Extrinsic and Intrinsic Motivations Affecting Information Systems Continuance Intention in Mobile Applications with Gamified Features

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Abstract

This paper examines individuals' psychological motivations that affect one's intention to continue using information systems. Information systems continuance model establishes the theoretical basis for this study and gamified mobile applications have been used as the type of information systems. This research draws attention to several different extrinsic and intrinsic motivational factors that influence post-adoption behavior of individuals using mobile applications with gamified features. Literature review in this study states the concepts related to post-adoption in a gamified mobile application context and as result, four different motivators have been found which are predicted to influence them. These are; Rewards and Reputation as extrinsic motivators, Social Presence and Perceived Enjoyment as intrinsic motivators. Further research will be conducted in the future to formulate hypotheses related to the constructs explained in this study and the role of extrinsic and intrinsic motivators will be investigated empirically to gain a better understanding in this respect.

Keywords: Extrinsic motivations, intrinsic motivations, information systems continuance, mobile applications, gamification.

JEL classification: M15.

1. Introduction

The growth of mobile industry is prominent and it is noted that in accessing social platforms, mobile internet takes the lead by 91%, compared to computer based internet consumption 79% (Sukaini et al., 2015). In this rapidly growing industry, companies face serious problems of low profits depending on not just low levels of technology adoption by users but also because of high rates of discontinuation. To survive in this environment, striving to achieve long-term relationships with existing users is crucial, in terms of profitability, since loyalty among users lead to more intensive usage as well as decreased costs related to customer retention (Kim, 2010).

The determinants of technology adoption have been a topic which has been researched thoroughly in the past and technology acceptance model (TAM), theory of reasoned action (TRA) and theory of planned behavior (TPB) have been the basis for these studies. Moreover, not just adoption of a technology but also IS continuance of individuals play a distinctive role for firms such as internet service providers, online retailers and online banks which aim to survive and to understand the difference between initial adoption and continuance, it is important to determine individuals' psychological motivation effects that become apparent after initial adoption (Hong et al., 2008).

In recent available literature, several studies have identified different intrinsic and extrinsic motivators for individuals' adoption of mobile technologies, however there exists some gaps in research related to motivations for individuals' post adoption behaviors in gamified mobile technologies. This research aims to fill this gap by investigating empirically the role of intrinsic and extrinsic motivations in continued use of a mobile technology in a gamified set up.

The remainder of the study will be as follows. First, related work about gamification, information systems (IS) continuance and motivational factors will be reviewed. Then the literature of motivational theories and (IS) continuance model will be presented and concluding remarks will be stated.

2. Literature Review
2.1 Gamification

The concept of "gamification" has been introduced to our lives not many years ago, however we can't say that we were absolutely unfamiliar with elements of gamification, since we are used to many examples of them in the past. Newspaper and magazine coupons, military badges, marketing loyalty programs with credit points etc. have all been in our lives for many decades. Advancements in digital technologies and introduction of new online platforms have revealed new business opportunities in which gamification can be embedded. By bundling game design elements with complex, IT focused and ever-present services, gamification has established an innovation that enhances the core-offer by offering cognitive, emotional and socially satisfying experiences (Blohm and Leimeister, 2013).

Gamification as the term implies, is similar to games however there is a clear difference between them; gamification is not quite creating a game but transferring some of the positive characteristics of a game to something that is not a game, thus it is called gami-"fy"-ing (Kim, 2015b). It adopts similar motivational techniques that video game designers use to motivate their players, but implements them in a non-game context. Businesses should leverage it to learn a lot from games since they are very powerful in engaging people (Paharia, 2013).

There are many recent examples in which gamification is used to engage users of a certain website or a mobile application. One of these examples is NikeFuel and the Nike+ running app. Users of the Nike+ running app and individuals that own Nike sports shoes, track their athletic performance and gain Nike fuel as they practice. In Nike+ app, users compete with each other, see each others' Nike fuel, track their weekly and monthly athletic progress, earn trophies when they reach milestones, see their rankings among friends and even send challenges to each other. They are also motivated to share their achievements through social media and congratulate each other. Another example of a successful gamification strategy, is a mobile application called Swarm, formerly known as Foursquare. Visiting places and checking in at different locations are the core activities of this mobile application and users are encouraged to check in more, leave comments and browse more to see where their friends went, by earning points and badges. Gamification in Foursquare mobile application even sometimes helped users to earn an offline, tangible reward; active users were able to become the "mayor" of a certain place and they were even able to earn a food or a drink sometimes. Other successful gamified companies include popular web services such as Facebook, Twitter and Ebay which incorporate game elements to increase customer engagement and motivation in their websites and mobile apps. Moreover there is also an increasing trend of online retailers' exploration of the application of game techniques to create reward mechanisms and promote online shopping as an entertainment activity (Insley and Nunan, 2014).

As in the examples of Nike+ and Swarm, companies are leveraging gamification as a strategy to motivate and engage their consumers with interesting game-like mechanisms and incentives for certain reasons such as; promotion, marketing, engagement, and customer loyalty (Kim, 2015b) and it is recommended that companies should embrace and use this powerful tool in their loyalty programs (Paharia, 2013). Because of its benefits, it has already become a major trend and the addition of gamification elements in products and services is increasing rapidly. Gamification has many definitions in the literature; for instance Deterding et al. (2011) defines gamification as; "the use of game elements and game design techniques in a non-game context". Kapp (2012) defines it as; the delivery of content—for a purpose other than pure entertainment— using game-based thinking and mechanics. On the other hand; Dominguez et al. (2012) defines gamification as incorporating game elements into a non-gaming software application to increase user experience and engagement and Swan (2012) gives a general

definition of gamification as "the process of adding game mechanics to processes, programs and platforms that wouldn't traditionally use such concepts."

Even though some people think that gamification is a very old concept, this statement ignores a significant backdrop of gamification, which includes three important aspects: (1) the rapid adoption of the smartphone, (2) the incredible growth of the mobile web, and (3) the increased use of social media (Kim, 2015b). Increased usage of smartphones and social media as well as improved data services resulted in users adopting gamification elements very quickly and getting used to them very easily. Individuals' positive perceptions of gamified mobile applications and their good reactions to new game-like features made marketers realize an important opportunity for their businesses. The excitement about gamification among them is triggered by the observation that games tend to engage people in a positive way, and that this engagement is maintained over a period of time which can also lead to positive results (Insley and Nunan, 2014).

As Blohm and Leimeister (2013) indicate; gamification depicts behavioral change to positive emotional feedback and in doing so, it enables the introduction of new behavior patterns as well as the modification of habitual behavior. Breaking unwanted habits of customers is made possible with gamified features as well as encouraging them to develop new and beneficial behaviors. Gamification leverages the way humans are genetically designed to store things, to desire social status and socialize, to compete and collaborate and these are some of the reasons why it's a powerful tool. Moreover, it is a new approach to non-game conditions and up to today it has been proven to be very effective in an incredibly large number of cases (Salcu and Acatrinei, 2013).

IT-based gamified enhancing services are found to motivate individuals to complete certain tasks and these tasks are indicated as; creating optimism; which results from the sense of achievement and experiencing success and positive emotions, increased user satisfaction; which is a consequence of users' visualization of their own progress and feelings of high individual performance, facilitating social interaction; by being part of a community with similar aims, supporting the learning process; as a result of improving skills by accomplishing certain subtasks of gamification with trial and error and repeating them until the problem is solved and going even further with increased difficulty levels and laslty enabled problem solving; by reaching better rankings and going beyond personal possibilities (Harman et al., 2014).

Gamification enhanced core services by adding additional features and let businesses offer their customers a brand new experience. It is stated that gamification supports and enables the transformation of organizational value creation processes and it's most frequently used in marketing to increase customer loyalty and brand image (Blohm and Leimeister, 2013). Other goals of gamification include; increasing engagement levels, changing behaviors and stimulating innovation. Moreover, the opportunities for businesses are great – from having more engaged customers, to crowdsourcing innovation and even improving employee performance when it is used in employee programs (Salcu and Acatrinei, 2013).

Gamification needs to be considered carefully and it should be developed and implemented in a way that satisfies the motivations of the target group and its purpose aligns with core business strategies. When designing a gamified application, embedding game dynamics and mechanics that appeal to the target group and providing the type of rewards that are attractive to the motivation of the majority of them is expected to significantly improve the appeal of the gamification (Kim, 2015a). When designing the gamification elements, it is important to remember that gamification itself does not automatically generate motivation or engagement. For any gamification to be successful, it requires people's buy-in because they should value it enough to play continuously and for this reason the more the goal of gamification is consistent

with the goal of a player, the more it can be expected that the gamifica-tion will be successful (Kim, 2015a).

For a company to leverage gamification and improve its profitability by engaging their customers and motivate them for continued use, it is crucial to establish gamified features in the right way. Even though many companies are trying to exploit this new opportunity, if it's implemented insufficiently, they might depart from the core offer and consequently there might be a decrease in customer satisfaction as well as profits. Many gamified applications have failed due to lack of an effective design and fine-tuning. Therefore in designing gamified platforms, it is important to focus on the right motivational factors that will lead to an increase in satisfaction and foster (IS) continuance by individuals.

2.2 Information Systems Continuance

Mobile services involve various unique characteristics and mobile application providers are facing problematic issues related to inability to maintain a high rate of continuation by its users and as a result their businesses suffer due to low profits. Striving to build long-term relationships with existing users is of great significance since gaining new customers always requires more effort than retaining the users that companies already have. For example Thong et al., (2006) indicate that long-term user relationships has a critical role in increasing profits, not only because loyal users are likely to use the service more intensively and continuously, but also because they are less costly to be maintained. Moreover it is indicated that in the information system (IS) and marketing domains, the eventual success of a product or service depends on continuance usage rather than initial acceptance (Venkatesh and Davis, 2000), as continuance behavior keeps existing users from discontinuance (Bhattacherjee, 2001).

Since maintaining existing users are found to be crucial, body of research related to (IS) continuance is increasing, however initial studies viewed continuance as an extension of adoption and they didn't take into account the post-adoption factors and for this reason they were not able to explain why people discontinued after initial acceptance (Jin et al., 2010).

Even though the initial step of acceptance is a prerequisite for achieving (IS) success, continued use is a must for maintaining that success in the long term. One of the key theories to explain continued (IS) usage is a post-acceptance model proposed by Bhattacherjee (2001) which draws on ECT which is Expectation-Confirmation Theory developed by Oliver (1980). ECT is used in marketing research to understand customer satisfaction and their post-purchase behaviors (Venkatesh et al., 2011). ECT suggests that a user's intention to continue using an IT depends on the extent of the user's satisfaction with the IT, confirmation of the user's expectations and the user's perceived usefulness. According to ECT, consumers form an initial expectation when they encounter with a product or a service, then after they purchase it and use it for a while, they form a perception about the product or service depending on its performance. The next stage is confirmation where they evaluate their initial expectations and perceived performance and compare them to understand the extent to which their expectations are met. According to the degree of their confirmation level, they move on to the satisfaction stage in which their intention to repurchase that product or service is determined.

Bhattacherjee (2001) stated that (IS) continuance and consumer repurchasing are actually portraying similar decisions however (IS) continuance differs from Expectation-Confirmation Theory since it focuses only on the variables that are related to post-acceptance. Bhattacherjee's (2001) study provided a new theoretical framework by converting the initial ECT into an expectation-confirmation model of (IS) continuance. In this model, there are four different variables as shown in Figure 1. These are; perceived usefulness, confirmation, satisfaction and (IS) continuance intention.
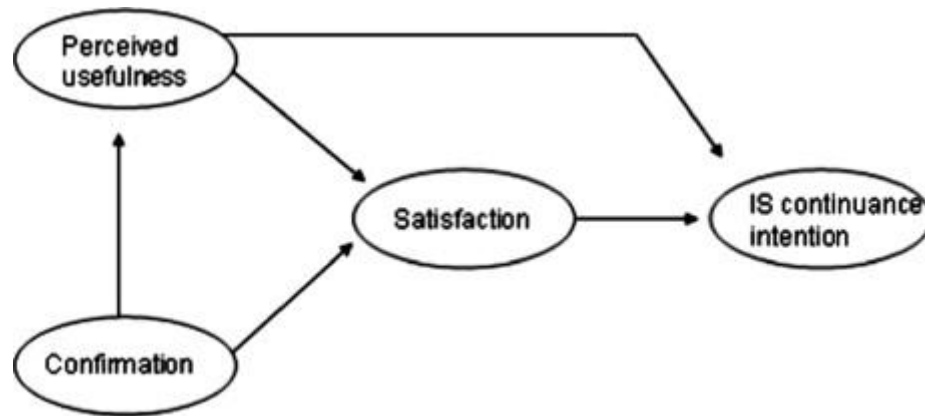
www.etimm.ase.ro

Figure 1. A Post-Acceptance Model of IS Continuance
Source: Bhattacherjee, 2001, p.356

This model intends to explain post-adoption behaviors of individuals and their intention to continue or discontinue using an information system. After individuals accept and use a technology, they form an idea about whether their initial expectations are met or not in the confirmation stage. At the same time they also form a perception about usefulness of the technology. These two variables; the level of confirmation and perceived usefulness form the basis for the user's satisfaction with the certain information system and in the final stage perceived usefulness and satisfaction determine the degree of (IS) continuance intention of the individual.

2.3 Motivations
Motivation is indicated to have two distinct categories: extrinsic and intrinsic. Extrinsic motivation has an aim to reach external goals such as financial compensation, however intrinsic motivation is directly embedded in a given task (Blohm and Leimeister, 2013). When an individual makes an action out of extrinsic motivation, her/his goal in doing that action is not the action itself but something else. On the other hand, when the action itself is the goal of the action, it is related to intrinsic motivation why an individual goes on with that action (Kim, 2015a) In this study, rewards and reputation as types of extrinsic motivations and social presence and perceived enjoyment as types of intrinsic motivation will be analyzed.

2.3.1 Extrinsic Motivations
2.3.1.1. Rewards
Game mechanics include diverse elements for gamifying a core offer by embedding reward systems like points or badges and many current frequent flyer programs utilize similar elements such as credit point systems (ex. miles) or status levels (ex. frequent flyer status) (Blohm and Leimeister, 2013). There are also some online fashion retailers such as Asos who gamifies the online shopping experience for their customers by offering contests and competitions to win prizes as well as leaderboards to gain exclusive entrance to flash sales (Insley and Nunan, 2014). These are offered to motivate them to participate in interactive contests as well as to encourage them to continue shopping more. Rewards in the shape of monetary incentives or exclusive deals are expected to satisfy the desire of the individual for winning and feeling valued as well as being recognized by the company as a customer.

Rewards in gamified mobile applications are not meant to be based on the false sense of achievement, instead they should create value and natural involvement since the aim of the platform is to form an engagement medium that would engage the individuals to use its content

more (Kalinauskas, 2014). Users tend to be interested about statistics, value feedback and they also like to gain virtual rewards for doing what they do (Salcu and Acatrinei, 2013). With the aim of engagement, reward mechanisms as an extrinsic motivational factor, are expected to keep individuals being excited about the gamified platform, increase their satisfaction level and ensure their continued use.

2.3.1.2 Reputation
One of the unique aspects of gamification is the implementation of reputation systems into the core service. Reputation systems are built to recognize accomplishments of the users and to act as indicators of status in a community. By keeping track of users' activity, it is possible for mobile application providers to see who the top contributors are and share this information with the rest of the users in a systematic way, such as a leaderboard, status titles etc. For instance, Amazon offers several badges like ""#1 Reviewer", "Top 1000 reviewer" to users who give reviews regularly and "Real Name" title for users who give accurate information in their online reviews (Insley and Nunan, 2014).

Individuals like competition against other people in a community while they also cooperate and socialize with them (Salcu and Acatrinei, 2013). Game mechanics include diverse elements such as scoreboards or rankings and these influence competitive dynamics that relate user activities to a reference group and are expected to satisfy the desire for social recognition (Blohm and Leimeister, 2013). They enjoy trying to achieve a better performance and increase their rankings to gain more reputation among others in a community. Reputation is an important extrinsic motivator that is expected to foster quality user engagement and to encourage individuals to participate continuously.

2.3.2 Intrinsic Motivations
2.3.2.1 Social Presence
Social presence theory was first introduced by Short et al., (1976) and it was defined as "the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships." Gamified mobile applications establish online communities that enable the facilitation of competition as well as social interaction with peers. Social presence is an intrinsic motivational factor that involves social interaction with friends and others in a community (Sukaini et al., 2015).

Social presence is a need that users have in technology based communication environments to perceive each other as real people (Kear et al., 2014). Even though the communication is mediated through a technological platform, users still desire to feel that they are interacting with real people, not just computerized profiles. It is found that users' engagement levels may drop and users might even withdraw from an online environment if they can't satisfy their need for social presence (Wegerif, 1998). Therefore social presence is expected to affect users' satisfaction levels or their continuance intention.

2.3.2.2 Perceived Enjoyment
Perceived enjoyment is identified as an intrinsic motivation which is related to the pleasure of doing an activity itself and satisfying the inner self while doing it. It is defined by Davis et al., (1992) as; apart from any expected performance results, the extent to which using the system is perceived as enjoyable. Moreover in their study, Davis et al., (1992) added perceived enjoyment to the original model and found that individuals' intentions to use computers in the workplace was influenced mainly by the technology's perceived usefulness and secondarily by the level of enjoyment the individuals experienced while using the computers.

Perceived enjoyment is considered as an important factor in the literature affecting consumer behaviors in the technology context and it can also be expected that it might play a significant role in users' satisfaction with a gamified mobile application and their continued use.

3. Discussion

Users tend to download many mobile applications, however due to various reasons they quit using most of them which is a major challenge for mobile technology companies to overcome. To be able to survive in the ecosystem and increase their profitability, mobile companies need to find ways to engage their customers and ensure their continued use. Gamification is one of the techniques that mobile technology companies use to achieve this goal, however many of them fail, due to ineffective execution and incorrect design. Therefore during these processes, it is important to focus on the right motivational factors that will lead to an increase in satisfaction and foster (IS) continuance by individuals and for this reason it is very beneficial to explore and understand which extrinsic and intrinsic motivations are more important to increase continued use.

In this study, the aim was to review the literature on gamification, Information Systems Continuance model and identify several different extrinsic and intrinsic motivational factors that might be affecting individuals' post-adoption behaviors. As a result of this research, four different motivational factors have been introduced and explained in detail. These are; rewards and reputation as extrinsic motivators, social presence and perceived enjoyment as intrinsic motivators.

This study is of value and importance as a basis for further research in understanding motivational factors affecting post-adoption behaviors of gamified mobile application users. Future research is advised to be conducted to formulate hypotheses related to the constructs explained in this study and investigating empirically the role of motivators is expected to lead to a better understanding in this respect.

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