislead the researcher (Cuddeback, Wilson, Orme, & Combs-Orme, 2004).

Respondents of this study are reached by using social media (Facebook and Twitter), online forums and e-mails since online survey is applied. Most important advantage of the online survey method is that it enables researchers to reach broad spectrum of respondents. Although it is an easy method to reach people, some people may not

want to spend time to fill the questionnaire. These people can easily ignore the request of an online survey because researcher does not have a chance to persuade the respondent. Therefore, online survey has a higher risk of having low response rate compared to other survey methods. In other words, online survey has high non-response bias compared to other survey techniques.

Another limitation of this study is also contributed to the sampling method. Since people are reached by using social media, e-mail and online forums, same type of respondent might participate in a survey which can cause same informant bias. For instance, people who do not use social media may not be reached. As a result of the limitations mentioned in the previous paragraphs, sample is not representative due to selection bias, non-response bias and same informant bias (Malhotra, 2010). So, the weaknesses behind selection of non-probabilistic sampling technique cause limitations for the study.

There are many scales included in the questionnaire of the study. It is assumed that these scales include all related items about the subject. Although, reliability and factor analyses are conducted to support this assumption, they may exclude some important items that could be related to adoption of online games. Additional constructs may be included in the questionnaire in order to get more accurate results and predict the diffusion better. Specific features of online games can be deeply investigated in order to find out the significant relationships with online game adoption. For instance, price, multiplayer option, visual effects, quality of images may be included in the questionnaire to observe the relationship with online gamer's preferences and adoption. Moreover, personal characteristics of online gamers may be examined in detail and they can be involved in the questionnaire to see the effect of them on diffusion of online games.

This study is limited with the Turkey, so future researchers may narrow down the study by applying probability sampling methods. Moreover, future researchers may focus on the cultural differences of online game players by comparing the results of two different samples.

5.3 Managerial Implications

This part includes recommendations for game producers and managers according to the findings of this study. Following paragraphs focus on the significant suggestions contributed to the different dimensions of this study.

Companies use their valuable resources and time search in order to increase sales and profits by attracting new customers (Kotler & Keller, 2009). Game companies also try to find effective ways to gain new customers as the online games increase its popularity day by day. Nowadays, rivalry between game producers increased, so acquisition of new customers became significant issue. There are different types of acquisition methods which can be applied by game companies. Advertising, e-mail, workshops, events, direct phone calls are some of the effective methods used by companies to attract new customers. Before determination of the right method, first thing game companies should do is to identify the target customers. Rogers (1983) divided target consumers into five main categories in terms of time to adopt innovation according to diffusion of innovation theory. Laggards and late majority categories include people who adopt new online games latest. Therefore, game producers should especially target the customers in those categories to fasten their adoption. Reasons behind their late adoption may be investigated by applying some research. New online games can be designed and developed according to their preferences to attract their attention. Advertising has a great power to reach a lot of people at the same time. It is an effective way of accessing new customers and making a good impression on them. Therefore, managers can apply online advertising, use billboards and produce television advertising for acquisition of new customers from the laggards and late majority categories.

Besides attracting new customers, retaining the current customer is another significant issue for companies. Customer defection is one of the crucial issues that many companies suffer from. Retention rate should be taken under control and companies should take required precautions to prevent customer defection. Actually, acquisition of new customers is almost five times expensive than keeping the current customers (Kotler & Keller, 2009). Therefore, managers spend their resources and

time on satisfying their current customers and decreasing defection. Innovators, early adopters and early majority are the target customers that managers should focus on. People in these categories are loyal players who adopt new online games fast. Managers can make promotions; organize special events to display new online games and make special offers for these loyal online game players.

Another significant point to be mentioned is the demographical characteristics of the online game players. According to the results of this study, age interval of online game players is 15-34. Game companies should develop games considering preferences of younger people in order to keep them as customers. Moreover, they should seek ways to expand the range of customers and attract older people's attention. Age is other important demographics that managers should take into consideration. Results demonstrate that there is relatively low number of women playing online games. Actually, only 10.4% of respondents are female in this study. This finding should be regarded as a warning for game producers to start producing online games for women.

Another insightful implication for managers is contributed to anticipated emotions of online game players. Managers should definitely focus on emotions in order to attract online gamers' attention. As it is supported with this study, online gamers would like to feel happy and relaxed when playing online games. They would like to spend pleasant time and having fun at the same time. Therefore, managers should develop games considering these findings. Emotions should be a basis to produce advertisements for customers.

Last but not latest, results emphasize the importance of triability for online game players. According to the findings, players prefer to see the comparative advantage of the game because they want to believe that it is worth playing. Trying the online game enables players to observe the visuals, quality of images and features before purchasing. It is a good experience for players to determine buying or not. Therefore, managers should spend considerable time to produce trial version of the games before launching to the market. People should be able to download the trial version to experience the game.

Furthermore, managers can also organize workshops or event which enables players to see the special characteristics of the new online game. Companies can publish some advertisements in the website of the game to impress the target customers. These advertisements can include the scenes, visuals and parts of the games to make a good impression on online game players.

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APPENDICES

A. QUESTIONNAIRE (IN ENGLISH)

METU MBA Thesis Questionnaire

Dear participant,

This questionnaire is conducted by METU (Middle East Technical University) Business Administration graduate student Gülnur Baybaş in order to be used in master thesis. Aim of the questionnaire is to investigate the factors affecting adoption of online games by applying goal-directed behavior model. This questionnaire is prepared to be conducted with online game players. Therefore, you should be playing online games in order to answer the questions in the survey.

Results of the online survey will be only used for academic purposes. Collected data will not be shared with third parties and data will not be used for different purposes other than this study. It is really important that participants answer the question objectively.

Thank you for your participation and contribution to this study.

Contact: e160849@metu.edu.tr

1. Gender	☐ Female ☐ Male
2. Age	
3. Education	☐ Primary School ☐ Secondary School ☐ High School ☐ University ☐ Master Degree ☐ PhD
4. Occupation	☐ Not working ☐ Working ☐ Retired ☐ Student

	☐ Others
5. Household income (TL)	☐ Lower than 1500 ☐ 1501-3000 ☐ 3001-4500 ☐ 4501-6000 ☐ More than 6000
6. Which online games do you play?	☐ Massive multiplayer online role playing game (World of Warcraft, Elder Scrolls Online, Knight Online, Guild Wars, Final Fantasy and etc.) ☐ Massive multiplayer online first person shooters game (Counter Strike, Battlefield, Halo 5, Quake 4, Battlefield 4 and etc.) ☐ Strategy games (Age of Empire, Total War) ☐ Sport games (FIFA, PES, NBA, NFL etc.) ☐ Racing games ☐ Card games (Texas HoldEm Poker, Spider Solitare, etc) ☐ Puzzle games (Candy Crush, Pet Rescue, Bubble Witch Saga etc.) ☐ Others
7. In general, how many months does it take to purchase/play the new online game for you?	
8. When do you generally purchase new online game compared to an average online game player? (Please do not select more than one answer)	☐ I belong to the earliest group of people who purchase the new online game ☐ I am fast in purchasing, but I don't belong to the first group of purchasing ☐ I usually wait and observe the experience of a large group of peers before I purchase ☐ I am generally too late among my peers to purchase ☐ I wait a long time and purchase together with the latest group among my peers
9. How long have you been purchasing and playing online game?	☐ Less than 6 months ☐ 6 monhts-12 months (1 year) ☐ 13 months-24 months (2 year) ☐25 months- 36 months (3 year) ☐ More than 3 years

10. Please indicate your response to the following statements	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
I see myself as competent and knowledgeable about online games					
I am ahead of people regarding knowledge of online games compared to people around me					
I can quickly find out the fine details of an online game					

10. Please indicate your response to the following statements	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
I am a good online game player					
I am usually the first one to learn about the newest online games on the market					

11. Please indicate your response to the following statements	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
In general, I always talk to my friends and neighbors about new games					
When I talk to my friends and neighbors about online games, I give great deal information					
Compared to my friends, I usually talk to larger number of people about online games					
Compared with my friends, I am very likely to be asked about online games					
In a discussion of online games, I am most likely to listen my friends' idea					
In a discussion of online games, I mostly tell my friends about games					
Overall in all of my discussions with friends and neighbors, I am often used as a source of advice					

Source: *Opinion Leader Scale* (King & Summers, 1970)

12. Please indicate your response to the following statements	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
I am one of the leaders of obtaining newest information about online games					
I am usually the first one to learn newest trends related to online games					
I am usually ahead of people regarding purchase of new online games					
I usually purchase new online games without searching available alternatives					
I belong to the group of earliest online game buyers compared to my friends					

12. Please indicate your response to the following statements	Disagree	Partially disagree	Neutral	Partially agree	Agree
I usually play more types of online games compared to my friends					

Source: Respondents Innovativeness Scale (Cheng & Kao, 2004)

13. Before you answer the following questions, please consider a specific online game that you know but you haven't purchased yet.

Relative advantage[1]	Disagree	Partially disagree	Neutral	Partially agree	Agree
Overall, I find playing online game enjoyable.					
Playing online game enhances quality of my life.					
Playing online game makes me relaxed.					
The advantages of playing online game far outweigh the disadvantages.					

Complexity	Disagree	Partially disagree	Neutral	Partially agree	Agree
I believe that this specific online game is hard to play					
I have a difficult time understanding how new to play online games					
It is hard for me to remember how to apply instructions when playing online game					
Playing online games requires a lot of mental effort					
Playing online game is often frustrating due to complexity					
Learning to play an online game is hard for me					

[1] (Moore & Benbasat, 1991)

Compatibility	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
Playing this specific online game is compatible with all aspects of my life					
Playing this specific online game is completely compatible with my current situation					
I think that playing this specific online game fits well with the way I live my life					
Playing this specific online game fits into my lifestyle					
I feel that playing this specific online game meet my social needs					

Triability	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
I've had a great deal of opportunity to try this specific online game					
I know where 1 can go in order to try this specific online game					
Trying this specific online game before purchasing is very important					

Observability	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
I feel that I can really see how good this specific online game is in a store					
The benefits of this specific online game can be easily observed in a store.					
I know where I can go to see a demonstration of this specific online game					

Perceived behavioral control[2]	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
I am capable of purchasing/playing this specific online game during the next four weeks					
If I wanted to, it would be easy for me to purchase/ play this specific new online game during the next four weeks					

Desire	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
I have a very strong desire to play this specific online game					

Intentions	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
I plan to purchase this specific online game when it is launched					
I intend to purchase and play this specific online game					

Anticipated emotions (negative/ positive)	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
If I ever purchase / play this specific online game, I would feel excited					
If I ever purchase/play this specific online game, I would feel happy					
If I ever purchase/play this specific online game, I would feel satisfied					
If I ever purchase/play this specific online game, I would feel angry					
If I ever purchase/play this specific online game, I would feel frustrated					
If I ever purchase/play this specific online game, I would feel guilty					

[2] (Perugini & Bagozzi, 2001)

14. Please write the name of the online game that you heard about / played with and you haven't purchased yet: …….

15. Please indicate your response to the following statements:

Frequency & Recency	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
I purchased / played new online games a lot of times during last six month					
I purchased / played new online games rather frequently during last month					

Subjective norms	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
Most important people in my life would approve of me purchasing and playing this specific online game					

Attitudes	**Disagree**	**Partially disagree**	**Neutral**	**Partially agree**	**Agree**
I think playing online games is useful for my language skills					
I think playing online games is effective for my social skills					
I think playing online games is exciting					
I think playing online games is enjoyable					

B. QUESTIONNAIRE (IN TURKISH)

ODTÜ İşletme Yüksek Lisans Tez Anketi

Değerli katılımcı,

Bu anket, ODTÜ İşletme Yüksek Lisans programı öğrencisi Gülnur Baybaş tarafından yükseklisans tezinde kullanılmak üzere uygulanmaktadır. Anketin amacı, çevrimiçi (online) oyunların benimsenmesinin amaca yönelik davranış teorisi kullanılarak araştırılmasıdır. Anketin online oyun oynayan kişiler ile yapılması amaçlanmıştır, bu sebeple bu anketi cevaplandırabilmek için online oyun oynuyor olmanız gerekmektedir.

Araştırma ile toplanacak olan bilgiler kesinlikle gizli tutulacak, sadece bilimsel amaçlı kullanılacaktır. Toplanan veri üçüncü kişilerle paylaşılmayacak ve çalışma dışında farklı bir amaç ile kullanılmayacaktır. Ankete objektif yanıtlar vermeniz çok önemlidir.

Bu araştırmaya katıldığınız ve katkılarınız için çok teşekkür ederim.

İletişim: e160849@metu.edu.tr

1. Cinsiyet	☐ Kadın ☐ Erkek
2. Yaş	
3. Eğitim	☐ İlkokul ☐ Ortaokul ☐ Lise ☐ Üniversite ☐ Yükseklisans ☐ Doktora
4. Çalışma durumu	☐ Çalışmıyor ☐ Çalışıyor ☐ Emekli ☐ Öğrenci ☐ Diğer:.....
5. Hanehalkı geliri (TL)	☐ 1500'den az ☐ 1501-3000 ☐ 3001-4500 ☐ 4501-6000

	☐ 6000'den fazla
6. Hangi online oyunları oynuyorsunuz? (Birden fazla seçenek işaretleyebilirsiniz)	☐ Online çok oyunculu rol yapma oyunları (World of Warcraft, Elder Scrolls Online, Knight Online, Guild Wars, Final Fantasy and etc) ☐ Online çok oyunculu birinci şahıs nişancı oyunları (Counter Strike, Halo 5, Quake 4, Battlefield 4 and etc) ☐ Strateji oyunları (Age of Empire, Total War, etc) ☐ Spor oyunları (FIFA, PES, etc) ☐ Yarış oyunları ☐ Kart oyunları (Texas HoldEm Poker, Spider Solitare, Mahjong Titans etc) ☐ Bulmaca oyunları (Candy Crush, Pet Rescue, Bubble Witch Saga etc) ☐ Diğer:....
7. Genellikle yeni çıkan bir online oyunu satın almanız kaç ay sürer?	☐ Ücretsiz online oyunları tercih ediyorum, oyun satın almıyorum ☐ Ön sipariş ile alıyorum ☐ Yeni oyunu satın almanızın kaç ay sürdüğünü yazınız :.....
8. Ortalama bir online oyun kullanıcısına göre yeni çıkan bir oyunu ne zaman satın alırsınız? (Lütfen birden fazla seçenek <u>işaretlemeyiniz</u>)	☐ İlk satın alan grubun içerisinde yer alırım ☐ Satın almada hızlıyımdır ancak ilk satın alanlar arasında yer almam ☐ Genellikle satın almadan önce bir süre beklerim ve satın alan arkadaşlarımın tecrübelerini gözlemlerim ☐ Arkadaşlarım arasında genellikle en geç satın alanlar arasında olurum ☐ Satın almadan önce uzun bir süre beklerim ve en geç satın alan arkadaşlarım ile birlikte ben de satın alırım
9. Ne kadar zamandır online oyun satın alıyor/ oynuyorsunuz?	☐ 6 aydan daha kısa bir süredir ☐ 6 ay- 12 ay (1 yıl) ☐ 13 ay- 24 ay (2 yıl) ☐ 25 ay- 36 ay (3 yıl) ☐3 yıldan fazla bir süredir

10. Aşağıdaki ifadelere size uygun şekilde cevap veriniz.	**Katılıyorum**	**Kısmen katılıyorum**	**Çekimser**	**Kısmen katılmıyorum**	**Katılmıyorum**
Online oyunlar konusunda kendimi bilgili ve yetkin görüyorum					
Konu online oyunlar olduğunda çevremde en iyi bilenlerden biriyim					
Bir online oyunun inceliklerini keşfetmem fazla zaman almaz					

10. Aşağıdaki ifadelere size uygun şekilde cevap veriniz.	**Katılıyorum**	**Kısmen katılıyorum**	**Çekimser**	**Kısmen katılmıyorum**	**Katılmıyorum**
İyi bir online oyun oynayıcısıyım					
Piyasaya çıkan online oyunları ilk öğrenenlerden biri ben olurum					
Her zaman arkadaşlarımla ve çevremdekilerle yeni online oyunlar hakkında konuşurum					
Arkadaşlarımla ve çevremdekilerle online oyunlar hakkında konuştuğumda, kapsamlı bilgi veririm					
Arkadaşlarımla kıyasladığımda, online oyunlar hakkında daha fazla kişi ile konuşurum					
Arkadaşlarımla kıyasladığımda, online oyunlar hakkında bana daha çok soru sorululur					
Online oyunlar ile ilgili olan bir tartışmada, çoğunlukla arkadaşlarımın fikrini dinlerim					
Online oyunlar ile ilgili olan bir tartışmada, çoğunlukla ben fikrimi ifade ederim ve arkadaşlarım beni dinlerler					
Online oyunlarla ilgili olan bir tartışmada, arkadaşlarım benden tavsiye almayı tercih ederler					

11. Aşağıdaki ifadelere size uygun şekilde cevap veriniz.	**Katılıyorum**	**Kısmen katılıyorum**	**Çekimser**	**Kısmen katılmıyorum**	**Katılmıyorum**
Yeni online oyunlar hakkında en güncel bilgilere sahip olan kişilerin başında gelirim					
Genelikle online oyunlarla ilgili en yeni trendleri öğrenen ilk kişi benimdir					
Genellikle yeni online oyunları satın alma/oynama konusunda diger insanlardan once davranırım					
Genellikle farklı alternatifler ile ilgili araştırma yapmaya gerek duymadan yeni online oyun satın alırım					
Arkadaşlarıma kıyasla yeni oyunları ilk satın alan kişiler arasında yer alırım					
Genellikle arkadaşlarıma kıyasla daha çok çeşit online oyun oynarım					

12. Lütfen aşağıdaki sorulara daha onceden bildiğiniz/duyduğunuz ancak henüz satın almadığınız özel bir oyunu düşünerek cevap veriniz:

	Katılıyorum	**Kısmen katılıyorum**	**Çekimser**	**Kısmen katılmıyorum**	**Katılmıyorum**
Online oyun oynamanın eğlenceli olduğunu düşünüyorum					
Online oyun oynamanın hayat kalitemi arttırdığını düşünüyorum					
Online oyun oynamak beni rahatlatıyor					
Online oyun oynamanın avantajları dezavantajlarından fazladır					
Online oyun oynamak zordur					

	Katılıyorum	Kısmen katılıyorum	Çekimser	Kısmen katılmıyorum	Katılmıyorum
Yeni bir online oyunun nasıl oynanacağını anlamakta güçlük çekerim					
Yeni bir online oyunu oynarken talimatları ve kuralları takip etmek benim için zordur					
Online oyun oynamak zihinsel çaba gerektirir					
Online oyun oynamak zaman zaman karmaşık kullanımı sebebiyle moral bozucu olmaktadır					
Yeni bir online oyunu oynamayı öğrenmek benim için zordur					
Online oyun oynamak hayatıma her yönden uymaktadır					
Bu online oyunu satın almak/oynamak şuanki durumum için tamamiyle uygundur					
Online oyun oynamak hayatımı yaşayış şeklime uygundur					
Online oyun oynamak yaşam tarzıma uygundur					
Online oyun oynamanın sosyal ihtiyaçlarımı karşıladığını düşünüyorum					
Almak/oynamak istediğim bu oyunu denemek için çok fazla fırsatım oldu					
Bu oyunu nerede deneme fırsatım olacağı hakkında bilgim var					

	Katılıyorum	Kısmen katılıyorum	Çekimser	Kısmen katılmıyorum	Katılmıyorum
Online oyun satın almadan once deneme şansının olması önemlidir					
Mağazada online oyunun ne kadar iyi olduğunun deneyerek anlaşılabileceğine inanıyorum					
Online bir oyunun iyi olup olmadığı mağazada kolaylıkla gözlemlenebilir					
Bu online oyunu görmek için nereye gitmem gerektiğini biliyorum					
Önümüzdeki dört hafta içerisinde bu online oyunu satın almam için önümde herhangi bir engel yoktur					
Eğer istersem, bu online oyunu önümüzdeki dört hafta içerisinde kolaylıkla satın alabilirim					
Bu online oyunu oynamayı gerçekten çok istiyorum					
Bu online oyun piyasaya sürüldüğünde satın almayı /oynamayı planlıyorum					
Bu online oyunu satın almak/ oynamak niyetindeyim					
Eğer bu oyunu satın alabilirsem / oynarsam, çok heyecanlı hissederim					
Eğer bu oyunu satın alabilirsem / oynarsam, çok mutlu hissederim					
Eğer bu oyunu satın alabilirsem / oynarsam, çok tatmin olmuş hissederim					

	Katılıyorum	Kısmen katılıyorum	Çekimser	Kısmen katılmıyorum	Katılmıyorum
Eğer bu oyunu satın alabilirsem / oynarsam, çok kızgın/mutsuz hissederim					
Eğer bu oyunu satın alabilirsem / oynarsam, çok rahatsız hissederim					
Eğer bu oyunu satın alabilirsem / oynarsam, çok suçlu hissederim					

13. Lütfen bir önceki soruda duyduğunuz ancak henüz satın almadığınız online oyunun adını yazınız: …….

14. Aşağıdaki ifadelere size uygun şekilde cevap veriniz.

	Katılıyorum	Kısmen katılıyorum	Çekimser	Kısmen katılmıyorum	Katılmıyorum
Geçtiğimiz 6 ay boyunca, pek çok kez online oyun satın aldım ve oynadım					
Geçen ay sık sık online oyun satın aldım ve oynadım					
Hayatımdaki en önemli insanlar online oyun satın almamı ve oynamamı onaylamaktadır					
Online oyun oynamanın yabancı dil becerilerimi geliştirmede etkili olduğunu düşünüyorum					
Online oyun oynamanın sosyal becerilerimin gelişmesinde etkili olduğunu düşünüyorum					
Online oyun oynamanın heyecanlı olduğunu düşünüyorum					
Online oyun oynamanın eğlenceli olduğunu düşünüyorum					

C. TURKISH SUMMARY

Yenilikler insan hayatının kalitesini arttırmakta ve insanların hayatını kolaylaştırmaktadır. Şüphesiz ki, bilgiye sınırsız erişim sağlayan ve bambaşka bir iletişim dünyası açan internet; insanoğlu tarihindeki en önemli yeniliklerden biridir. Günümüzde, internet insanlar için vazgeçilmez bir ihtiyaç haline gelmiştir. Türkiye'de 35 milyondan fazla internet kullanıcısı bulunmaktadır ve bu kullanıcılar interneti, iletişim, alışveriş, seyahat planlaması, haber takibi, oyun oynamak gibi aktiviteler amacıyla kullanmaktadırlar. Çevrimiçi oyunlar internet ile birlikte hayatımıza giren önemli yenilikler arasındadır.

Online oyunların insan hayatının bir parçası haline gelmesi sonucu popülerliğinin artması birçok araştırmacının ilgisini çekmiştir. Bu sebeple, çevrimiçi oyunların farklı boyutları ile ilgili pek çok araştırma yapılmıştır. Bazı tüketicilerin yeniliklerin benimsenmesinde neden daha hızlı olduğunun anlaşılması önemli bir araştırma konusu haline gelmiştir. Dinamik bir pazarda gerçek anlamda yenilikçi bir ürün olan çevrimiçi oyunların benimsenmesini etkileyen faktörlerin araştırılması literatüre önemli katkılar sunacaktır. Yeniliklerin benimsenmesi sürecinde kabullenici (adopter) kategorilerinin farklılıklar gösterdiğine dair güçlü kanıtlar bulunmaktadır. Bu sebeple, kabullenici kategorileri için ayrı ayrı yeniliğin benimsenmesini etkileyen faktörlerin incelenmesinin değerli sonuçlar ortaya çıkarması beklenmektedir.

Bu çalışma, çevrimiçi oyunların benimsenmesini etkileyen faktörlerin amaca yönelik davranış modeli ve yeniliğin yayılması teorisi kullanılarak araştırılmasını amaçlamaktadır. Rogers'ın yeniliğin yayılması teorisi ve Perugini ve Bagozzi'nin amaca yönelik davranış teorisi bu çalışmanın teorik altyapısını oluşturmaktadır. Yeniliğin benimsenmesini etkileyen faktörler amaca yönelik davranış teorisi kullanılarak belirlenirken, kabullenici kategorileri arasındaki farkların incelenmesinde Rogers'ın yeniliğin yayılması teorisine başvurulmuştur.

Rogers (1983) difüzyonu (diffusion) "yenilikçi fikirlerin ve yeniliklerin belirli bir iletişim kanalı yoluyla sosyal sistem içindeki insanlar arasında yayılması" olarak

tanımlamaktadır. Yeniliği ise "bir fikrin ya da objenin bir kişi tarafından yeni olarak algılanması" olarak açıklamıştır (Rogers, 1983, p.5).

Yeniliğin yayılması üzerine araştırmalar ilk olarak Alman-Avusturya ve İngiliz antropoloji okullarının çalışmaları ile başlamıştır. Yapılan bu çalışmada, bir toplulukta ortaya çıkan yeniliğin diğer toplumlarda değişikliklere sebep olabileceği ortaya atılmıştır. 1940'larda Fransız sosyolog Gabriel Tarde tarafından yürütülen bir diğer önemli çalışmada; yeniliğin yayılmasını etkileyen pek çok önemli kavram ortaya çıkmıştır. Bunlardan en önemlisi kanaat önderlerinin yeniliğin yayılması sürecindeki etkisidir. Yeniliğin yayılması konusunda yapılan ilk araştırmalar sonucunda, yeni fikirlerin benimsenmesi için günümüzde kullanılan klasik modelin temelleri atılmıştır. Bu modele göre, yayılmanın anahtar unsurları; yenilik, iletişim kanalı, zaman ve sosyal sistemdir. Bu klasik model aslında Rogers'ın yeniliğin yayılması teorisinin temelini oluşturmuştur (Rogers, 1976).

Yeniliğin yayılması teorisinin önemli mimarlarından biri olan Rogers çalışmalarına 1962 yılında başlamıştır. Rogers'a göre yeniliğin benimsenmesinin temel unsurları yeniliğin kendisi, zaman, iletişim kanalı ve sosyal sistemdir. "Yenilik" bir fikrin ya da objenin bir kişi tarafından yeni olarak algılanması, "iletişim kanalı" bireyler arasında mesajların aktarılma ya da iletilme yolu, "zaman" kişinin yeniliği benimsemesine kadar geçen süre, "sosyal sistem" bireylerden, gruplardan ve topluluklardan oluşan yapı olarak tanımlanmıştır (Rogers, 1983).

Rogers, sosyal sistemde yer alan bireylerin yeniliği aynı zamanda benimsemediği fikrini ortaya atmıştır. Bu fikir Rogers'ın kabullenici kategorilerinin temelini oluşturmuştur. Rogers'a göre yeniliğin benimsenme süresi göz önüne alındığında tüketiciler 5 farklı kategoriye ayrılır: Yenilikçiler, Erken Benimseyenler, Erken Çoğunluk, Geç Çoğunluk ve Geride Kalanlar. Rogers'ın bu kategorileri oluşturmasının sebebi ideal tüketici profilinin demografik, sosyoekonomik ve kişilik özellikleri göz önünde bulundurularak oluşturulmasıdır. Rogers kategorilerde yer alan bireylerin kişilikleri ile ilgili bazı çıkarımlar yapmıştır. Buna göre, yenilikçiler "cesur", erken benimseyenler "saygıdeğer", erken çoğunluk "temkinli", geç çoğunluk "şüpheci" ve geride kalanlar "gelenekçi "olarak tanımlanmıştır.

Yeniliklerin benimsenmesi ürün kategorilerine göre farklı zamanlarda benimsenebilmektedir. Bazı yenilikler diğerlerine göre daha hızlı yayılırken, bazılarının benimsenme hızı daha yavaştır. Rogers'a göre bunun sebebi yeniliğin sahip olduğu belli başlı özelliklerdir. Yeniliğin sahip olduğu özellikler ile ilgili Rogers, Tonatzky-Klein ve Moore-Benbasat'ın literatüre önemli katkılar sağlayan değerli çalışmaları olmuştur. Rogers'a göre bireylerin yeniliği benimsemesini etkileyen beş ana özellik bulunmaktadır. Bunlar; göreceli yarar, uygunluk, denenebilirlik, gözlemlenebilirlik ve karmaşıklıktır (Rogers, 1983).

Yeniliğin yayılması teorisi ile birlikte amaca yönelik davranış teorisi de araştırmaya dahil edilmiştir. Amaca yönelik davranış teorisi kişinin bir davranışı gerçekleştirmesini etkileyen faktörlerin incelenmesini kapsar. Perugini ve Bagozzi'nin detaylı çalışması sonucunda ortaya çıkan model aslında davranış teorisinin geliştirilmiş ve kapsamı genişletilmiş halidir. Planlı davranış teorisi davranışa yönelik tutum (attitude) ve davranış (behavior) arasındaki ilişkinin açıklanmasını amaçlamaktadır. Ajzen'e göre, kişinin davranışını altındaki niyeti etkileyen üç temel değişken vardır. Bunlar; davranışa yönelik tutum, algılanan sosyal baskı ya da kişisel normlar (subjective norms) ve algılanan davranış kontrolüdür (perceived behavioral control) (Ajzen, 1991). Bu modelin geliştirilmesi ve geçerliliğinin test edilmesi için pek çok araştırma yapılmıştır. Bunların arasında en güçlü olanı Perugini and Bagozzi'nin amaca yönelik davranış teorisini içeren çaışmasıdır (Leone, Perugini, & Ercolani, 2004). Perugini and Bagozzi kapsamlı bir araştırma sonucu amaca yönelik davranış modelini ortaya atmıştır. Amaca yönelik davranış teorisi planlanlı davranış teorisine yeni faktörler eklenmesiyle kapsamı genişletilmiş halidir (Perugini & Bagozzi, 2001). Modele dahil edilen yeni faktörler, öngörülen pozitif ve negatif duygular (anticipated emotions), davranışın geçmişte gerçekleşme sıklığı (frequency of behavior), davranışın yakın bir geçmişte gerçekleşme sıklığı (recency of behavior) ve davranışsal istektir (desire).

Amaca yönelik davranış modelinde yer alan faktörlerden tutum "bireyin gerçekleştireceği davranış ile ilgili olumlu olumsuz değerlendirmesidir". Kişisel norm bir başka deyişle algılanan sosyal baskı "bireyin davranışı gerçekleştirip

gerçekleştirmeyeceğine dair çevresindeki kişilerden algıladığı baskı ya da onay" olarak tanımlanmıştır. Öngörülen pozitif ve negatif duygular "bireyin herhangi bir davranışı gerçekleştirmesi sonucu hissedeceği duygulardır". Davranışsal niyet "kişinin davranışlarında ve eylemlerinde etkili olan komuttur". Davranışsal istek "kişinin davranışsal niyetini etkileyen motivasyondur". Algılanan davranışsal kontrol "kişinin bir davranışı gerçekleştirmesine yönelik sahip olduğu kontrolü" gösterir. Davranışın geçmişte gerçekleşme sıklığı ve davranışın yakın bir geçmişte gerçekleşme sıklığı da bireyin geçmiş davranışlarını ifade eden modelin iki önemli değişkenidir. Amaca yönelik davranış modelinde bulunan tüm değişkenler araştırma modeline dâhil edilmiştir.

Araştırmanın amacı, çevrimiçi oyunların benimsenmesini etkileyen temel faktörlerin amaca yönelik davranış modeli ve yeniliğin yayılması teorisi kullanılarak araştırılmasıdır. Literatür taraması sonucunda yapılan çalışmaların incelenmesi sonucu, sosyoekonomik faktörlerin (cinsiyet, yaş, eğitim seviyesi ve gelir düzeyi) ve kişisel özelliklerin (kanaat önderliği ve yenilikçilik) de yeniliğin benimsenmesinde etkili olduğu görülmüş ve modele eklenmiştir. Sonuç olarak, yeniliğin özellikleri, amaca yönelik davranış modeli değişkenleri, sosyoekonomik faktörler ve kişisel özellikler çevrimiçi oyunların benimsenmesinde etkisi olabilecek değişkenler olarak belirlenmiş ve araştırma modeline dâhil edilmiştir. Çalışma kapsamında test edilecek hipotezlerin belirlenmesinde, modele dâhil edilen değişkenler, çalışmanın hedefleri ve teorik altyapı esas alınmıştır.

Araştırma kapsamında veri toplamak amacı ile çevrimiçi bir anket çalışması yürütülmüş ve toplam 308 katılımcı ankete katılmıştır. Çevrimiçi araştırmanın seçilmesinin sebebi; cevap alma oranının yüksek olması, verinin hızlı toplanması ve pek çok kişiye aynı anda erişebilme imkânıdır. İnternet üzerinden çevrimiçi forumlar ve sosyal medya kullanılarak farklı çevrelerden toplam 308 kişiye ulaşılmış ve ankete katılımları sağlanmıştır. Araştırma bireylerin yeni oyunları benimsemesini etkileyen faktörleri incelediği için, katılımcıların çevrimiçi oyun oynaması şartı koyulmuştur.

Anket oluşturulurken yeniliğin yayılması ile ilgili yapılan araştırmalar göz önünde bulundurulmuş ve geçerliliği test edilmiş ölçekler kullanılmıştır. Anket demografik faktörlerin elde edilmesi için hazırlanan sorular ile başlamaktadır. Moore ve Benbasat'ın yeniliğin özellikleri ölçeği, King ve Summers'ın kanaat önderleri ölçeği, Perugini ve Bagozzi'nin amaca yönelik davranış modeli ölçeği ankete dâhil edilmiştir.

Araştırma kapsamında hipotezlerin test edilmesi için başvurulan güvenilirlik testi, faktör analizi, betimleyici istatistik metotları ve hiyerarşik regresyon gibi istatistiksel analizler SPSS İstatistik programı kullanılarak yapılmıştır.

Araştırma sonuçlarına göre, katılımcıların %89.6'sı erkek, %10.4'ü kadın iken; yaş aralığı 13-57 arasındadır. Online oyun kullanıcılarının eğitim seviyesi göz önünde bulundurulduğunda %62'sinin üniversite mezunu olduğu saptanmıştır. Elde edilen sonuçlar literatür ile uyumludur. Everquest oyun kullanıcılarıyla yapılan bir araştırmada, oyuncuların %81'i erkek olduğu ve yalnızca %19'u kadın olduğu görülmüştür (Griffiths, Davies, & Chappell, 2004). Elde edilen bulgular erkeklerin kadınlara kıyasla daha çok çevrimiçi oyun oynadığını işaret etmektedir. Özetlemek gerekirse, çevrimiçi oyun kullanıcıları çoğunlukla erkek, genç ve eğitim düzeyi yüksek bireylerden oluşmaktadır. Demografik bilgilerin elde edilmesi sonrasında, katılımcılara en çok oynadıkları oyun çeşidi sorulmuştur. Cevaplara göre, kullanıcıların %69.2'si çok oyunculu birinci şahıs nişancı oyunları (Counter Strike, Battlefield, Halo 5, Quake 4, Battlefield 4 and etc.), %51.6'sı çok oyunculu rol yapma oyunları (World of Warcraft, Elder Scrolls Online, Knight Online, Guild Wars, Final Fantasy and etc.) oynarken %38'i daha çok strateji oyunlarını (Age of Empire, Total War, etc) ve %29.2'si spor oyunlarını (FIFA, PES, NBA, NFL etc.) tercih etmektedir.

Tanımlayıcı istatistiklerin elde edilmesinden sonraki adım ölçeklerin geçerliliğinin ve güvenilirliğinin test edilmesidir. Daha önce bahsedildiği üzere, pek çok ölçeğin bir araya getirilmesi sonucu oluşturulmuştur. Bu sebeple güvenilirlik analizi ve faktör analizinin uygulanması gerekmektedir. Ölçeklerin güvenilirliğinin ölçülmesi için Cronbach alfa değerleri hesaplanmıştır. Ölçeklerin kendi içinde tutarlı olması

için Cronbach alfa değerinin 0.70'den büyük olması beklenmektedir. Güvenilirlik analizi sonrasında ölçeklerin faktör analizine başvurulmuştur. Açıklayıcı faktör analizi, arasında korelasyon olan değişkenlerin aynı faktör altında toplanmasını sağlamaktadır. Buna göre her ölçek için KMO istatistiği ve Bartlett testi değeri hesaplanmıştır. Uygunluk ölçütü olan KMO istatistiği ölçeğin faktör analizi kullanılarak modellenip modellenemeyeceğini göstermekte ve KMO değerinin 0.60'dan yüksek olması beklenmektedir. Bartlett küresellik testi ölçek içerisindeki değişkenlerin arasında korelasyon olup olmadığını ölçer. Buna göre, Bartlett testi değerinin alfa değerinden düşük olması gerekmektedir. Son olarak, her ölçeğin içinde yer alan maddeler tarafından açıklanan varyansına (total variance explained) bakılmıştır. Bu değerin ölçek içerisindeki maddelerin en az 2/3'ünü içermesi beklenmektedir. Sonuç olarak, ölçeklerin analize uygunluğunun test edilmesi için güvenilirlik testi ve faktör analizi uygulanmış, yukarıda bahsedilen değerler hesaplanmıştır. Analiz sonuçlarına göre, gözlemlenebilirlik ölçeğinin Cronbach alfası çok düşük çıkmış ve ek analizler yapılmasına rağmen 0.70'in üzerine çıkması mümkün olmamıştır. Bu sebeple, doğru ve kesin sonuçlar elde edilebilmesi için ileriki analizlere dâhil edilmemesi gerektiğine karar verilmiştir.

Güvenilir ölçeklerin elde edilmesinden sonra sıra yeniliğin özellikleri ile amaca yönelik davranış teorisi değişkenleri arasındaki ilişkinin incelenmesine gelmiş ve lineer regresyon yöntemine başvurulmuştur. Buna göre, amaca yönelik davranış modeli faktörleri bağımlı değişkenler olurken, yeniliğin özellikleri bağımsız değişkenler olarak belirlenmiştir. Toplam 6 regresyon kurulmuş, sonuçları incelenmiştir. Sonuçlara göre, en etkili faktörün denenebilirlik olduğu görülmüştür. Bunun sebebi, öngörülen pozitif duygular haricindeki tüm değişkenler ile anlamlı ilişkisinin bulunmasıdır. Göreceli yararın ise davranışa yönelik tutum, kişisel normlar, öngörülen pozitif ve negatif duygular ile arasında anlamlı ilişki bulunmaktadır. Karmaşıklık ölçeğinin içinde negatif maddeler bulundurması değişkenler ile arasındaki negatif ilişkiyi açıklamaktadır.

Bağımsız değişkenlerin aralarındaki ilişkinin incelenmesinin ardından, çevrimiçi oyunların benimsenmesini etkileyen faktörler incelenmiştir. Bu faktörlerin tespit

edilmesi için hiyerarşik regresyona başvurulmuştur. Hiyerarşik regresyon birçok değişkenin etkisini sıralı olarak gözlemlemek için iyi bir yöntemdir. Hiyerarşik regresyonda, bağımsız değişkenler araştırmacının belirlediği sırada bloklar şeklinde modele girmektedir (Petrocelli, 2003). Bu çalışmada, belirlenen hipotezlerin test edilebilmesi için iki hiyerarşik regresyon modeli kurulmuştur. Öncelikle, demografik faktörler (cinsiyet, yaş, eğitim seviyesi, gelir düzeyi), kişisel özellikler (kanaat önderliği, yenilikçilik), yeniliğin özellikleri (göreceli yarar, uyumluluk, karmaşıklık, denenebilirlik, gözlemlenebilirlik) ve amaca yönelik davranış modeli değişkenleri (davranışa yönelik tutum, öngörülen duygular, geçmiş davranış, kişisel normlar, algılanan davranış kontrolü ve davranışsal istek) bloklar halinde modele eklenmiş ve davranışsal isteğe olan etkileri ölçülmüştür. Sonra, kurulan hiyerarşik modele davranışsal istek bağımsız değişken olarak dâhil edilerek tüm değişkenlerin davranışsal niyet üzerindeki etkisi ölçülmüştür. Analiz sonuçların göre, değişkenler toplam varyansın %64'ünü açıklamaktadır. %5 anlamlılık düzeyinde, kanaat önderliği ve öngörülen pozitif duygular ile davranışsal istek arasında anlamlı bir ilişki vardır. %10 anlamlılık düzeyinde ise denenebilirlik ve yaşın yeni çevrimiçi oyunu benimsenmesi isteği üzerinde önemli etkisi olduğu gözlenmiştir. Yapılan araştırmalar ile desteklendiği üzere, kanaat önderleri yeni çevrimiçi oyunları diğer insanlara kıyasla daha hızlı benimsemektedir. Sonuçlar denenebilirlik ve duyguların önemini vurgulamaktadır. Kişinin yeni çevrimiçi oyunu satın alma niyetini etkileyen faktörleri incelemek amacıyla tekrar regresyon analizine başvurulmuş, bu sefer davranışsal istek modele bağımsız değişken olarak eklenmiştir. Elde edilen sonuçlara göre, değişkenler toplam varyansın %64.1'ini açıklamıştır. Yeni bir çevrimiçi oyunun benimsenmesini pozitif olarak etkileyen faktörler; yaş, yenilikçilik, öngörülen pozitif duygular, uyumluluk, denenebilirlik ve davranışsal istek olarak saptanmıştır. Davranışsal istek, yeni çevrimiçi oyunun satın alma ve oynama niyeti etkileyen en önemli faktördür. Bu durum, amaca yönelik davranış teorisini destekler niteliktedir.

Araştırmanın amaçlarından biri de kabullenici kategorilerinin arasındaki farklılıkların araştırılmasıdır. Daha önce de bahsedildiği üzere Rogers'ın yeniliğin yayılması

teorisine göre beş temel kategori bulunmaktadır; yenilikçiler, erken benimseyenler, erken çoğunluk, geç çoğunluk ve geride kalanlar. Farklılıkların gözlemlenebilmesi için öncelikle katılımcıların kategorilere ayrılması gerekmektedir. Bu bağlamda kategorilerin belirlenebilmesi için ankete soru eklenmiştir. Soruya verilen yanıtlar katılımcıların hangi kategoriye girdiklerini belirlemiştir. Sonuçlara göre, ankete katılanların %8.1'i yenilikçi, %9.7'si erken benimseyen, %54.2'si erken çoğunluk, %13.6 geç çoğunluk ve geriye kalan %14.3'ü geride kalanlar kategorisine girmiştir. Soruya verilen cevaplar ışığında her kategori analiz öncesi SPSS programı yardımıyla seçilmiş, analizler tüm kategoriler için ayrı ayrı uygulanmıştır. Her bir kategori için hiyerarşik regresyon kurulmuş, sonuçları incelenmiş ve önemli farklılıklar gözlenmiştir.

Yenilikçi kategorisi yeni bir çevrimiçi oyun çıktığında ilk satın alıp oynayan bireylerden oluşmaktadır. Yenilikçiler için uygulanan hiyerarşik regresyon sonucu, gelir düzeyi, eğitim seviyesi, öngörülen pozitif duygular ve geçmiş davranışın davranışsal istek üzerinde anlamlı etkisi olduğu ortaya çıkmıştır. Çevrimiçi oyunların fiyatlarının pahalı olması, gelir düzeyinin oyunların benimsenmesi üzerindeki pozitif etkisini açıklamaktadır. Buna göre, gelir düzeyi arttıkça kategoride yer alan oyuncuların yeni oyunları daha hızlı satın alması ve oynaması beklenmektedir. Eğitim seviyesi ile davranışsal niyet arasındaki olumlu ilişki de elde edilen önemli çıktılar arasındadır.

Erken benimseyen kategorisi yenilikçilerden sonra yeni çevrimiçi oyunları hızlı benimseyen oyunculardan oluşmaktadır. Bu kategori için hiyerarşik regresyon sonuçları incelendiğinde, yenilikçiliğin etkisi göze çarpmaktadır. Kişilerin yenilikçi olması, çevrimiçi oyunların benimsenmesi de artmaktadır. Buna ek olarak, çevrimiçi oyun oynamanın bireyin hayatına, yaşam tarzına ve koşullarına uyumlu olması da önem teşkil etmektedir. Yeni çevrimiçi oyun kişinin hayat tarzına ne kadar uyumluysa, kişinin yeni oyunları satın alıp oynaması da bir o kadar kolay ve hızlı olacaktır.

Erken çoğunluk katılımcıların %54.2'sini kapsadığı için, elde edilen sonuçlar genel çıktılarla uyumludur. Bu kategori, yeni oyunları satın almadan önce bir süre

bekleyerek çevresindekileri gözlemleyen bireylerden oluşur. Analiz sonuçlarına göre, yaş, uyumluluk, denenebilirlik ve öngörülen pozitif duyguların çevrimiçi oyunların erken çoğunluk tarafından benimsenmesi üzerinde etkisi vardır. Bu kategorideki kişiler satın aldıkları ya da oynamaya başladıkları oyunun hayat tarzlarına uyumlu olmasını istemektedirler. Buna ek olarak, aldıkları oyunun oynamaya değer olmasını ummaktadırlar. Oyun oynarken eğlenmek, güzel vakit geçirmek diğer kategorilerde olduğu gibi erken çoğunluk için de önemlidir. Oyunu satın almadan ya da oynamaya başlamadan önce denenmesi de yeni oyunları benimsenmesi için önemlidir.

Geç çoğunluk kategorisindeki bireyler, genellikle yeni bir çevrimiçi oyun çıktığında arkadaşları arasında en geç satın alanlar arasındadır. Diğer gruplardan farklı olarak bu gruptaki insanların geçmişteki davranışları ile yeni çevrimiçi oyunun benimsenmesi arasında negatif bir ilişki vardır. Başka bir deyişle, geçtiğimiz 6 ay içerisinde sıklıkla çevrimiçi oyun oynanması, bireyin yeni bir oyun satın alıp oynamasını olumsuz etkilemektedir. Buna ek olarak, cinsiyetin de olumsuz etkisi olduğu görülmüştür. Bunun sebebi, daha önce de ifade edildiği gibi erkeklerin kadınlara oranla daha az çevrimiçi oyun oynamalarıdır. Sonuçlar, kadınların genellikle geç çoğunluk içerisinde yer aldığı şeklinde yorumlanabilir.

Son olarak, geride kalanlar kategorisinin sonuçları incelenmiştir. Yeni çevrimiçi oyunu en geç satın alan grubun içinde yer alan bu bireyler için de duyguların önemi ortaya çıkmıştır. Yeni çıkan çevrimiçi bir oyunun eğlenceli, heyecanlı, zevkli olması ve beklentilerini karşılaması oyunu satın almalarını olumlu etkilemektedir.

Elde edilen sonuçlar, duyguların çevrimiçi oyunların benimsenmesindeki önemini ortaya koymuştur. Bireylerin oyun oynarken olumlu bir deneyim yaşamak istedikleri görülmüştür. Buna ek olarak, kullanıcılar yeni oyunun oynamaya ve satın almaya değer olduğundan emin olmak istemektedirler. Katılımcılar oyunu satın almadan önce denemenin önemli bir fırsat olacağını düşünmektedirler. Bu durum, oyunların satın alım öncesi denenebilir olmasının önemini bir kez daha vurgulamıştır.

Bu araştırma Türkiye'de ikamet eden çevrimiçi oyun kullanıcıları ile sınırlıdır. Araştırma örneklemi belirlenirken olasılıksız örnekleme yöntemi olan amaçlı

örneklem metoduna başvurulmuştur. Kişilerin ankete katılabilmesi için çevrimiçi oyun oynuyor olmaları şartı koşulmuştur. Bu sebeple örneklem seçiminden kaynaklanan hatalar görülebilmektedir. Yapılan anket çalışması internet aracığıyla sosyal medya ve çevrimiçi forumlar kullanılarak yayınlanmıştır. Katılımcılar internet üzerinden ankete katılmışlardır. Çevrimiçi anket çalışması pek çok kişiye hızlı ve kolay ulaşılmasını sağlayan bir yöntem olsa da, sosyal medya ve çevrimiçi forum kullanıcısı olmayan oyunculara ulaşılamamıştır. Araştırmaya katılan kullanıcıların benzer özelliklere sahip bireyler olması sonuçlarda hataya sebep olabilmektedir.

Bu araştırma Türkiye ile sınırlı olup, yalnızca Türkiye'de ikamet eden oyun kullanıcılarını içermiştir. Gelecekte bu konu üzerinde çalışabilecek olan araştırmacılar, farklı ülkelerden veri toplayıp karşılaştırmalar yaparak literatüre önemli katkılarda bulunabilirler.

Elde edilen bulgular ışığında oyun üreticilerine bazı önerilerde bulunulmuştur. Online oyunların popülerliğini gün geçtikçe arttırması, oyun üreticileri arasındaki rekabetin de kızışmasına sebep olmuştur. Şirketler değerli kaynaklarını ve zamanlarını müşteri kazanmak amacıyla etkili yollar bulmak için harcamaktadırlar. Bunun için şirketlerin öncelikli olarak odaklanmaları gereken hedef kitlenin tespit edilmesidir. Rogers'ın kabullenici kategorileri göz önünde bulundurulduğunda, üreticilerin en çok, geç çoğunluk ve geride kalanlar kategorisindeki tüketicilere odaklanılması gerektiği ortaya çıkmaktadır. Bunun sebebi, bu kullanıcıların yeni bir çevrimiçi oyunu satın alıp oynama hızlarının düşük ve yavaş olmasıdır. Öncelikle, bu kullanıcıların geç benimseme sebeplerinin araştırılması ve sorunların tespit edilmesi önemlidir. Kategoride yer alan kullanıcıların oyun tercihleri ve beklentilerinin belirlenmesi sonucu yeni oyunların geliştirilmesi müşteri kazanılmasına yardımcı olacaktır. Aynı anda pek çok kişiye ulaşılmasını sağlayan reklamların tüketiciler üzerinde önemli bir gücü vardır. Bu sebeple, şirketler tarafından yapılacak etkili reklamların internette, televizyonda ve bilbordlarda yayınlanması sonucu bu kategorilerdeki kişilere ulaşılması mümkündür.

Müşteri kazanmanın yanında hali hazırdaki müşteri kitlesinin elinde tutulması ve müşteri kaybının önlemesi de şirketler için büyük önem teşkil etmektedir. Müşteri

kaybı pek çok şirketin zaman zaman yaşayabildiği sıkıntılı bir durumdur. Kotler ve Keller'a göre, yeni müşteri kazanılması, müşterilerin elde tutulmasından 5 kat daha maliyetlidir (Kotler & Keller, 2009). Online oyun üreticileri göz önünde bulundurulduğunda odaklanılması gereken kategoriler yenilikçiler, erken benimseyenler ve erken çoğunluktur. Bu kategorilerde bulunan bireyler sadık ve devamlı müşteriler olarak kabul edilebilir. Şirketler bu müşteri kitlesini kaybetmemek amacıyla pek çok yönteme başvurabilirler. Bu yöntemlerden etkili olanları arasında promosyon yapmak, özel etkinlikler düzenlemek ve özel indirimler uygulamak sayılabilir.

Çalışmanın en önemli çıktılarından biri oyunların denenebilir olmasının kullanıcılar açısından önemidir. Kullanıcılar, satın aldıkları yeni oyunun oynamaya değer olduğuna emin olmak istemektedirler. Bu nedene satın almadan önce oyunu denemek ve gözlemlemek onlar için önemlidir. Yapılan analizler, denenebilirliğin oyunların benimsenmesi üzerindeki olumlu etkisini göstermiştir. Bu sebeple, şirketlerin oyun piyasaya sürülmeden önce deneme versiyonlarını çıkarmaları kullanıcıların ilgisini çekecektir. Deneme sürümü, kullanıcıların oyunun özelliklerini, görsellerini, görüntü kalitesini gözlemlemesine ve iyi bir tecrübe edinmesine olanak sağlayacaktır. Deneme versiyonunu oynayan ve memnun kalan kullanıcıların bu oyunu satın alma olasılıkları artacaktır.

Bu çalışma, tüketici yenilikçiliği ile ilgili literatüre ve çevrimiçi oyun pazarlamacıların stratejik yaklaşımlarına katkıda bulunmayı amaçlamaktadır.

D. TEZ FOTOKOPİSİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü	
Sosyal Bilimler Enstitüsü	X
Uygulamalı Matematik Enstitüsü	
Enformatik Enstitüsü	
Deniz Bilimleri Enstitüsü	

YAZARIN

Soyadı : BAYBAŞ

Adı : GÜLNUR

Bölümü : İŞLETME

TEZİN ADI (İngilizce): Understanding Consumer Innovativeness via Theor of Goal Directed Behavior: An Investigation of Factors Affecting Adoption of Online Games

TEZİN TÜRÜ : Yüksek Lisans [X] Doktora [ ]

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir. [X]
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir. [ ]
3. Tezimden bir bir (1) yıl süreyle fotokopi alınamaz. [ ]

TEZİN KÜTÜPHANEYE TESLİM TARİHİ: