Bachelor's thesis

Degree programme in International Business

General Management

2014

Niko Kananen

# SUCCESS OF IN-GAME PURCHASES IN FREE-TO-PLAY MOBILE GAMING



#### BACHELOR'S THESIS | ABSTRACT TURKU UNIVERSITY OF APPLIED SCIENCES

Degree Programme in International Business | General Management

2014 48+13

Ajaya Joshi

## Niko Kananen

## SUCCESS OF IN-GAME PURCHASES IN FREE-TO-PLAY MOBILE GAMING

Big leaps have taken place in the field of information and communication technology during the past decades. We have seen the progressive movement from the first generation cellular phones and the development of the Internet to the booming era of the mobile devices that we are currently experiencing. Such a tremendous development has also provided an opportunity for a steady increase in sales for mobile application developers. During the past few years the implementation of In-Application Purchases in mobile applications has been increasing in its popularity. One of the biggest influencers behind this trend is the growth in the amount of free-download applications

The objective of this research was to study the success of in-game sales in applications that have utilized the free-to-play revenue model. The study approached the success of in-game sales from the perspective of consumer behavior. First step was to research the reasons of the high user numbers in free-to-play titles. Second step was to study the drivers in user's characteristics that lead into in-game purchases

The study followed the research approach of deduction utilizing primary and secondary literature. Mixed-method research was applied to the study by using qualitative and quantitative data collection techniques and analysis procedures. Primary data was collected by utilizing a self-administrated internet-mediated questionnaire. A total of 136 respondents filled the questionnaire. The conclusion of this thesis was created by comparing questionnaire results to the literature review.

There are clear indications that the stages of information search, trust building and evaluation alternatives of buyer's decision making process in an application store support the choice of free-to-play games over the ones utilizing other revenue models. Furthermore, operant conditioning in mobile games plays an important role in in-game purchases by supporting the decision to skip a part of a designed game loop. Also utilitarian reference group influence has an effect on in-application purchases. The same applies with value-expressive reference group influence but now with the same magnitude.

#### **KEYWORDS:**

Mobile games ,in-game purcahses, free-to-play, revenue models, consumer behavior

#### OPINNÄYTETYÖ (AMK) | TIIVISTELMÄ TURUN AMMATTIKORKEAKOULU

Degree programme in International Business| General Management

2014 | 48+13

Ajaya Joshi

## Niko Kananen

## PELIEN SISÄISTEN OSTOSTEN MENESTYS FREE-TO-PLAY MOBIILI PELEISSÄ

Suuria askeleita on otettua viimeisempien vuosikymmenien aikana informaatio ja kommunikaatio teknologiassa. Olemme nopeasti kehittyneet ensimmäisten matkapuhelimien ja internetin ensi askelten aikakaudelta ajanjaksoon, jossa älypuhelimet ovat osa jokapäiväistä elämäämme. Tämän on myös luonut mahdollisuuksia mobiililaitteiden sovellusten kehittäjille ja niiden kasvavalle myynnille. Mobiilisovelluksissa sisäiset ostokset ovat kasvattaneet suosiotaan. Yksi suurimmista vaikuttavista tekijöistä tähän on ilmaiseksi ladattavien sovellusten määrän nouseminen.

Tämän opinnäytetyön tavoite oli tutkia mobiilipelien sisäisten ostosten suosiota pelisovelluksissa, jotka ovat ottaneet käyttöönsä free-to-play tuottomallin. Opinnäytetyö lähestyi mobiilipelien sisäisten ostosten menestystä kuluttajakäyttäytymisen näkökulmasta. Tutkimuksen ensimmäinen vaihe oli selvittää mistä johtuvat suuret käyttäjä määrät free-to-play peleissä. Toisen vaiheen päämäärä oli selvittää mikä sovellusten käyttäjien psykologisessa ja sosiaalisessa ominaisuuksissa johti sovellusten sisäisiin ostoksiin.

Opinnäytetyön suorittamiseksi vaadittu tieto kerättiin käyttämällä nettipohjaista kyselyä. Kyselyyn vastasi yhteensä 136 henkilöä. Opinnäytetyön tulokset saatiin vertailemalla kyselyn tuloksia kirjallisuusosioon.

On nähtävissä selviä merkkejä, että informaation keräysvaihe, luottamuksen vahvistaminen ja vaihtoehtojen vertailuvaihe osana ostopäätös prosessia sovelluskaupoissa kannustavat free-to-play pelien valitsemista muiden pelien sijasta. Lisäksi välineellisellä ehdollistamisella on merkittävä rooli kuluttajien päätöksissä tehdä sovellustensisäisiä ostoksia. Sama vaikutus on myös utilitaarisella sosiaalisella vertaisryhmällä.

Click here to enter text.

#### ASIASANAT:

Mobiilipelit, free-to-play, kuluttajakäyttäytyminen

## **CONTENT**

LIST OF ABBREVIATIONS (OR) SYMBOLS	7
1 INTRODUCTION	6
1.1 Background	6
1.2 Research objectives	8
1.3 Research questions	8
1.4 Structure of the thesis	9
2 OVERVIEW OF GAMING REVENUE MODELS	10
2.1 Background of gaming revenue models	10
2.1.1 Simple transaction	10
2.1.2 Adaptation of subscription model	10
2.1.3 Microtransactions	11
2.1.4 Applicability on gaming applications	11
2.2 Suitable revenue model	12
2.2.1 Premium	13
2.2.2 Subscription	13
2.2.3 Free to play	14
3 CONSUMER BEHAVIOR	17
3.1 Definition	18
3.2 Black box model	19
3.3 The buyer's decision process model	20
3.3.1 Information search	20
3.3.2 Trust building stage	21
3.3.3 Evaluation of alternatives	21
3.4 Buyer's characteristics	22
3.5 Learning	22
3.5.1 Behavioral learning	22
3.5.2 Operant conditioning in mobile gaming	23
3.6 Social characteristics	25
3.6.1 Reference group	25
3.6.2 Types of reference group influence	25
3.6.3 Reference groups in mobile gaming	26
4 METHODOLOGY	27
4.1 Approach	27

4.2 Literature	27
4.3 Strategy and research choices	28
4.4 Data collection and analysis	28
4.5 Research limitations	29
5 FINDINGS	30
5.1 Respondent demographics	30
5.2 Mobile gaming behavior	30
5.3 Information gathering and processing	31
5.4 Trust building between an application store and the user	33
5.5 Consumer perception of pricing	35
5.6 The role of operant conditioning in in-game purchases	38
5.7 Social influence to the consumer behavior in mobile games	39
6 CONCLUSION	41
6.1 An introduction to conclusion	41
6.2 Impact of the consumer decision process	41
6.2.1 Information search	42
6.2.2 Trust building	42
6.2.3 Evaluation of alternatives	43
6.3 Buyer's characteristics and IAPs	43
6.3.1 Behavioral learning in mobile games	43
6.3.2 Reference group influence	44
6.4 Suggestion for further research	44
7 SOURCE MATERIAL	46

## **APPENDICES**

Appendix 1. Online questionnaire Appendix 2. Respondent demographics Appendix 3. Popularity of application stores

FIGURE	S	
Figure 1.	ARM model	15
Figure 2.	Black Box model	19
Figure 3.	Buyer Decision Process	20
Figure 4.	Buyer Characteristics	22
Figure 5.	Game loop	25
Figure 6.	Providing payment information for application store	37
Figure 7.	Attractiveness of a free price tag	38
Figure 8.	Download share of different monetization models	38
Figure 9.	Conception of fair premium download price	39
Figure 10.	Conception of a fair one time in-game purchase price	40
Figure 11.	Utilitarian reference group influence	
Figure 12	Value-expressive reference group influence	41
TABLES	3	
Table 1.	Information sources of mobile games	33
Table 2.	Value of information to downloading decision	34

## LIST OF ABBREVIATIONS (OR) SYMBOLS

MMO Massively Multiplayer Online Game

MMORPG Massively Multiplayer Online Role Playing Game

CDP Consumer Decision process

F2P Free to Play

DLC Downloadable content

CDP model Consumer Decision Process Model

ICT Information and Communications Technology

ARPU Average Revenue Per User

ARPPU Average Revenue Per Paying User

LTV Life Time Value

CAC Customer Acquistion Cost

IAP In-Application Purchase

## 1 INTRODUCTION

This thesis has been written as a part of International Business degree program facilitated by Turku University of Applied Sciences, Finland. The thesis follows the regulations formerly been set and specified by the degree program. Mr. Ajaya Joshi, the representative from the staff members, has supervised the whole thesis process.

## 1.1 Background

Giant leaps have taken place in the field of information and communication technology during the past decades. We have seen the progressive movement from the first generation cellular phones and the development of the Internet to the booming era of the mobile devices that we are currently experiencing. Leonard (2013) stated that by the end of the year 2013 1,4 billion smartphones were in use. The ongoing trend can also be seen in the number of smartphone users, which is expected to increase during the year 2014 to a total of 1,75 billion users. Utilizing the Internet connection with mobile phones is also growing its' popularity. By the year 2017 it is estimated that 2.97 billion mobile phone users are going to be using Internet over their phones. This will account for by estimations 91% percent of all the internet users. (Srivastava, 2014)

Such a tremendous development in the ICT (Information and Communications Technology) sector and the growth in the amount of mobile device users has also provided an opportunity for a steady increase in sales for the application developers. This can be seen in the statistics from Apple Inc. (2013) which states that they had reached the milestone of 50 billion downloads from their app store in June during the year 2013. The speed of growth of the application business can more distinctly be explained by comparing the figure of applications being offered in the app store in 2008, which was back then only 200, to the 850,000 applications available in the year 2013.

Also the numbers from Google's Google Play mobile application store for Android operating system is showing a similar growth trend in the application business. According to Welch (2013) more than 50 billion applications have been downloaded from Google Play and the store itself contains already over one million different applications.

## 1.1.2 Application revenue models

Whenever the application developers go through the phase of development, they have to carefully consider which of the revenue models they are going to be utilizing. Every model of monetization has its own strengths and weaknesses that are better fitted into certain application types. As it has been stated by Wilcox (2013) the most popular revenue models seem to be the ones that are the easiest to implement. Then again the developers using them tend to have lower revenues.

During the past few years the implementation of IAPs (In-Application Purchase) in smart phone applications has been increasing in its popularity. The IAPs are already responsible for a large portion of the revenue generated with the applications. A clear sign of this trend is the report of Distimo that shows that IAPs were solely responsible of 76 percent of all the revenue created in Apple's App Store for the iOS operating system users in U.S in the February 2013 (Koekkoek, 2013). One of the biggest influencers behind this trend is the growth in the amount of free-download applications. This can also be seen from the forecasts of Gartner Inc. (2014) which state that 94,5 percent of the downloads will be free applications by the year 2017.

When looking at the revenues brought by mobile applications, it is also essential to realize that a dominating share of all this revenue has been generated by the games. Spence (2014) states that in May 2014 84,9% of the 700 top grossing applications were games. As the key reasons have been pointed out the nature of free-to-play monetization model and improved in-game purchasing methods.

## 1.2 Research objectives

The objective of this research is to study the success of in-game sales in applications that have utilized the free-to-play revenue model. The study will approach the success of in-game sales from the perspective of consumer behavior. First step is to research the reasons of the high user numbers in free-to-play titles. Second step is to study the drivers in user's characteristics that lead into in-game purchases.

The motivation and inspiration of this research comes from my own professional background and personal interests. Perhaps the biggest influencing factor was an internship I completed in Berlin, Germany, while working for the Europe's biggest social games publisher in the Business Development department for a time period of half a year. The responsibilities that were given to me resulted into a better understanding of the gaming industry, the monetization strategies and especially the in-games sales. Also as part of my internship I conducted researches related to smartphones as a gaming platform. During my working and learning period at the company I could not help but wonder what is happening on the other side of the spectrum. How are the consumers responding to the given revenue model and what purchase behavioral factors are leading to the success of this monetization type.

### 1.3 Research questions

The thesis research is aiming to provide an answer to the given set of research questions:

- How consumer decision process model has impacted to the rising amount of users in free-to-play game titles?
- What are the key drivers in the buyers' psychological characteristics that have had an influence into the success of in-games sales?
- What are the key drivers in the buyers' social characteristics that have had an influence into the success of in-games sales?

#### 1.4 Structure of the thesis

The second chapter will go through the background and the theoretical frameworks of different revenue models existing in mobile application gaming. The development of early day monetization models used with PC games into the ones that are utilized in mobile. The second part of the literature review will introduce the main ideologies behind the study of consumer behavior and the theoretical frameworks that are often associated to it. This part of the literature review will cover how consumer behavior can in theory explain in-game purchases add increased amount of players in F2P titles.

After that the author will introduce the research methodology utilized by going through step by step the approach to the research, strategy and ways of data collection. The findings of the data collection and the conclusion will be presented in the last part of the thesis.

## 2 OVERVIEW OF GAMING REVENUE MODELS

## 2.1 Background of gaming revenue models

## 2.1.1 Simple transaction

In the late 1980s and early 90s, when the gaming industry was still taking its first steps, the games were given free to the players. That time the most common ways that the games reached the users were first through mainframe labs and later on by passing them around in campus areas. Once the popularity of gaming and the familiarity with the technology related increased, the games were then sold in the form of floppy disks. But still the sales of the games were highly concentrated on small stores focused on specialty software. In the late 1990s these games found their way to the mainstream outlets. (Fields and Cotton, 2012: 21-22)

At that stage of the game industry development the monetization was straightforward; simple transaction where the player purchased the product. This model still continues to maintain its' popularity in the gaming markets to date (Fields and Cotton, 2012: 21-22). But instead the transactions taking place in a physical shop, the popularity of online game shops has been dramatically increasing. This trend can be seen from the research conducted by The Sydney Morning Herald (2012) on the Australian gaming market that stated that only 43% prefer to buy their games old-fashioned way. Then again 22% prefer to download their games and 14% to buy physical copies from an online store.

## 2.1.2 Adaptation of subscription model

A new chapter of the game revenue models was reached when MMOs (Massively Multiplayer Online Game) developed into their modern forms, leading into increasing costs of servers and maintenance. This acted as a stepping-stone for the charging of the subscription fees. In the early stages the fees were kept high in order to compensate the small number of people playing.

In many cases the games were charged on hourly bases. (Fields and Cotton, 2012:22-23)

As the household computers grew more powerful and the internet became available for bigger audience, game developers seized the opportunity in the change. Instead of charging on hourly bases by paying the subscription fee the players were allowed to play for a period of a time, usually a month, without set limitations. Utilizing the subscription model to the MMO games guaranteed a steady revenue stream for the game developers. The model also served as a solution in big gaming markets such as China and South Korea where the piracy of games is a concerning issue. Because the players were not willing to pay for the copy of the game itself, the developers had to come up with a way to monetize them. (Fields and Cotton, 2012:22-23) As a testimony of the success of the subscription model on gaming, we can clearly see Blizzard Entertainment's World of Warcraft that at its' peak had more than 12 million paying subscribers (Kain, 2013).

#### 2.1.3 Microtransactions

The evaluation of microtransactions can be seen as responding reaction to the popularity of the subscriptions in MMOs. Microtransaction is a small purchase within a game by using real money (McCann, 2011:146).

Fields and Cotton (2012:23) argue that this way of monetizing by selling virtual items, such as gear and equipment inside the game, fitted perfectly especially avatar based games and for the MMORPG (Massively Multiplayer Online Role Playing Game) genre. This model managed to generate significant amounts of revenue by monetizing the big numbers of end-users. The key factor was that the purchase intervals are shorter, in some games purchases occurred on daily bases.

#### 2.1.4 Applicability on gaming applications

As the actual and genuine dawn of the gaming applications can be argued the launching of Apple's App Store back in 2008. This was quickly followed by other

application distribution platforms from the developers of other operating systems such as Google Play for the Android users and BlackBerry App World from Research In Motion for BlackBerry devices (Bowling, 2012). The launch of Apple's App store made possible for the first time the downloading and distribution of applications in such a wide range.

The launch of Apple's App Store acted as a catalyst for change in the market. Because of the tight integration of App Store with the device itself, many people were led to try out the downloading of the applications. Games are easily by far the most popular category of applications. Already in the year 2010 games accounted for 44 percent of all the downloads. As the market for the applications increased, it had\_created a growing amount of opportunities for the developers. (Mobile Game Arch, 2012)

The gaming revenue models that originated from some of the first PC games and developed with internet connections have also been implemented to mobile gaming. In some cases in the form that they already had existed with PC games, in other cases as combinations of the previously created models.

## 2.2 Suitable revenue model

The choice of a revenue model is undoubtedly the key factor in the business model that dictates the sustainability and growth potential of a company. As it has been stated by Longenecker et al. (2014:159), a revenue model is 'a component of the business model that identifies the different types of revenue streams a firm expects to receive'.

The importance of a correct revenue model matched with a game type cannot be overlooked at any point of the development by developers. As noted by Morel (2012) when it comes to the potential success of a game making the initial choice of a revenue model is important. If the revenue model used does not fit with the content provided, the most likely outcome will be confusing the customers, leading to a low retention and revenue (Morel, 2012). It is also essential that the choice of the revenue model is done already in the beginning

of the development and the application is being built accordingly. Similar thoughts have been shared by Roup (2013) as he confirms the view that 'monetization should not be an afterthought for developers'. Revenue model should be decided first and then developers should create technology for the whole business to be successful.

Mobile gaming revenue models in their current forms are divided into three different categories: premium, subscription and free to play.

#### 2.2.1 Premium

Morel (2012) defines premium model as charging a payment, often 0,79€ or more, for a download of a gaming application. Premium has been a dominant model especially during the first steps of the application stores. With the premium model the user often learns about the game through clever prerelease marketing that leads to the purchase. This brings us to the root of the problem. These days there are literally hundreds of thousands of apps available on App Store, Google Play and other application stores. This resulting into a situation where it is hard for the game developers to get the information of their game through the white noise created by all the competition. (Fields and Cotton, 2012:151-152) This overflowing marker has caused a new revenue model, free to play, to increase its' popularity (Neogames, 2011:12).

## 2.2.2 Subscription

With subscription model users pay for the access to the game based on the amount of time wished to spend. On one hand, for the developer a subscription fee courante a stable and predictable stream of revenue for the application. On the other hand it also serves as a limit for the total amount of money that can be monetized from the users within the specified time frame. This is seen as the weakness of the given revenue model. (Fields and Cotton, 2012:155-156)

## 2.2.3 Free to play

Free to play revenue model, informally abbreviated to F2P and also known as 'freemium', is a practice of giving your game away for free to download in application stores. With this revenue model an application developer monetizes the users by utilizing IAPs (in games existing as in-game sales) and advertising instead of collecting a fee for a download, which is the case in other revenue models. (Morel, 2012)

Luton (2013:72) describes IAPs, widely also known as microtransactions, as purchases made by the user for virtual goods, currencies or resources. In gaming terms this usually means extra levels to play through or new equipment for the in-game character. This is the attribute that has become increasingly attractive for the application developers. Creating a constant revenue stream from each user rather than utilizing one-off payments. (Harker, 2012:481) Although in-game purchases can also exist in premium games, it has really reached its full potential in F2P games.

Luton (2013:76) has classified IAPs in four different categories (four Cs):

- Content or DLC (Downloadable Content). Consists of levels, maps and characters. When utilized alone can be considered as the weakest of the four Cs; F2P games already provide lots of content to keep the game fresh.
- Convenience Purchase of anything that otherwise would have required time and dedication from the player. Appeals for the achiever gamer types. Satisfaction of a need without labor.
- Competitive advantage Purchase of anything that gives an advantage against the game, or more commonly the other people playing the game. The developer has to plan this type of in-application purchases carefully. If the users not willing to pay for the game at any moment feel that they cannot compete against the players doing in-game purchases, a big portion of the players will be lost.

 Customization – Creative expression by fashioning, adorning or personalizing. In games this is typically done for avatar, cars, pets or anything a player has an emotional bond with. Customization can also work as a status symbol within the game among the players

It is not uncommon to see more than one category of purchase within a single game. Often Cs can be also mixed in one purchase. This offers something for players with different drives and motivations. (Luton, 2013:84)

Gaming companies and consultants commonly refer to ARM model (Figure 2.1), first crafted by Kontagent research group, to understand the F2P game model and how it works (Fields and Cotton, 2012:126). The letter acronym ARM stands for (Vidyarthi, 2012):

- Acquisition: Getting users to a game lowest cost manner possible (ads, cross-promotions with other games, install exchange networks, viral channels)
- Retention: Keeping the audience engaged for as long as possible (Measurements used: Day 1 Retention, day 7 retention, day 30 retention)
- Monetization: Getting the users to pay and keep them paying over a period of time

Fields and Cotton (2012:126) state that ARM model also includes an important characteristics, the user virality, which can reach the new users by adding them to the top of the funnel.

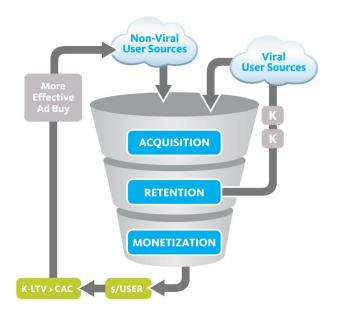


Figure 1 ARM model (http://socialtimes.com/files/2012/01/ARM\_model.jpg)

It is essential to understand that not all the players in F2P games purchase equally; the funnel keeps on getting more narrow as the users go through and most of the them do not reach the end. As a matter of fact in F2P games a power law exists between the amount of players the game has and the number of players that spend money on the game. A typical share of the players that make a purchase in F2P title is somewhere around 5 percentage. This is already considered as a good rate. (Luton, 2013:9) Mobile analytics company Flurry (2011) stated in its' research that in the freemium games they covered IAPs for less than \$10 accounted for 71% of transactions, but just 31% of the revenues. IAPs between \$10 and \$20 accounted for 16% of transactions and 18% of revenues. IAPs of more than \$20 account for a mere 13% of transactions, but 51% of revenues.

Game developers commonly utilize metrics such as ARPU (Average Revenue Per User) and ARPPU (Average Revenue Per Paying User) to better understand the monetization capabilities of their game (Seufert, 2014: 94-95). In order to maintain the game profitable the developer has to make sure that LTV (Life Time Value), the average net profit of a player, stays higher than CAC (Customer Acquisition Cost).

The correlation between the high number of people playing games utilizing F2P model and the success of in-game sales in those games is evident. In-game sales could not reach its peak of success without the existence of F2P. For that reason we need to study two factors that had lead to this situation:

- What in buyer's decision process influences people choosing free games in different application stores over the ones that require money perform the download?
- What in consumer behavior has driven users towards IAPs in F2P mobile games?

## 3 CONSUMER BEHAVIOR

Nowadays the rules of marketing are experiencing rapid changes which are forcing the companies into developing a new set of marketing capabilities. The central reasons for the increasingly competitive marketing are deregulation, privatization and globalization. These factors are pushing the companies to introduce new products more frequently which is resulting into to reduction of the product life cycle and proliferation in brands. This phenomenon combined with fast consumer turnover and advancements in information technology have shifted the power from the marketer to consumer. These factors have resulted to companies changing their marketing philosophy and doing adjustments to their marketing department. One of these has been shifting the focus of marketing towards the recent concepts of consumer behavior. (Kumra, 2007:8)

Consumer behavior is a relatively new field of study. As nowadays many business schools require their marketing students to take a consumer behavior course, most of educational institutions did not offer such a course until the 1970s. Much of this is thanks to the realization received by many business people that the consumer truly in the end is the boss. Many different perspectives influence consumer behavior and it is hard to imagine a field that is more inter-disciplinary. (Solomon, Bamossy, Askegaard 2002:23)

#### 3.1 Definition

Although consumer behavior is a relatively young field of studies there are many existing definitions stated by people specializing in the field:

Kumra (2007:7) describes 'Consumer behavior involves the psychological process that consumers go through in recognizing needs, finding ways to solve these needs, collect and interpret information, make plans, and implement these plans (e.g., by engaging in comparison shopping or actually purchasing a product), making purchasing decisions (e.g., whether not to purchase a product, and if so, which brand and where) and post purchase behavior'.

Kotler (2003:182) states that 'the field of consumer behavior studies how individuals, groups and organizations select, buy, use, and dispose of goods, services, ideas or experiences to satisfy their needs and desires'.

'Consumer behavior entails all consumer activities associated with the purchase, use and disposal of goods and services, including the consumer's emotional, mental and behavioral responses that precede, determine or follow the activities.' (Kardes, Cronley and Cline 2011:8).

All of the above definitions share common ground on multiple points. They agree that consumer behavior covers all the consumer activities from the very starting point of the purchase process, following through the use of the good or service and ending with the disposal of the goods and post purchase behavior. During this chain of consumer activities that gets its start from the recognition of needs and desires, the field of consumer behavior studies the mental and the behavioral responses related to the activities. But as it has been stated by Kotler and Armstrong (2014:158) learning about the reasons behind the consumer buying behavior is not an easy task to accomplish. The answers to these questions are hidden deep inside the minds of the customer. And in many cases it is fair to state that even the consumers themselves do not exactly what are the influencing factors leading into the their purchases.

#### 3.2 Black box model

Black box model is based on the work of Kurt Lewin, a psychologist who studied the impact of interactions of the personal influences to the individual's behavior (Figure 2). The model goes through a transformation process that changes a stimulus into the response inside the mind of a consumer. (Musadiq, 2008:96)

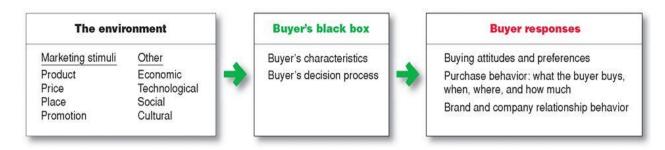


Figure 2 Black Box Model (Kotler et al., 2013: 186)

The stimuli in the model entering the black box are originating from the environment and is consisting two types. First, marketing a stimulus that includes the 4Ps: product, price, place and promotion. The second stimuli consists major forces such as economic, technological, social and cultural. (Tyagi and Kumar, 2004:54) Kotler and Armstrong (2014:159) state that consumer's black box consists of two different parts: buyer's decision process and individual characteristics.

## 3.3.1 Influence of online buying to black box model

Interactions in off-line shops are based on face-to-face activities between the consumer and the service personnel. Online the consumer is forced to interact through the retailer's website. (Park and Kim, 2003:1) This adds an other influencer known as web experience to the traditional black box model. Online marketers can impact the decision making process of the virtual customer by delivering a proper web experience. Web experience embraces the elements like searching, browsing, finding, selecting, comparing and evaluating information. The total picture of the virtual customer is influenced by design, events, emotions, atmosphere and other elements experienced while browsing through a website. These features aim to create goodwill within the consumer

and affect the final outcome through the buyer's decision process. (Internet Research, 2004:111-113)

## 3.3 The buyer's decision process model

As has been stated by Blackwell, Miniard and Engel (2006:70) the consumer decision process (CDP) model captures the activities that occur in a schematic format while purchasing (Figure 3). The consumer goes through five separate stages: need recognition, information search, evaluation of alternatives, purchase decision and post purchase (Ketler and Armstrong, 2014:176). Many researches do not see fundamental differences between online and offline buying behavior. It is still argued that a new step should be added to the online buying process: the step of building trust and confidence. (Internet Research, 2004:111)

The following goes through the effect that different stages of CDP model have on the increase of the users in F2P titles.



Figure 3 Buyer decision-making process (Lamb, Hair and McDaniel 2012:190)

#### 3.3.1 Information search

Information search can be internal, retrieving knowledge from the memory or external, gathering from social contacts or from a marketplace (Kotler and Armstrong, 2014: 176).

Application stores provide information regarding to the games available most commonly with a description and pictures. Some applications also have videos of the game-play. Mostly users rely on the information provided by the others within the application store, often without even realizing it. This happens through the commenting feature that enables users to leave their own notes and ratings of the games. Both Apple's app store and Google's Play store also show rankings for the top gaming applications. Through them a user is indirectly providing marketing for a game simply just by downloading it and affecting the decision process of an other consumer. Especially nowadays this is showing great importance as the application stores are crowded with different gaming options and the best way to achieve visibility over the others is to show in the rankings.

As it has been stated in part 2.2.3 F2P games include an important characteristics, the user virality, which can infect the new users by adding them to the game. User virality results into increased amount of talk surrounding the game and better visibility in an application store.

## 3.3.2 Trust building stage

Dayal et al. (in Gao, 2005:284) state that building the trust online consist of six pieces: state-of-the art security, merchant legitimacy, fulfillment, customer control, tone and ambience. The process of purchasing applications always goes through the same application stores. It does not matter which of the revenue models the application is utilizing the trust building attributes in an application store are still the same until it comes to the security factors.

#### 3.3.3 Evaluation of alternatives

In the stage of evaluating alternatives options identified during the search process are ranked according to the preference (Blackwell, Miniard, Engel, 2006:79-80). If the options that a user is having in an application store are freemium and premium applications, the user is most likely going to be choosing the F2P option. People are drawn to the "free" tag. If you offer anything for free, users will most likely download it. (Bluecloudsolutions, 2013)

## 3.4 Buyer's characteristics

The second entity existing in the buyer's black box effecting how the incoming stimulus is being perceived is the buyer's characteristics. According to Kotler and Armstrong (2014:159) buyer's characteristics can be divided into four different categories. These categories are cultural, personal, social and psychological (Figure 5). The author decided to approach research objectives through psychological and social characteristics.

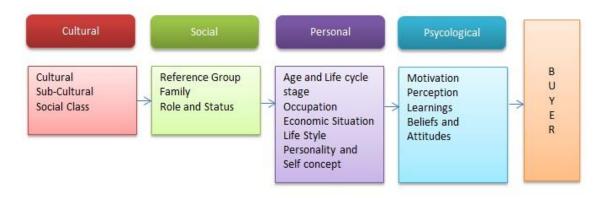


Figure 4 Buyer's characteristics Kotler and Armstrong (2014:159)

#### 3.5 Learning

Evans, Jamal and Foxall (2006:59) state that learning can be viewed from two different perspectives: either with a behavioral or cognitive approach. This stance to learning theories is also being shared among the other researchers in the field of consumer behavior.

### 3.5.1 Behavioral learning

Learning theories got their initiation within the school of behavior and is based on what is known as the stimulus-response model. Behavior is all learned from the external environment. This naturally leading to a conclusion that all the behavior can also be unlearned and replaced with a new behavior. Behaviorism is mainly concerned with the observable and measurable aspects of consumer behavior. Behavior represents certain learned habits and therefore the theory attempts to determine how they have been learned. (Kumra, 2007:140)

According to Evans, Jamal and Foxall (2006:59) there are two approaches within behavioral learning. First, the associationist learning which is more commonly known as classical conditioning. Associationist learning is strongly based on the work of the Russian physiologist Ivan Pavlov (1928) and on the work of Skinner (1938). Perhaps the most commonly known examples of classical conditioning are the experiments that Pavlov conducted with his dogs.

The second approach is the instrumental learning, also known as operant conditioning. Unlike in classical conditioning where a paired stimulus is presented, in operant conditioning learning occurs when a reinforcer is received by following a desired behavior. It also takes place over a period of time in which other behaviors are being attempted but abandoned because they have not been reinforced. (Solomon et al, 2010:248)

Reinforcements in operant conditioning can be either positive or negative. Positive reinforcement occurs when a pleasant or desirable event follows a response. Negative reinforcement is often mistaken with a punishment. Punishment follows a response with an unpleasant consequence. Negative reinforcement merely negates the discomfort. (Coon and Mitterer, 2010:226) Perhaps the most well known example of operant conditioning is the Skinner box, that B.F Skinner, an American psychologist, that observed rats' responding to pressing a lever.

## 3.5.2 Operant conditioning in mobile gaming

Games are constructed by set of rules and the beating heart of these is the constantly repeatable core loop. A core loop is often composed of two components, action and reward.

Getting the game loop right is essential in the development phase of the game. If a single aspect of the loop is not satisfying the user, it will be repeated multiple times as the game progresses on. In F2P gaming titles the importance of core loops is especially emphasized because of its' interactions with each

system that builds engagement to the game. Core loops also provide the user an exit point during the each session and a motive to return. (Luton, 2013:32)

Often other pieces are also implemented to the game's core loop (Figure 3.5). The most common in F2P titles are the upgrades that are placed in the core loop in between of the reward but before the action. Also a waiting period, that usually waits for a real world length of time before the upgrade can be set. (Luton, 2013:33-34) An example of such a core loop can be taken from a mobile gaming title 'Clash of Clans' developed by a Finnish mobile game development company Supercell:

Action: Build buildings that gather resources (gold, elixir)

• Wait: Wait a real world length time

Reward: Gold and elixir received

 Upgrade: Upgrade the buildings by using gathered resources and create troops to take over more resources from the others

The whole logic behind core loops of mobile gaming is following the theory of operant conditioning; an action is being followed by a reward. The player is receiving a positive reinforcement from the game in the form of a reward and an opportunity to upgrade. Here the convenience of the IAPs becomes relevant. IAPs provide the user an opportunity to skip parts of the game's core loop, which would otherwise require an action or a waiting period, and go straight for the reward.

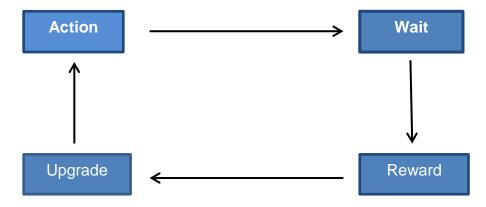


Figure 5 Game's core loop Luton (2013:35)

#### 3.6 Social characteristics

It is natural for human to be in constant interaction with each other. We all belong into great variety of social groups such as work, university and friendship groups. Other members of the social group often end up influencing us and we can also be a source of influence of the others in the group. This influence also affects the consumer behavior of an individual as the group's influence is instrumental in determining the purchase decision. (Evans, Jamal, Foxall, 2006: 170-171)

## 3.6.1 Reference group

Blackwell, Miniard and Engel (2006:522) define a reference group as an individual or a group of people that significantly affect a person's behavior. The reference group's values, attitudes, behaviors and the norms of this group have a huge relevance to the person's behaviors, evaluations and aspirations. Peter and Olson (1996:447) have further defined that a reference group can be of any size, from one person to hundreds of people. Person's reference group can also consist of tangible actual people or intangible and symbolic people (i.e. sports heroes). And individual's reference group can also come from different cultures, sub-cultures and social classes.

## 3.6.2 Types of reference group influence

Salomon et al. (2010:385) state that reference groups can be divided into different types:

- Informational reference group influence Individual seeks information about the brand and the product from professionals or experts.
- **Utilitarian reference group influence** Individual's choice of a brand is influenced by the people that s/he is in social contact with. The desire to satisfy the expectations that the others have on the individual.
- Value- expressive reference group influence Individual feels that the purchase of the particular brand will enhance his image. Individual also

feels that those who purchase the particular brand possess the characteristics s/he would like to have.

## 3.6.3 Reference groups in mobile gaming

Playing games is also a social event. In mobile gaming a reference group exists within the game itself consisting of the other players. Some of the games provide the users an opportunity to form subgroups in the game. An example of this type of game design is Supercell's 'Clash of Clans' that allows the players to form clans and go to war against the other groups of players. The clan is a reference group for a single player and the type of influence that is received is utilitarian. An individual often wants to satisfy the clan members and their expectations by investing time or resources in the game, often in a form of IAPs.

The effect of the utilitarian reference group influence has already been more deeply researched in PC games by psychologist. King and Delfabbro (in Hilgard, Engelhardt and Bartholow, 2013) have described the phenomenon as social obligation. A player has to play as long as the other people want to. The game makes the player obligated to play by making players depended on each other with the in-game resources.

Value-expressive reference group influence also takes place in mobile gaming. Especially in fashion and lifestyle games that are mainly targeted for girls in young age groups but also serve the other segments. By purchasing a certain piece of clothing an individual hopes to enhance his/her image and possess the product's characteristics.

## 4 METHODOLOGY

This study researches the drivers behind the success of IAPs (In-Application Purchase) in mobile game applications utilizing the free-to-play revenue model. The study is conducted from the perspective of consumer behavior and the aim is to research what in buyer behavior leads an individual to choose a free-to-play game over games that charge money in an application store. The research also strives to discover the drivers in consumer's buying behavior having an influence into IAPs.

The first part of this chapter will discuss the choice of research approaches and strategies followed by data collection and analysis methods. The last part focuses on the research limitations.

## 4.1 Approach

The study follows the research approach of deduction. Saunderset al. (2009:124) state that deduction owes a lot to scientific research. It involves developing a theory and placing it under rigorous testing. It is also the dominant research approach in natural sciences; laws present the basis of explanation and allow the prediction of a phenomenon. Deductive approach strives to explain casual relationships between variables and to test it by gathering data (Collins, 2010:42). In this study the theories that have been presented in the literature review are based on those used to understand the study of consumer behavior.

The deductive approach was chosen over inductive approach that more often is associated with interpretative, qualitative studies. Here the pattern is to collect data and analyze it in order to develop theory or a model as a result (Gratton and Jones, 2010: 37)

#### 4.2 Literature

The literature used to form the literature review consisted of primary and secondary literature; reports from the analytical companies researching the

industry, journals and books specialized in the area of study and newspaper articles.

## 4.3 Strategy and research choices

The study will apply the survey strategy. Survey is commonly utilized by deductive approach to a research. It allows a sizeable amount of data to be collected in an economical way (Saunders et al., 2009:144). Sapsford (in Blaxter et al, 2006:77) state that standardization is the core of the survey research. Survey asks those questions that the researcher wishes to be answered. Often it also dictates the range that answers can be stated in.

The study follows the multiple methods branch in the framework of research choices. The study utilizes more than a one data collection technique and analyses procedure which is the opposite of mono method that uses a single data collection technique with a corresponding analyzes procedure. Within the multiple methods branch mixed-method research will be applied to the study. Mixed-method research uses qualitative and quantitative data collection techniques and analysis procedures. This can happen parallel or after the other but does not combine them; quantitative data are still analyzed quantitatively and qualitative data qualitatively. (Saunders, Lewis, Thornhill, 2009:153). Tashakkaori and Teddlie (in Saunders, Lewis, Thornhill, 2009:153) argue different methods can be utilized in different parts of the study. In this study interviews are employed at the exploratory state in order to get a better understanding of the key issues that afterwards are collected using a questionnaire.

## 4.4 Data collection and analysis

First, qualitative primary data is collected from a small sample of people through non-standardized semi-structured one to one face-to-face interviews. The purpose of these interviews is to gain a better understanding of the key issues before implementing the questionnaire. In semi-structured interviews the researcher has a list of themes and questions that are planned to be covered

during the process. Depending on the interviewee some of the questions can be omitted and the order can be changed to enhance the flow of the interview (Saunders, Lewis, Thornhill, 2009:320).

Secondly, quantitative primary data is collected with a questionnaire (See Appendix 1).. Some parts of secondary data from industry analysis companies were used to better comprehend the trends that have been taking place in the mobile gaming and smartphone industry in general. In this study the primary data collection takes the form of a self-administrated internet-mediated questionnaire. This type of questionnaire required the respondents to complete the questionnaire by themselves electronically using the internet (Saunders, Lewis, Thornhill, 2009:362). The questionnaire and questions are designed to answer the research questions stated. To verify that the respondent decodes the question in the way that author has intended, a rigor pilot testing is conducted to a group of people chosen in advance and the needed changes are completed. During the research it is made sure that the sample size is large enough to make generalizations. The questionnaire is posted to the emails of students at Turku University of Applied Sciences and different gaming forums online. The questionnaire was kept active online for a period of three weeks. The data gathered with the survey is analyzed by using Qualtrics, online questionnaire tool, and by Microsoft Excel.

### 4.5 Research limitations

All research projects have limitations; none is perfect (Marshall and Rossman, 2011:75). In this study the limitation is getting the internet-mediated questionnaire in contact with enough people that have experience of IAPs. Luton (2013:9) states that a typical share of the players that make a purchase in F2P title is somewhere around 5 percentage. This is already considered as a good rate. Targeting those 5 percent of the mobile gamers with the questionnaire and making sure that the research sample is big enough is a limitation.

## 5 FINDINGS

Following chapter presents the results of the primary data collection conducted by a self-administrated internet-mediated questionnaire. Despite the total number of 136 respondents not all of the questions were answered equally due to the design of the questionnaire and the need to utilize skip logic by the author (see Appendix 1). Out of 136 respondents 120 (89%) had had an experience of downloading a mobile game application from an applications store. The number of respondents will be stated in the each of the following parts.

## 5.1 Respondent demographics

Two questions were set in the questionnaire to grasp a better understanding of the respondent demographics: (1) What is your age? (2) What is your gender?

Out of 102 respondents 60% were male and 40% female. The biggest age segments that were represented in the questionnaire were respondents in the age of 19-25 (52%) and 26-35 (41%). This can be explained by the fact that the questionnaire was mainly circulated among university level students and people in entry-level jobs in their working life. Despite the attempts to also target younger respondents by posting the questionnaire in different online gaming forums of most successful mobile application games only 3% belong to the age segment of 13-18 years old (see Appendix 2)

## 5.2 Mobile gaming behavior

In order to understand better the preferences and habits of the respondents as users of smart handheld devices and mobile gamers two questions were implemented to the online-survey: (1) How often do you play mobile games? (2) Which of the application stores do you use?

Out of the total 109 respondents to this question 28 (25%) replied that they play mobile games every day. The second biggest group consisting of 25 (22%) respondents stated that they play mobile games 2-3 times in a week. The answers to the question "Which of the application stores do you use?" illustrate

that Apple's App Store and Google Play are the most frequently used application stores used by the respondents to download mobile application games: Google Play being used by 62% of all the respondents and Apple's Appstore by 45%. The question was set in the online survey in a way that respondents were allowed to choose more than one application store. This choice was made by the author to make sure that people owning or using more than one mobile device with different operating systems were allowed fully voice their preferences (see Appendix 3).

## 5.3 Information gathering and processing

Two questions were set in the online questionnaire to better understand the information gathering and processing when downloading a mobile application game from an application store: (1) I first hear or read about a mobile gaming application from (2) Please rate how valuable the following types information are for your decision to download a mobile gaming application.

Sources of Information	Never	Almost never	Sometimes	Fairly often	Very often	Always
Application Store	8	17	27	16	28	9
Social Contacts	0	7	32	34	26	6
Gaming Related Websites and Forums	28	29	29	7	11	1
Advertisement	10	27	40	18	10	0

**Table 1** Information sources of mobile games

**Table 1** presents a comparison between first time sources of information for mobile application games and how often the respondents receive the information from these origins. The categories for the information sources were created through qualitative primary data collection from a small sample of people through non-standardized semi-structured one to one face-to-face interviews. In the table the cells that have been colored with the green color represent the highest-ranking options in their own category and the yellow cells the second most popular. Out of the 105 respondents 28 (26,7%) read *very often* about mobile games from an application store for the first time. In social

contacts category the most popular answer option was *fairly often* with 34 replies, 32,4 percentages of the whole sample. In the case of gaming related websites and forums category two options received the same amount of picks; both *almost* never and *sometimes* received 29 replies each representing 27,6% of the pool. In the case of advertisements 40 people (38,1%) replied that they *sometimes* hear about the mobile game for the fist time from them. Facts that should be also mentioned regarding to the **table 1** are that application store and social contacts received the biggest amount of *very often and always* replies. Then again advertisements and gaming related websites and forums received the most *almost never* and *never* answers.

Information type	Not at all important	Very unimportant	Somewhat unimportant	Neither important or unimportant	Somewhat important	Very important	Extremely important
Social contacts opinion of a game	20	2	18	13	23	24	5
Game's ranking in an application store	4	11	11	12	40	24	3
Game reviews written by others in an application store	8	9	14	17	33	19	5
Pictures of a game provided in an application store	4	7	9	19	33	22	11
Game-play video	11	13	12	18	25	20	6
Written description of the game in an application store	5	7	19	22	30	20	2
Posting or an article of a game on a gaming related forum or website	15	13	20	23	19	12	3

Table 2 Importance of information for decision to download a mobile game

The table above illustrates the value of different types of information to the downloading decision of a mobile application game. The cells colored green in the given table highlight the most common answers for each category replied by the 105 respondents that completed this part of the questionnaire. The yellow cells represent the second most popular answer options. Out of all the respondents 22,9% consider social contact's opinion of a game *very important*. It is to be noted that almost the same amount of people, 19% of the respondents, perceive the same type of information as *not important*. In the category of game's rankings in an application store the most common choice of a reply was *somewhat important* replied by 38.1% of the respondents. In the

questionnaire 33 people (31.4%) of the people stated that game reviews written by others in an application store are *somewhat important* which also was the most often picked reply option in the category. Also the same amount of respondents, 33 people out of 105, considered pictures taken of game that are provided in an application store as *somewhat important* information for a decision to download the mobile game. In the question category of written description of the game in an application store the reply option that got the most clicks was *somewhat important* that was chosen by 30 (28.6%) respondents. In the last question category 20 (19%) of the pool stated that postings or articles of a game on game related forum or website are *neither important* of *unimportant* information to their decision to download a mobile application game. As a logical explanation to the results received from this category could be seen that mobile games have not yet managed to build up as strong fan and user base as traditional PC or console games. For that reason mobile game related forums do not still receive large amount of audience.

What is to be noted when looking at the **Table 2** that the replies given by the respondents are multipolar and no clear answer concentrations to the importance of a certain information type exist. Still one of the clear messages that the table is conveying is that posting or an article of a game on a gaming related forum or website is perceived as less valuable information for the respondents application downloading decisions. The two most popular answer options are *neither important or unimportant* and *somewhat important*. It is also to be noted that the amount of respondents that value pictures of a game provided by an application store as an *extremely important* source of information is 83.3% higher than the second category.

## 5.4 Trust building between an application store and the user

The following two questions were included to the online survey in order to understand better the building of trust between an application store and the customer in an online environment: (1) How important do you perceive the following factors when building trust between a customer and an application

store? Factors that were stated in the question were: state of an art security, merchant legitimacy, fulfillment, customer control and atmosphere of an application store. (2) How would you feel about providing your payment information for an application store?

Trust building factors	Not at all important	Very unimportant	Somewhat unimportant	Neither important or unimportant	Somewhat important	Very important	Extremely important
State of an art security	5	5	7	18	27	22	20
Merchant legitimacy	5	8	3	17	26	34	12
Fulfillment	4	5	4	20	28	35	9
Customer control	2	6	10	26	28	27	6
Atmosphere of an application store	5	8	9	23	32	23	5

Table 3 Building trust online

The table above (**Table 3**) illustrates the importance of six factors that create trust between the end consumer and an application store. The wordings of different trust building factors were changed or some factors eliminated in order to make the question better understandable by the people answering to this part of the questionnaire. The cells colored in the table present the most common opinions in each of the of the category. The yellow cells highlight the second most often picked options. The total amount of people that replied to this part of questionnaire was 105 respondents.

In the first category 27 people, 25.7% of the total respondent pool, stated that state of an art security is *somewhat important*. What is to be noted that this category received the most *extremely important* replies; 66.7% more than the second most *extremely important* replies gathered option category. In the next category 34 (32.4%) of the respondents consider merchant legitimacy to be *very important*. In the category of fulfillment 33.3%, 35 respondents of the total 105, stated this trust building factor to be *very important*. With the online trust building dimension of customer control the biggest group of the respondents, 26.7% of the people, consider it as *somewhat importance*. As the first four dimensions of building trust online are somehow concentrated to the one end of the spectrum; most replies gathered options being either *somewhat important* or

very important, with the category of atmosphere of an application store replies gradually shift to the other end of the table. Still also in the this category the most popular option which was replied by 32 people (30.1%) was somewhat important. Still when combining all the replies from not at all important, very unimportant and somewhat unimportant options the total amount of replies from these is relatively higher than in other categories.

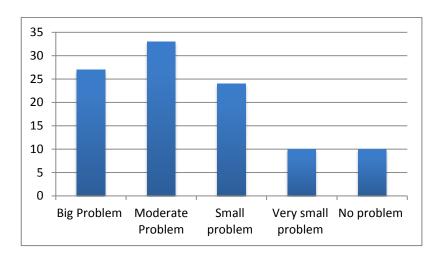


Figure 6 Respondents opinion about providing payment information for application store

The bar chart illustrates the opinions of the 104 respondents that completed this part of the survey regarding to providing payment information for an application store. Most of the respondents, 33 (31.4%) people out of the total, noted that for them providing payment information for the application store is a moderate problem. In addition as the second most popular reply option 27 (26.0%) of all the respondents stated that stated that providing payment information is a big problem for them. The results received from this question are well in line with the ones illustrated in **Table 3.** When calculated 65.7% of the 105 respondents considered state of an art security *somewhat important*, *very important* or *extremely important*.

#### 5.5 Consumer perception of pricing

In order to grasp a better understanding of consumers opinions and perceptions pricing of the products within an application store and a mobile game four questions were included to the survey: (1) Do you think free-to-play mobile

games are more attractive to download than premium and subscription games simply because of the "free" price tag? (2) Out of all the mobile game applications you have downloaded in the past how many percentage would you have estimated to have been: free-to-play, premium or subscription? (3) How much would you consider to be a fair one-time download price for a premium mobile application game? (4) How much would you consider to be a fair price for a one time in-game purchase?

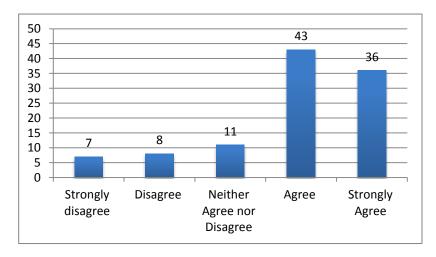


Figure 7 Free-to-play mobile games are more attractive to download because of the 'free' price tag

To the question "Do you think free-to-play mobile games are more attractive to download than premium and subscription games simply because of the 'free' price tag?" the largest group of respondents, 43 (41.0%) of the total of 105 people that completed this part of the survey, replied that they agree. The second biggest group that consisted of 36 (34.3%) respondents stated that they strongly agree with the given statement presented in the question. Only 15 people out of the total of 105 either disagreed or strongly disagreed.

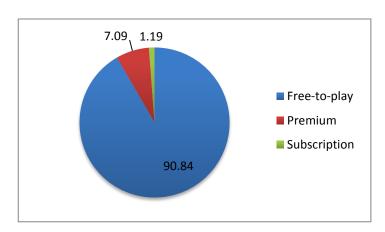


Figure 8 Download shares of mobile games utilizing different monetization models

The findings that are illustrated in **Figure 8** are most definitely also in line with the results that were gathered from the second question "out of all the mobile game applications you have downloaded in the past how many percentage would you have estimated to have been: free-to-play, premium or subscription? This question was also completed by 105 people. Like the pie chart is demonstrating above free-to-play clearly has the upper hand when it comes to other monetization models among the respondents of the questionnaire. In the pie chart are gathered the average figures of the estimations provided by the people that completed the question. On average 90.84% of mobile games downloaded have been free-to-play games, 7.09% premium games and 1.19% subscription games.

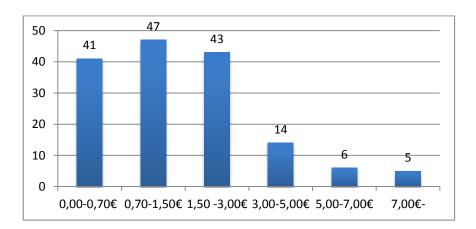
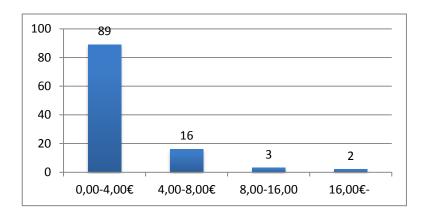


Figure 9 Conception of a fair price for a one-time premium download

**Figure 9** above illustrates the conception of a fair price for a one-time premium download from an application store. This part of the questionnaire gathered 104 respondents and 156 replies in total. A conscious decision was made by the author to establish the question in the online survey in a way that it allowed multiple answer choices. This decision was made in case some of the respondents felt that different types of games are entitled to different premium download prices and they wanted to express that while filling the survey.

As can be seen from the chart the most popular answer choice was 0,70-1,50€ which gathered 47 replies that is 45.2% of the total. It is to be noted that in case

of 84.0% of the replies a fair price for a mobile application game is never considered to be more than 3 euros.



**Figure 10** Conception of a fair price for a one time in-game purchase

Figure 10 illustrates the conception of a fair price for a one time in-game purchase within a mobile application game. This part of the questionnaire gathered 101 respondents and 110 replies in total. A conscious decision was made by the author to establish the question in the online survey in a way that it allowed multiple answer choices. This decision was made in case some of the respondents felt that different types in-game purchases are entitled to different prices and they wanted to express that while filling the survey. As has been illustrated in the table above 89 replies, 80.9% out of the total consider less than four euros as a fair price for an in-game purchase.

#### 5.6 The role of operant conditioning in in-game purchases

In order to be better understand the psychological part of the consumer behavior in mobile gaming and the role that operant conditioning plays in ingame purchases the following question was added to the survey: (1) Have you ever made an in-game purchase in order to speed up the game process?

In order to access this part of the online questionnaire the respondent had to provide a 'yes' answer to the gate question 'Have you ever made an in-game purchase?' Out of the total 106 respondents that replied to this question 40 (38%) stated that they have. This is considered to be a exceptionally high percentage since common perception is that only 5% of the people go through

the whole ARM funnel and make an in-game purchase in free-to-play games (see part 2.2.3). A reasonable explanation for the high percentage can be that the online survey was distributed in mobile gaming forums that normally host only the most active players that have the tendency to make IAPs. Out of the 40 people that had confirmed that they had made an in-game purchase in the past 39 provided a reply to the question "Have you ever made an in-game purchase in order to speed up the game process?" Totally 31 (79%) percentage confirmed that they have made an in-game purchase in order to speed up the gaming process.

## 5.7 Social influence to the consumer behavior in mobile games

The following questions were placed in the online survey to better understand the influence of reference groups to the buying behavior taking place within the mobile games: (1) To what extend do you agree that other players or your social contacts outside of the game have influenced your in-game purchase decision? (2) To what extend do you agree that than an in-game purchase that you have made has enhanced the way other players or your social contacts outside of the mobile game see you?

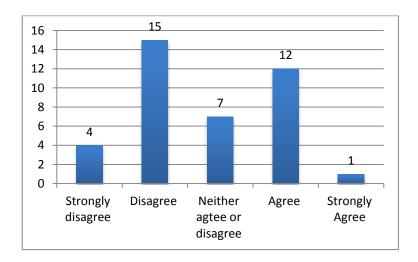


Figure 11 Utilitarian reference group influence to purchase decision

The figure above illustrates the utilitarian reference group influence to in-game purchase behavior of the respondents. Out of the total 39 people that replied to this part of the survey 15 (35.8%) disagreed of having had influence on their in-

game purchases by other players or social contacts outside of the game. Then again the second biggest group of the respondents, 12 (30,8%) out of the total, agreed that they have been influenced by other players or social contacts outside of the game.

The results to the second question that was placed to better understand valueexpressive social influence in in-game purchasing are illustrated below.

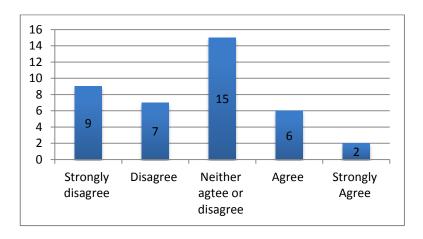


Figure 12 Value-expressive social influence in in-game purchasing

The biggest group of the respondents to this question, 15 (38.5%) of the total 39, neither agreed or disagreed that an in-game purchase that they have made has enhanced the way other players or their social contacts outside of the mobile game see them. The second biggest group of 9 (23.1%) respondents strongly disagreed with the statement presented in the question.

# 6 CONCLUSION

#### 6.1 An introduction to conclusion

This thesis research work was written with an aim to provide further understanding to the current trends taking place in mobile application gaming by utilizing theories of consumer behavior. The target was to provide reasons why in-game purchases have become such a successful way to monetize in free-to-play mobile games. The research topic was approached by breaking it up into the following three research questions:

- What in consumer decision process model has impacted to the rising amount of users in free-to-play game titles?
- What are the key drivers in the buyers' psychological characteristics that have led to the success of in-games sales?
- What are the key drivers in the buyers' social characteristics that have led to the success of in-games sales?

The purpose of this chapter is to connect the literature review of the thesis with the primary data findings presented in the previous chapter to provide answers to the research questions.

#### 6.2 Impact of the consumer decision process

The respondents of this research stated on average over 90% of the games they have downloaded from different application stores have been free-to-play games. This part of the chapter answers to the first research question set: "What in consumer decision process model has impacted to the rising amount of users in free-to-play game titles?"

According to the research conducted for this work there are steps within the consumer decision process model of mobile application games that push customers more towards the games utilizing free-to-play revenue model instead of premium and subscription downloads.

#### 6.2.1 Information search

Fields and Cotton (2012:126) state that ARM model also includes an important characteristic, the user virality, which can infect the new users by adding them to the top of the funnel. Free-to-play revenue model utilizes the aspect of virality further than the other two monetization models and relies on it in order to get more players. Virality takes its' forms in mobile application gaming often appearing as increased talk surrounding the game among social contacts and also within the application stores. According to the respondents of this research the majority hears or reads about mobile application games for the first time very often from application stores and fairly often from social contacts. In addition to that the majority felt that social contact's opinion of the game is very important to their decision to download the game. Also all the different types of information and indirect opinions of other people in the application stores expressed in forms of rankings and reviews were stated to be somewhat important or very important to the download decision.

## 6.2.2 Trust building

The second stage of the CDP that has to be highlighted is the trust building stage that that unique to online consumer behavior. The biggest groups of the respondents considered that state of an art security is somewhat important or very important when it comes to building trust between a customer and application stores. This factor was also stressed from a slightly different angle when the majority of the respondents stated that providing their payment information for an application store would be either a big or a moderate problem. These results have to be taken in deep consideration when thinking about the very nature of different revenue models. In case of free-to-play model in order to access the contents of the game application the customer never has to worry about that aspect of the security. This not being the case in premium and subscription models that always require a some type of purchase with a payment card. Merchant legitimacy and fulfillment were also considered very important to building trust between an user and an application store. Yet again

these aspects can be approached differently depending on the revenue model discussed. When it comes to free-to-play games there are no monetary risks involved with merchant legitimacy and fulfillment. That being because the games are downloaded for free from the application store. No losses are experienced by the customer if product does not match the given descriptions and specifications. This not being the case with games utilizing premium and subscription models.

#### 6.2.3 Evaluation of alternatives

People are drawn to the "free" tag. If you offer anything for free, users will most likely download it (Bluecloudsolutions, 2013). The results that were received from the research also strongly point towards the same conclusion. The majority of the respondents either agreed or strongly agreed that free-to-play games are more attractive to download simply because of the "free" price tag. We can safely assume that this is a significant factor providing growth for the user base of free-to-play games. Interestingly the results also indicate that customers' willingness to pay for a gaming application drops considerably when the price of a download has been set over three euros.

# 6.3 Buyer's characteristics and IAPs

Previous parts of this chapter have pointed out factors that increase the amount of people in free-to-play games. The next step that still needs to be understood what makes people to purchase within the mobile application games. The following parts answers to the two remaining research questions: "What are the key drivers in the buyers' psychological characteristics that have led to the success of in-games sales?" and "What are the key drivers in the buyers' social characteristics that have led to the success of in-games sales?"

#### 6.3.1 Behavioral learning in mobile games

A clear majority of the respondents stated that they have made an in-game purchase in order to speed up the game process. These results strengthen the

assumptions presented in the literature review that operant conditioning plays a key role when it comes to in-game purchases in mobile games. The base of a successful free-to-play game is a strong core loop. The whole logic behind core loops is following the theory of operant conditioning; an action is being followed by a reward. The player is receiving a positive reinforcement from the game in the form of a reward and an opportunity to upgrade. Here the convenience of the IAPs becomes relevant. IAPs provide the user an opportunity to skip parts of the game's core loop, which would otherwise require an action or a waiting period, and go straight for the reward

## 6.3.2 Reference group influence

The research specifically focused on further explaining the influence of utilitarian reference group and value-expressive reference group within the social characteristics of a consumer when making IAPs. A big group of the respondents either agreed or remained neutral instead of disagreeing when asked if their in-game purchases have been influenced by their social contacts or other players in the game. This clearly indicates that utilitarian reference group influence has an effect on IAPs made by the players that should not be disregarded.

In the case of value-expressive reference group influence most of the respondents showed some level of disagreement or stayed neutral when asked if they felt that the in-game purchases they have made in the past have somehow affected how other players or social contacts outside of the game see them. Based of these responses we can state that the value-expressive reference group influence does not carry a notable effect on the IAPs. But as there still were respondents that agreed with the statement given its' role cannot not be completely ruled out.

# 6.4 Suggestion for further research

This research has only scratched the topic are of free-to-play games and IAPs from the perspective of consumer behavior. There are still many factors to be

researched that influence the consumers to choose mobile games utilizing freemium monetization model and making in-game purchases. More research should be conducted beliefs and attitudes part of the consumer's psychological characteristics and the impact that they have on mobile gaming consumer behavior. Also the personal consumer characteristics would add an interesting viewpoint to the research.

# 7 SOURCE MATERIAL

Leonard, H. (2013) *There Will Be One Smartphone For Every Five People in The World* [online]. <a href="http://www.businessinsider.com/15-billion-smartphones-in-the-world-22013-2">http://www.businessinsider.com/15-billion-smartphones-in-the-world-22013-2</a> 7 Feb 2013 [12 March 2014]

Srivastava, A. (2014) 2 Billion Smartphone users by 2015: 83% Internet Usage From Mobiles [study] [online] <a href="http://www.dazeinfo.com/2014/01/23/smartphone-users-growth-mobile-internet-2014-2017/">http://www.dazeinfo.com/2014/01/23/smartphone-users-growth-mobile-internet-2014-2017/</a> 23 Jan 2014 [15 March 2014]

Apple Inc (2013) *Apple's App Store Marks historic 50 Billionth Downaload* [online] <a href="http://www.apple.com/pr/library/2013/05/16Apples-App-Store-Marks-Historic-50-Billionth-Download.html">http://www.apple.com/pr/library/2013/05/16Apples-App-Store-Marks-Historic-50-Billionth-Download.html</a> 16 May 2013 [1 April 2014]

Welch, C. (2013) Google: Android App Downloads Have Crossed 50 Billion, Over 1M Apps in Play [online] <a href="http://www.theverge.com/2013/7/24/4553010/google-50-billion-android-app-downloads-1m-apps-available">http://www.theverge.com/2013/7/24/4553010/google-50-billion-android-app-downloads-1m-apps-available</a> 24 July 2013 [17 March 2014]

Wilcox, M. (2013) *Are You Using the Right App Revenue Model* [online] <a href="http://www.developereconomics.com/apps-using-right-revenue-models/">http://www.developereconomics.com/apps-using-right-revenue-models/</a> 19 Nov 2013 [1 April 2014]

Gartner Inc. (2014) Gartner Says That Less Than 0,01% Percent of Consumer Mobile Apps Will Be Considered a Financial Success By Their Developers Through 2018 [online] http://www.gartner.com/newsroom/id/2648515?fnl=search 13 Jan 2014 [11 March 2014]

Koekkoek, H. (2013) *How The Most Successful Apps Monetize Their User Base* [online] <a href="http://www.distimo.com/publications">http://www.distimo.com/publications</a> March 2013 [22 March 2014]

Kurma, R. (2007) Consumer Behavior. Mumbai IND: Global Media

Solomon, M., Bamossy, G. and Askegaard, S. (2002) Consumer Behavior- A European perspective. Essex: Personal Education Limited

Longernecker, J. Petty, W. Palich, E. Hoy, F (2014) *Small Business Management: Launching and Growing Entreprenurial Ventures*, 17<sup>th</sup> edition. Stamford: Cengage Learning

Frank R. Kardes, Maria L. Cronley and Thomas W. Cline (2011) *Consumer Behavior* . USA: South-Western Cengage Learning

Kotler, P. (2003) Marketing management 11th edition. Singapore: Pearson Education, Inc.

Kotler, P., Armstrong, G. (2014) *Principles of Marketing, 15<sup>th</sup> Edition*. England: Pearson Educated Limited

Tyagi, C., Kumar, A. (2004) Consumer Behavior. New Delhi IND: Atlantic Publishers and Distributers

Sahaf, M. (2008) Stratigic Marketing: Making Decisions for Strategic Advantage. New Delhi IND: Prentice Hall of India Private Limited

Solomon, M., Bamossy, G., Askegaard, S. and Hogg, M.,(2010) *Consumer Behavior: A European Perspective 4<sup>th</sup> Edition.* England: Pearson Education

Blackwell, R., Miniard, P. and Engel, J. (2006). *Consumer Behavior 10<sup>th</sup> edition*. USA:Thomson High Education

Evans, M., Jamal, A. and Foxall, G. (2006) *Consumer Behavior*. England: John Wiley & Sons Ltd

Vashisht, K. (2005) A Practical Approach to Marketing Management. New Delhi: Atlantic

Armstrong,G., Kotler, P., Harker, M and Brennan, R. (2012) *Marketing An Introduction 2<sup>nd</sup> edition.* England: Pearson Education Limited

Desmond, J. (2003) *Consumer Behavior* USA:St.Martin's Press LLC Scholary and Reference Division and Palgrave Publisher Ltd

Smith, P. (1998) *Marketing Communications: an integrated approach 2<sup>nd</sup> edition*. England: Kogan Page Limited

Paul, P. and Olson, J. (1996) Consumer behavior and marketing strategy 4<sup>th</sup> edition. USA: Timer Mirror Higher Education Group

Morel, R. (2012) Choosing the Right Business Model For Your Game Or App [Online] <a href="http://www.adobe.com/devnet/flashplayer/articles/right-business-model.html">http://www.adobe.com/devnet/flashplayer/articles/right-business-model.html</a> 27 Aug 2012 [11 April 2014]

Roup, O. (2013) *Mobile App Monetization: Think Busines Model, Not Apps* [Online] <a href="http://venturebeat.com/2013/06/02/mobile-app-monetization-think-business-model-not-ads/">http://venturebeat.com/2013/06/02/mobile-app-monetization-think-business-model-not-ads/</a> 2 June 2013 [4 April 2014]

Fields, T. Cotton, B. (2012) Social Game Design: Monetization Methods and Mechanics. USA: Morgan Kaufman Publishers

Kain, E. (2013) 'World of Warcraft' Sheds an Other 600, 000 subscribers [Online]http://www.forbes.com/sites/erikkain/2013/07/26/world-of-warcraft-sheds-another-600000-subscribers/ 27 July 2013 [9 April 2014]

Bowling, D (2012) The History of The Mobile App Market Place: Get Ready to Step Up Your Trivia About Smartphone App Stores [Online] <a href="http://www.webpronews.com/the-history-of-the-mobile-app-marketplace-2012-02">http://www.webpronews.com/the-history-of-the-mobile-app-marketplace-2012-02</a> 7 Feb 2012 [11 April 2014]

Coon, D. and Mitterer, J. (2010) *Introduction to Psychology: Gateway to Mind and Behavior 12<sup>th</sup> edition Canada*: Wadsworth

Luton, W. (2013) FREE2PLAY: Making Money From Games You Give Away USA: Pearson Education

Neogames Center of Game Business, Research and Development. 2011. *The Finnish Game Industry Report*. PDF report.

Mobile Game Arch, State of the Art of the European Mobile Game industry. 2012. PDF report.

Flurry (2011) Cosumers Spend an Average of 14 Per Transaction in iOS and Android Freemium Games [online] <a href="http://www.flurry.com/bid/67748/Consumers-Spend-Average-of-14-per-Transaction-in-iOS-and-Android-Freemium-Games">http://www.flurry.com/bid/67748/Consumers-Spend-Average-of-14-per-Transaction-in-iOS-and-Android-Freemium-Games</a> 25 July 2011 [12 May 2014]

Bluecloudsolutions () Why Is Freemium So powerful? [Online] <a href="http://www.bluecloudsolutions.com/articles/freemium-powerful/">http://www.bluecloudsolutions.com/articles/freemium-powerful/</a> [16 June 2014]

Hilgard, J., Engelhardt, E. and Bartholow, B. (2013) *Individual differences in motives, preferences, and pathology in video games: the gaming attitudes, motives, and experiences scales (GAMES)* [online] <a href="http://journal.frontiersin.org/Journal/10.3389/fpsyg.2013.00608/full">http://journal.frontiersin.org/Journal/10.3389/fpsyg.2013.00608/full</a> 09 Sept 2013 [14 May 2014]

Saunders,M., Lewis,P. and Thornhill, A. (2009) Research Methods For Business Students 5<sup>th</sup> edition. England: Pearson Education Limited

Collins, H. (2011) Creative Research: The Theory and Practice of Research For Creative Industries. UK: AVA Publishing

Yuan Gao (2005) Web Systems Design and Online Consumer Behavior USA: Idea Group Publishing

Gratton, H., Jones, I. (2010) Research Methods For Sports Studies 2<sup>nd</sup> edition USA: Routledge

Lamb, Hair, McDaniel (2012) Essentials of Marketing 7<sup>th</sup> Edition USA: South-Western Cengage Learning

Kotler,P., Burton,S., Deans,K., Brown,L., Armstrong,G. (2013) *Marketing 9<sup>th</sup> edition* Australia:Pearson

Spence, E. (2014) Smartphone App Revenue Dominated by A Handful of Games and Developers [Online] <a href="http://www.forbes.com/sites/ewanspence/2014/07/08/smartphone-app-revenue-dominated-by-a-handful-of-games-and-developers/">http://www.forbes.com/sites/ewanspence/2014/07/08/smartphone-app-revenue-dominated-by-a-handful-of-games-and-developers/</a> 07 Aug 2014 [10 December 2014]

The Sydney Morning Herald (2012) *New Statistics Reveal the Face of Australian Gaming* [Online] <a href="http://www.smh.com.au/digital-life/games/blog/screenplay/new-statistics-reveal-the-face-of-australian-gaming-20120801-23g49.html">http://www.smh.com.au/digital-life/games/blog/screenplay/new-statistics-reveal-the-face-of-australian-gaming-20120801-23g49.html</a> 02 Aug 2012 [10 Dec 2014]

Seufert, E. (2014) Freemium Economics: leveraging analytics and user segmentation to drive revenue USA: Elsevier Inc

McCann, T. (2011) The Art of the App Store: The Business of Apple Development USA: John Wiley & Sons

# Online questionnaire

#### Default Question Block

Dear Respondent,

This survey has been created to gather data for my bachelor's thesis work conducted at Turku University of Applied Sciences, Finland. The thesis researches consumer behavior in **mobile gaming** especially focusing on the factors affecting to the growing success of Free-to-play monetization model.

Completing the survey will take 5-10 minutes. Thank you very much for taking the time to give your answers.

Explanation of terminology that you may need to complete the survey:

Free to Play: To provide a game free for a download in an application store.

Premium: Charging a one time download payment for a gaming application in an application store.

Subscription: Payment to access a game based on the amount of time that the user wishes to spend in it

In-game purchase: A purchase made by a user for virtual goods, currencies or resources. In gaming terms this usually means extra levels or new equipment for the in-game character.

Thank you.

Best Regards,

Niko Kananen

Turku University of Applied Sciences

Have you ever downloaded a mobile gaming application from any of the application stores?
○ Yes
○ No
What is your gender?
O Male
Ö Female
How old are you?
O 12 or under
O 13-18
O 19-25
O 26-35
O 36-50
O 50 or over
How often do you play mobile games?
O Less than Once a Month
Once a Month
O 2-3 Times a Month
Once a Week
2-3 Times a Week
O Daily

Which of the application stores do you use?	
☐ Amazon App Store	
☐ App Store	
☐ BlackBerry World	
☐ Google Play	
☐ Samsung Apps	
☐ Windows Phone Store	
Other	
Out of all the mobile game applications you have downloaded in the past how many percent would you estimate to have been (The total sum of the percentages given has to be exactly 100)	N
Free-to-play: To provide a game free for a download in an application store Premium: Charging a one time download payment for a gaming application in application store Subscription: Payment to access a game application based on the amount of	
time that the user wants to spend in it	
Free-to-play	0
Premium	0
Subscription	0
Total	0

Please do rank the following motives according how important they are to your decision to download a mobile gaming application

(Number 1 being the most important motive. Please do use your mouse to drag the options according to your preference)

To kill time

To socialize in the mobile application game

To compete against other players

Convenience of a mobile application game over games played on other hardware (PC, Playstation.. etc.)

Influence of a social group

I first hear or read about a mobile gaming application from:

	Never	Almost never	Sometimes	Fairly often	Very often	Always
Application store	0	0	0	0	0	0
Social contacts	0	0	0	0	0	0
Gaming related websites and forums	0	0	0	0	Θ	0
Advertisement	0	0	0	0	0	0

Please rate how valuable the following types of information are for your decision to download a mobile gaming application:

				Neither Important			
	Not at all important	Very Unimportant	Somewhat Unimportant	nor	Somewhat Important		Extre Impo
Social contact's opinion of a game	0	0	0	0	0	0	(
Game's ranking in an application store	0	0	0	0	0	0	<
Game reviews written by others in an application store	0	0	0	0	0	0	(
Pictures of a game provided in an application store	0	0	0	0	0	0	(
Game-play video	0	0	0	0	0	0	(
Written description of the game in an application store	0	0	0	0	0	0	(
Posting or an article of a game on a gaming related website	0	0	0	0	0	0	(
							14 1

How important do you perceive the following factors when building trust between a consumer and an application store?

	Not at all important	Very Unimportant	Somewhat Unimportant	Neither Important nor Unimportant	Somewhat Important		Ext Imp
State of a art security	0	0	0	0	0	0	
Merchant legitimacy	0	0	0	0	0	0	
Fulfillment	0	0	0	0	0	0	
Customer control	0	0	0	0	0	0	
Atmosphere of an application store	Ö	0	0	0	0	0	
							4 -

How would you feel about providing your payment information for an application store?

- Big problem
- Moderate problem
- O Small problem
- O Very small problem
- No problem

Do you think Free-to-Play mobile games are more attractive to download than Premium or Subscription games simply because of the "free" price tag?

(Free-to-play: To provide a game free for a download in an application store Premium: Charging a one time download payment for a gaming application in an application store

Subscription: Payment to access a game application based on the amount of time that the user wants to spend in it)

0	Strongly Disagree
0	Disagree
0	Neither Agree nor Disagree
0	Agree
0	Strongly Agree

How much would you consider to be a fair one time download price for a premium mobile application game?

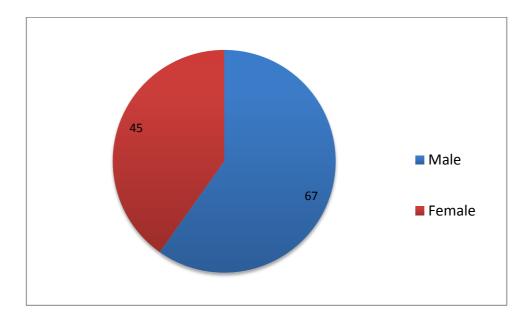
(Premium monetization model: Charging a one time download payment for a gaming application in an application store)

0	0,00 - 0,70€
0	0,70 - 1,50€
0	1,50 - 3,00€
0	3,00 - 5,00 €
0	5,00- 7,00€
	7, 00€ -

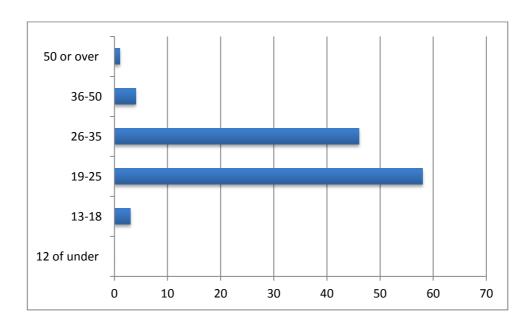
How much would you consider to be a fair price for a one time in-game purchase? (In-game purchase: A purchase made by a user for virtual goods, currencies or resources. In gaming terms this usually means extra levels or new equipment for the in-game character)	
□ 0,00- 4,00 €	
□ 4,00 - 8,00 €	
□ 8,00 - 16,00 €	
□ 16,00€ -	
How much would you consider a fair monthly subscription fee for a mobile application game? (Subscription: Payment to access a game based on the amount of time that the user wishes to spend in it)	à
□ 0,00-5,00€	
□ 5,00 - 10,00€	
□ 15,00€ -	
Have you ever made an in-game purchase? (In-game purchase: A purchase made by a user for virtual goods, currencies or resources. In gaming terms this usually means extra levels or new equipment for the in-game character)	
○ Yes	
○ No	
Have you ever made an in-game purchase in order to speed up the game process?	
O Yes	
○ No	

To what extend do you agree that other players or your social contacts outside o the game have influenced your in-game purchasing decision?
O Strongly disagree
O Disagree
O Neither Agree nor Disagree
O Agree
○ Strongly Agree
To what extend do you agree that an in-game purchase that you have made has enhanced the way other players or your social contacts outside of the mobile game see you?
○ Strongly Disagree
O Disagree
Disagree     Neither Agree nor Disagree
Neither Agree nor Disagree

# Repondent demographics



Respondent Gender



Respondent Age

# Popularity of application stores

