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International Business
Bachelor's Thesis
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ABSTRACT OF
BACHELOR'S THESIS

Author: Joel Hellsten
Title of thesis: How Functional and Aesthetic Virtual Goods Impact The Purchase Motivations and Attitudes

Date: **8 April 2019**

Degree: Bachelor of Science in Economics and Business Administration

Supervisor: Suzanne Altobello

Objectives

The main objectives of this study were to examine the differences functional and aesthetic virtual goods have on motivations behind virtual good purchases. In addition, this study examined the differences in attitudes towards functional and aesthetic virtual goods.

Summary

The subject of virtual goods and purchases has been widely studied in recent years. However, most of the studies fail to distinguish the different type of virtual goods and their individual qualities that have an impact on the purchase decision making process. A questionnaire based on previous literature (Hamari et al. 2017) was conducted to examine these differences. The results show that when functional and aesthetic virtual goods are examined separately the motivations and reasons behind purchase decision vary significantly. In addition, the study reveals that the different types of virtual goods face different attitudes.

Conclusions
The motivations /reasons connected with making gameplay smoother and more pleasant were found to be an important factor for functional virtual good purchases. Moreover, social interactions, competition and economic rationale were deemed to be significant drives for aesthetic virtual good purchases. In addition aesthetic virtual good were deemed to face more positive attitudes than functional virtual goods.

Key words: marketing, consumer behavior, attitudes, video games, virtual goods

See: http://web.lib.aalto.fi/en/helevoc/pdf/

Language: English

Grade:

Contents

1. Introduction

1.1 Background

The video game industry has grown rapidly through the past century as the value of the global video games market reached over $115 billion in 2018 (Statista, 2019) making it one of the biggest entertainment industries in the world. Throughout the years, the video game industry has evolved with technology and generated new business models for monetizing the games. At first, video games utilized the most basic retail model of selling the whole game as it is for a single retail price. Since then, many new ways of monetization have overtaken the game industry with the help of technological advanced such as internet. For example, nowadays games utilize maintained services for players in form of servers that are under constant updates and maintenance while offering the players different virtual goods for purchase inside the game. For the companies to stay on top of the competition they must keep the game relevant for the players after the initial purchase or download. These developments has brought many new challenges for the business models, game design and marketing of games (Hamari, 2015).

Nowadays, many games utilize the model of in-game purchases where players use real money for virtual goods. This form of “freemium” business model requires the game design to tempt players to do in-game purchases. Game developers often achieve this by degrading the game experience with artificial obstacles. This kind of business model has faced negative attitudes from the gaming community (Alha et al., 2014, Hamari, 2015, Hamari & Keronen 2017) as it can be considered as baiting, unethical and even creator of child gambling (Hern, 2017).

In-game purchases can be classified into two broad groupings: functional and aesthetic. Functional in-game purchases like these add something to the gameplay and game enjoyment e.g. more powerful tools or increases flow of the game. On the contrary, games also utilize in-game purchases that are purely for aesthetic purposes e.g. character

customization. Aesthetic virtual goods do not add anything to the gameplay itself but are still proven to be very efficient as a monetization tool, that is utilized by many game developers. Both types of virtual goods are popular ways to monetize the game and usually determine the way the game is designed.

The main goal of this thesis is to give deeper understanding about the motivations behind virtual good purchases by examining functional and aesthetic virtual goods' effects on the purchase motivations. In addition, attitudes towards functional and aesthetic virtual goods are studied. Moreover, this paper focuses on video games that are more traditional (e.g. Fortnite & Clash of Clans) and excludes social virtual worlds due to the different nature of the two.

After the introduction, the literature review will examine previous literature about virtual goods and video game monetization. In the methodology section, quantitative methods used in this study will be discussed, followed by an explanation of the series of statistical tests of hypotheses in the findings chapter. Furthermore, the results are analysed and discussed in the fifth chapter. Lastly, the main findings are presented, implications for international business are discussed and suggestions for further research are made.

1.2 Research Problems

The reasons behind in-game purchases have been widely studied in the recent years. Hamari (2015) studied the relationship between attitudes towards in-game purchases and game enjoyment. Moreover Hamari et al. (2017) investigated the concrete purchase motivations of in-game purchases and Cleghorn & Griffiths (2015) looked at the psychology behind in-game purchases. Most of the studies have supported the results of one another but there are also conflicts in some of the results between older and more recent studies. Even though the in-game purchases and virtual goods have been under the scope of several studies, only few of the past studies have distinguished the divergence of particular in-game purchases. Functional and aesthetic virtual goods possess different features and are likely to reveal different motives behind the purchase

decision. Therefore, distinguishing the nature of an in-game purchase is important. Moreover, some developers rely fully on just one kind of in-game purchase, which dictates a lot of the way the game is designed. The game design is crucial for successful and effective monetization inside the game. For marketing to be effective, motivations and reasons behind a purchase need to be clear. Therefore, deeper knowledge about the virtual goods and motivations behind the purchases are essential for videogame developers and businesses worldwide.

1.3 Research Questions and Objectives

- Comparison between motivations/reasons behind functional and aesthetic virtual good purchases by:
  Examining whether different purchase motivation dimensions (Hamari et al. 2017) have different levels of importance when comparing functional and aesthetic virtual goods. Focus is on dimensions that apply to both type of virtual goods (Social Interaction, Competition and Economical rationale).
- Finding out the differences in attitudes players have towards functional and aesthetic virtual goods.
- Increase understanding of the decision making process behind virtual good purchases.
- Help developers understand different motivations behind purchase decision process with different types of games.

2. Literature Review

2.1 Introduction

This literature review is going to assess previous studies made on virtual goods and motivations behind virtual good purchases. In addition, background of video game monetization is reviewed. The literature review will conclude with conceptual framework giving rationale to the methods used later in this thesis.

2.2 Video Game Monetization

Video games have presented opportunities and challenges for companies as the monetization tools have developed. In the early stages, developers used the more traditional revenue models where customers would get the whole game for one transaction. With the traditional single payment model, the purchased game is a ready product that cannot be tweaked or patched afterwards. As internet became widely accessible for the public, first online games started to gain popularity. Around the early 21st century Massive Multiplayer Online (MMO) games, e.g. World of Warcraft, had great success and reached mainstream popularity (Dillon & Cohen, 2013). World of Warcraft uses a monthly subscription model creating a continuous source of revenue that could be used to further develop the game. Players would pay monthly to access the ever-maintained game that is essentially never finished and will provide new content continually. In addition, the MMO games could be downloaded straight to the computer without having to purchase a physical copy of the game. Game developers could now cut of the intermediary and reach their customers directly (Dillon & Cohen, 2013). Moreover, inside the MMO games players started to trade virtual items using real currency. MMOs were the first step towards the monetization model that focuses on transactions during the gameplay.

As the internet population started to grow exponentially social networks like Facebook gained popularity and game developers started to produce games for this customer base consisting of general crowd (Dillon & Cohen, 2013). These social games are developed by a third party and usually utilize the free-to-play model. Due to the games' free-to-play feature, they gain a massive player base in a short period, even with games that are essentially unpolished and still in development. Already in 2010, Facebook's social gaming market achieved $1.3 billion in revenue (Statista, 2019). As this revenue was generated mainly by a general crowd or 'casual gamers' it was clear that the free-to-play model is successful in gathering a wider crowd for the games compared to the games which have initial purchase prize or subscription fees. Nowadays, free-to-play game model has become more popular than ever as four of the most played PC games are free-to-play games (Newzoo, 2018). The model's popularity can be seen in the app markets as well, as free apps make up around 90% of the apps both in the Google Play store and in the Apple App store (Statista, 2019). This kind of games main revenue source is usually the virtual goods that players use real money on.

2.3 Virtual Goods

Defining virtual goods is not as easy as one could think. Lehdonvirta (2009) argues that the simple definition "virtual goods are goods that exist in the virtual world" is too general and risks other e-commerce (e.g. mp3 files) to be classified as virtual goods, as other e-commerce items are usually referred as digital goods. Coming up with more specific definition Lehdonvirta (2009: 99) describes virtual goods as 'goods that are sometimes "inspired" by certain commonplace objects, but not "virtual versions" of them.'

Fairfield (2005) defined virtual goods as rivalrous, persistent and interconnected code that mimics the real world characteristics. Virtual goods are rivalrous, like many real world items, meaning one person's use of the good excludes others from simultaneously using it. This distinguishes virtual goods from other general data that shares characteristics with virtual goods but is not rivalrous. For example, this paper can be shared and read by multiple people at the same time, while virtual goods are only accessible for one person's

use at a time. Persistency of virtual goods refers to the property that the items do not wear off or disappear after certain amount of uses and that the item does not exist on one single computer (Fairfield, 2005). On the contrary, virtual assets could be categorized as virtual goods which brings dissonancy to the Fairfield's (2005) definition. For example, in many games players can use virtual key-like objects to open crates containing items. After each use the resource depletes usually by one, breaking the Fairfield's (2005) definition of persistency. Still this classification is essential for the characterization of virtual goods, as it is correct in most cases and it negates the possibility of virtual good existing only on one computer. With interconnectivity Fairfield (2005) denotes that a virtual good can be experienced by others although only one person may control it. There is still no definitive definition for virtual goods but the general understanding of the virtual goods' nature have achieved consensus among the academic world.

Lehdonvirta et al. (2009) argues that labeling goods as 'virtual' does not make them any less 'real', but only implies that they are computer mediated. Virtual goods possess same attributes as physical commodities as they carry social value beyond their physical qualities (Lehdonvirta et al. 2009). Moreover, it could be argued that virtual and physical goods follow mostly the same consumer culture observations when it comes to purchase motivations, attitudes etc. Lehdonvirta et al. (2009) speculates that virtual goods could even function as a substitute to physical goods in terms of social status. For example, trendy outfits are bought for similar reasons in virtual and physical world and the virtual counter-parts could outweigh the symbolic payload of physical goods in certain communities. In this paper virtual goods refer to digital in-game merchandise which can be used in the game environment.

2.3.1 Functional Virtual Goods

Similarly to physical goods, different virtual goods are bought for different purposes. Functional virtual goods are used to speed up or smoothen the gaming experience or to gain some new attributes to the gameplay itself. For example, functional virtual goods can

contain powerful weapons, armour and other boosts to increase the character attributes or give an advantage in the game (Hamari & Keronen, 2017).

Figure 1 in popular mobile game 'Clash of Clans' players can speed up upgrades with in-game currency that is purchased with real money.

2.3.2 Aesthetic Virtual Goods

In contrast to functional virtual goods, aesthetic virtual goods are bought for purely aesthetic reasons. Aesthetic virtual goods do not possess any attributes that affect the game and are essentially "useless" gameplay-wise (Martinez (2017) and can be considered as vanity items. On the contrary, aesthetic items hold social value and can act as an extended self (Belk, 2014). Virtual aesthetic goods are often customization

options for players' avatars that can act as a representations of users in virtual worlds (Altobello et al. 2010), or for characters and tools that are usable in the game.

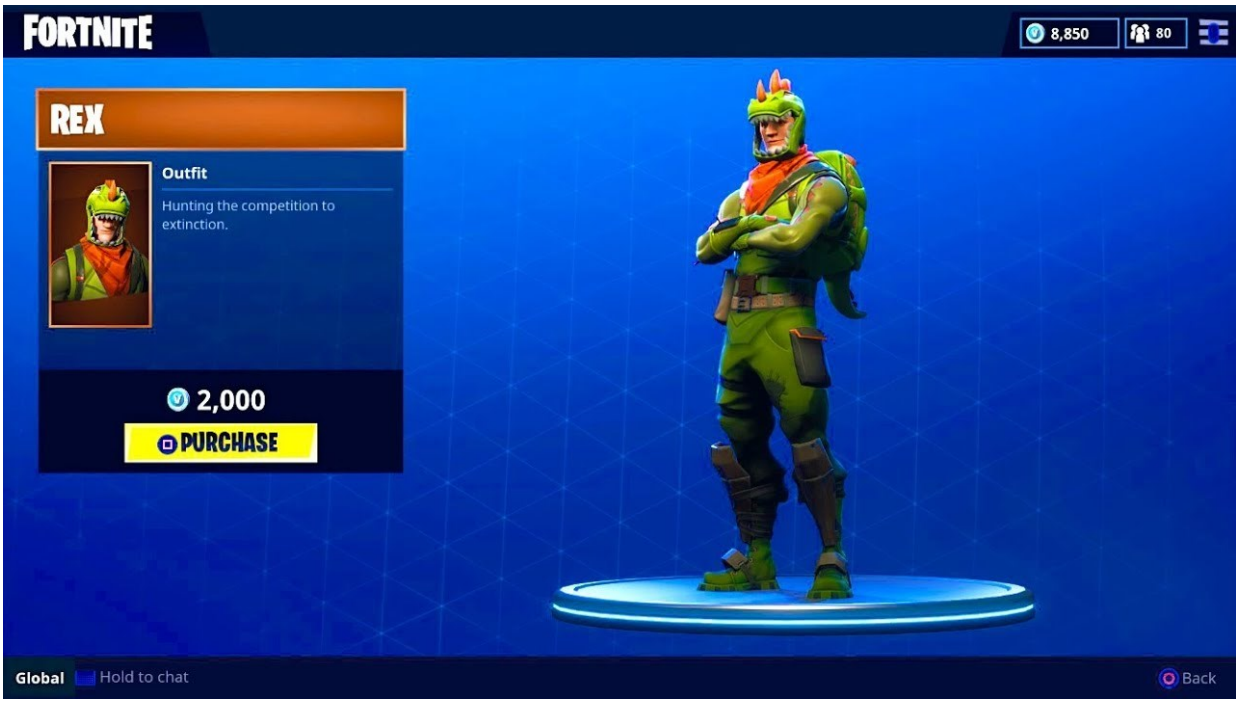

Figure 2 in Fortnite players can unlock costumes and emotes using in-game currency that is purchased with real money.

2.4 Virtual Good Sales as a Business Model

Selling virtual goods for real money has become one of the most used revenue models for games these days. As stated before, many games utilize the free-to-play model nowadays and rely on players making purchases inside the game itself. The virtual goods are used to support the gameplay in some functional aspect or to fulfil same kind of aesthetic and social needs as material goods do in the real world (Hamari & Lehdonvirta 2010, Lehdonvirta et al. 2009). Despite the huge popularity of free-to-play games, the developers have faced problems when trying to create demand for the virtual goods (Hamari, 2015). According to Pinchefsky (2013), only 2% of the mobile game users convert into paying customers. This has led to games having to balance between the game enjoyment and creating incentives to purchase virtual goods (Hamari & Keronen,

2017). The game has to be enjoyable enough for the player to keep playing but avoid being too enjoyable as the players might not then find the need to make purchases inside the game (Hamari, 2015). Moreover, customers do not choose the games to play according to the possible virtual goods the game contains; hence, the base platform has to be attractive enough for the customers to start using it (Hamari & Keronen, 2017). It is essential for the core game to be engaging and enjoyable on its own to acquire users thus creating customers for the virtual goods inside the game (Hamari & Keronen, 2017).

When the focus is on profits and monetization, the gameplay quality is degraded either on purpose or not, which increases the negative attitudes towards free-to-play business model from users and developers (Alha et al., 2014, Hamari, 2015, Hamari & Keronen 2017). This is especially true when it comes to games that focus on functional virtual items sales. For example, a popular mobile game Clash of Clans is based on the freemium business model that offers exclusively functional virtual goods. The game is free-to-play and is easy to pick up by anyone as in the beginning stages of the game unlocks and upgrades are easily attainable. However, as the game proceeds the upgrades that took two minutes could take up to two weeks in the later stages of the game. This process can be avoided if real money is invested in to the game. Players perceive these kind of functions as “pay-to-win” or even as cheating (Hamari & Keronen, 2017). The gratification curve of games can be questionable as different trophies and fast progress in the beginning of a game can hook people to a certain game. Later, when the progress is artificially slowed down users get frustrated and are more likely to buy the functional virtual goods to keep up the same gratification levels they got from the game in the beginning. Investigation between different attitudes towards games that rely on functional virtual good sales and games that use aesthetic virtual good sales is an intriguing topic, which has not yet been studied. This study suggests that virtual good monetization tools raise more negative attitudes in games that utilize functional virtual goods compared to games that utilize aesthetic virtual goods.

Hypothesis 1: Functional virtual good monetization tool face more negative attitudes than aesthetic virtual good monetization tools.

Games often lean towards one type of virtual good sales. Many popular games (eg. Fortnite) only sell aesthetic items within the game. As aesthetic items are bought to fulfil users hedonic and conspicuous consumption necessities (Martinez 2017, Lim & Seng 2010), which have nothing to do with the actual gameplay, the games design cannot rely on alluring users making purchases to overcome artificial obstacles inside the game. Contrariwise, the gameplay has to create value for these items in more abstruse ways that are not immediately apparent and concrete. These games often focus on the social aspects of a game, as social presence and interaction is found to strongly affect the players' purchase decision of virtual goods (Hamari & Lehdonvirta 2010, Hamari 2015, Hamari et al. 2017, Lehdonvirta 2009, Lim & Seng 2010). Creating demand for virtual goods that fulfil emotional, symbolic and hedonic needs (Martinez 2017) is a complicated task. Similarly to high-end brand clothing, the aesthetic virtual goods need to possess intricate value that justify the purchase of these vanity items for the players.

One recent innovation is to create artificial gratification system inside the game. For example, Fortnite (the third most played PC game in 2018 (Newzoo)), is a multiplayer game with essentially no plot line or goal, other than to win a particular game and then moving on to try and win the next game. This seemingly aimless underlying gameplay would arguably get dull if there were no seasonal upgrades and artificial challenges that developers implement to the game. One of the most successful ideas for Fortnite was the addition of "Battle Pass" (Figure 2). This quarterly renewed system gives players an opportunity to unlock different outfits and aesthetic accessories for their character according to how much they play the game and accomplish challenges that are brought with the Battle Pass. This system sets goals on top of the underlying gameplay, which encourages users to play the game more, because the game loses part of its intrigue if the content is not unlocked from the Battle Pass and the initial cost of upgraded Battle Pass ties players to be invested on levelling up (Cropp 2018). Moreover, continued use of a game has been discovered to positively affect the willingness to purchase virtual goods (Hamari 2015). The Battle Pass is acquired for free but for the player to unlock more and "better" accessories they have to spend 10$ to upgrade the battle pass. In a

multiplayer game like Fortnite, which is heavily focused on playing with friends and other people, the continuous presence of more valuable accessories is a great incentive for a player to upgrade the Battle Pass (Cropp 2018). The Battle Pass has somewhat shifted the goal of the game to unlocking as many accessories as possible, and created a similar environment to games that rely functional virtual good sales. The denied access for more valuable accessories acts as an artificial obstacle although it is entirely superficial and does not have an effect on the core gameplay. Even though everyone has access for exactly the same core gameplay, the upgraded Battle Pass is a very popular purchase, partly due to the fact that players with the ordinary Battle Pass can feel left out and desire to be “part of the club” (Cropp 2018). Fortnite’s Battle Pass is a good example on how the developers can add value on the aesthetic vanity goods by implementing layers of social pressure, status and accomplishment to the core gameplay that in itself can be very simple and frivolous.

Figure 3 Fortnite's Battle Pass. Upper row represents free content and lower row represents content that is available for upgraded battle pass.

2.5 Why Do People Buy Virtual Goods?

Purchase motivations behind in-game purchases can be studied from many perspectives and the studies do not always reach clear consensus among each other, which may be consequence of different games studied and the complexity of the topic. Virtual good sales have many elements that distinguish them from physical goods, therefore making most of the studies focusing on traditional goods obsolete on the subject. For example, Hamari & Keronen (2017) found that unlike traditional goods, the motivations behind virtual good purchases are tightly connected to the platform where they can be purchased. Moreover, the service design and its relationship to the formation of value is significant for virtual goods:

> The value of virtual goods is context-bound, and therefore, bound to the environment where they are usable in. Most factors that were found to be significant predictors of purchase behaviour (such as network effects, self-presentation, enjoyment, ease of use, flow and use of platform) are directly related to the aspects and design of the platform beyond the general attitudes towards virtual goods themselves. (Hamari & Keronen, 2017)

In addition, some motivations and reasons behind virtual good purchases differ from ordinary goods. Ho & Wu (2012) stated that prior marketing studies have shown customer satisfaction with products to have positive impact on the purchase intentions for the particular goods and dissatisfaction to have negative impact. The results of Ho & Wu's (2012) study also partially supported this hypothesis in the virtual environment. However, a study investigating the relationship between attitude towards virtual good purchase intentions and game enjoyment, showed game enjoyment to reduce the willingness to buy virtual goods (Hamari, 2015). Moreover, the study showed game enjoyment to increase the willingness to play the game more and that extensive use of a game increased the willingness to buy virtual goods (Hamari, 2015). As seen, here the factors that lead to purchase of virtual goods are complicated and no exhaustive answers have been produced. Neither of the studies clearly distinguish the functional and aesthetic virtual goods and the factors included in the different type virtual goods. Therefore, it is not clear whether the results would differ between the two types of virtual goods.

Many prior studies have tried to predict the purchase behaviour by focusing on the more abstract physiological reasons (Hamari et al. 2017, Hamari & Keronen, 2017). Hamari et al. (2017) researched concrete reasons behind virtual good purchases, contradictory to the previous studies focusing on the latent physiological reasons. Hamari et al. (2017) 'composed a measurement instrument for identifying between different motivations and reasons to purchase in-game content by triangulating from top-grossing games, existing research, and from discussions with game industry specialists'. The reasons were then converted into a survey which was distributed to free-to-play game players (N = 519) with virtual good purchase history. The study collected 19 reasons behind in-game purchases and assembled them into following categories: 1) unobstructed play, 2) Social interaction, 3) Competition, 4) Economical rationale, 5) Indulging the children, and 6) Unlocking content (Hamari et al. 2017). The study gives specific reasons for the rationale behind virtual good purchases, which gives other studies a clearer base for measurements and tests. Therefore, this paper is going to partly utilize these dimensions as the base for measuring the motivations and reasons behind virtual good purchases. The fifth dimension (Indulging children) is left out because the aim of this the study is to distinguish the effects different types of virtual goods have on the purchase decision. Therefore, in this case, purchases made by third party are meaningless. In addition, the purchase motivation 'avoiding spam' was removed because this study focuses on traditional video games and excludes social virtual worlds as discussed in the introduction chapter.

The results of Hamari et al.'s (2017) do not distinguish functional and aesthetic virtual items from one another. It is also mentioned in the paper that one of the limitations of the research is the fact that some of the purchase motivations used might be important in only certain types of games (Hamari et al. 2017). Implementing different type of virtual goods as added factors to the study can produce interesting results. This study suggests that the Hamari et al.'s (2017) dimension, which apply to both functional and aesthetic virtual goods (Social Interaction, Competition and Economical Reasoning), would have different level of importance when functional and aesthetic virtual goods are examined separately.

Hypothesis 2: Hamari et al's (2017) purchase motivation dimensions have different levels of importance when functional and aesthetic virtual goods are examined separately.

2.6 Conceptual Framework and Conclusion

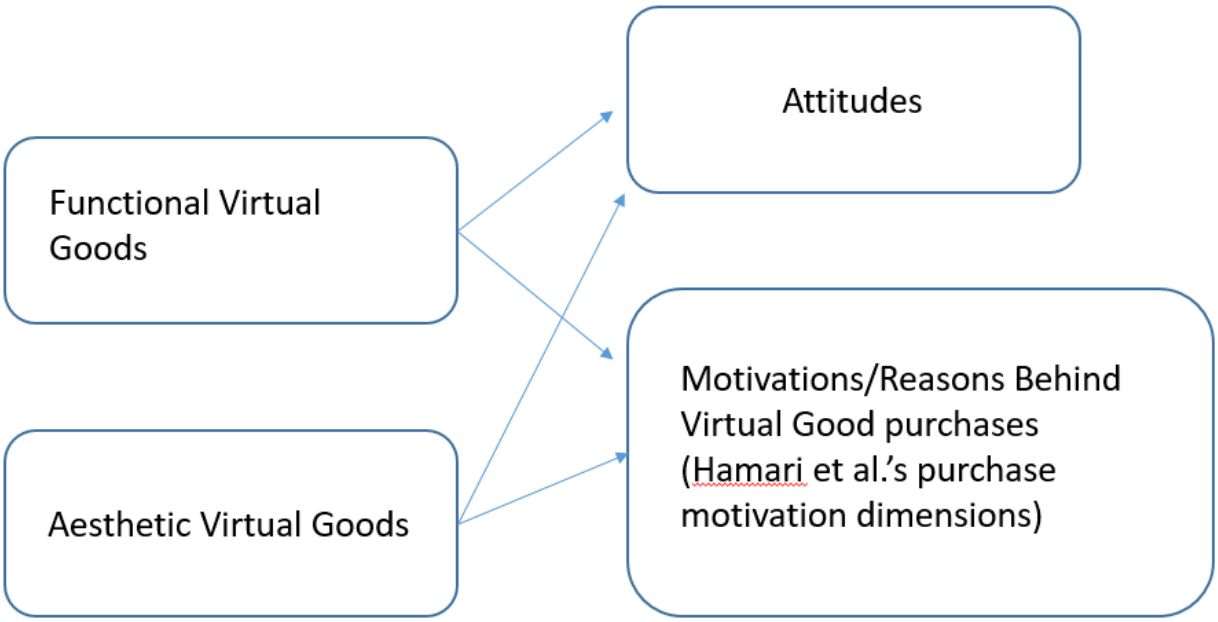

Figure 4 Conceptual Framework

The topic of virtual goods have been investigated recently from many perspectives. The factors that drive in-game purchases are ultimately connected to various concepts that are not all very well understood yet. Although, latent physiological factors do influence the purchase decision, different studies often lean towards somewhat different directions and the concept as a whole is still obscure. This is one of the reasons this study is going to utilize the six dimensions from study focusing on concrete purchase motivations (Hamari et al. 2017) as the base for motivations and reasons behind the virtual good purchases (Figure 4). The framework suggests that different dimensions of Hamari et al. (2017) have divergent levels of impact when the functional and aesthetic virtual goods are separated. In addition, the attitudes (Figure 4) towards these different types of virtual goods will be

explored. According to previous studies, it is reasonable to hypothesize that functional virtual goods face more negative attitudes compared to the aesthetic virtual goods.

Games relying on different type of virtual goods differ from each other's significantly, as the distinct virtual goods hold individual properties that the developers can take advantage of. On the contrary, recent innovations (e.g. Fortnite's Battle Pass) has brought the monetization of functional and aesthetic virtual goods closer to each other. All in all this paper's aim is to give new insight on the effects that the properties of functional and aesthetic items have on the purchase decision-making process. As the subject of this study is broad it could be further studied to reach results that are more comprehensive. In addition, the new types of monetization tools that have recently emerged (e.g. Fortnite's Battle Pass) bring many opportunities for further investigations.

3. Methodology

3.1 Data Collection

In this study, both secondary and primary data were used. Secondary data is discussed in the literature review. Other studies were used to cover what has already been studied about the subject and used as a base for the conceptual framework for this study. Hamari et al.'s (2017) study about concrete virtual good purchase motivations was one of the key sources on which this paper's survey was built on. Other studied were also used for general understanding of the topic and to form a valid survey that correctly measures the objectives of this study.

Because this study examines the effects virtual good types have on decision-making process and consumer behavior, quantitative method was deemed most suitable. In addition, this paper utilizes Hamari et al.'s (2017) study that also used quantitative methods for the results. Functional and aesthetic variables are used as a moderator to gain further knowledge out of the Hamari et al.'s (2017) study. Furthermore, the qualities quantitative research has enabled easier and more precise analysis that can be generalized for the population.

The non-probability convenience sampling method was used to gain access to as many respondents as possible in a short time. The survey was distributed via Reddit.com to several subreddits such as r/Suomi and r/SampleSize and was also shared to Aalto university students' community webpages. The survey was active for 5 days. With the link to the survey, a brief introduction to the topic was posted. In addition, the respondents were informed about the anonymity of the survey and that the data would only be used for this paper.

3.2 Questionnaire Design

The questionnaire consisted of five pages. In the first page, the respondents were introduced to the purpose of this study and to the topic itself that is virtual goods. The first question separates people to three groups: Ones who have made virtual good purchases in the past 30 days, ones who have made virtual good purchases but not in the past 30 days and ones who have not made virtual good purchases. If the latter was chosen by participants the survey would end after the first page. The next two questions examined whether the respondents preferred multiplayers or single player games and whether they play more with friends or alone. Lastly, the final question examined the different types of virtual goods people might have bought with a 'check all that apply' question.

The second page introduced functional and aesthetic virtual goods and their descriptions. The respondents were questioned if they had made a functional and/or aesthetic virtual good purchase in the past using real money. These questions screened the participants in the following groups:

1. People who have only made functional virtual good purchases.
2. People who have only made aesthetic virtual good purchases.
3. People who have made both functional and aesthetic virtual good purchases.

The ones who had only made functional purchases would continue to page number 3 but skip page 4, which contains the aesthetic virtual good questions. The ones who had only made aesthetic purchases would skip page 3 and continue straight to page 4. People who had purchased both virtual goods would continue to answer questions on every page.

On the third page, the participants were guided to answer a series of Likert-scale (scale 1-5) questions, which examine the reasons behind functional virtual good purchases. These questions were based on Hamari et al.'s (2017) six dimensions of purchase motivations. These dimensions were slightly modified for reasons mentioned in the literature review chapter 2.5. In addition, the page included a separate Likert-scale matrix with questions that examine the attitudes towards functional virtual goods and game

design that is often used to sell functional virtual goods. Lastly, the final question requested participants to report how much real money they use for virtual goods per month. These exact same questions were formed for aesthetic virtual goods on the page number 4, excluding one Likert-Scale row concerning the strategy of degrading gameplay.

Although some of the Likert-scale options do not fit the description of functional or virtual good purchases, they were included in both pages three and four. The purpose of exactly the same questions for functional and aesthetic virtual good purchases is to insure the valid comparison of the two. In addition, absence of some key reasons behind purchases could confuse respondents and distort the data. Lastly, the Likert-scale questions partly acted as proofing for the fact that the respondents understood the function of both types of virtual goods (e.g. people should disagree with purchasing aesthetic items to speed up timers).

In the last page of the questionnaire the respondents were asked to estimate the amount of hours they use to play video games per week. In addition, the page included demographic questions, such as age, gender and nationality. The questionnaire can be found in the Appendix 1.

3.4 Limitations

There are various limitations that hinder this study. Many of these limitations were connected to the quantitative research method used in this paper. Most notably, the sample size for this study was very small (N=125). The number of applicable respondents for different tests decreased even further due to inadequate answers. For example, when conducting paired sample test only 35 responses were valid. Because of the small amount of valid responses used in each test the results can be unreliable if generalized for the population. Furthermore, the convenience sampling caused unequal distribution in demographics almost 90% were male. Contrary to the popular belief that gaming is

greatly dominated by males, 45% of computer video gamers in the United States were females in 2918 (Statista, 2019). This study failed to resemble this level of gender diversity. In addition, over 85% of the respondents were from Finland, revealing lack of diversity in national origin as well.

Some of the limitations mentioned by Hamari et al. (2017) transfer to this research as well. The topic of virtual good purchase motivations is broad and complicated, which inevitably sets variables and uncertainty to the research. Purchase motivations change from game to game even in the same genre therefore making definite comparisons impossible. In addition, the previously discussed small sample size could jeopardize a reliable comparisons between this research and Hamari et al.'s (2017). Moreover, it is mentioned in the Hamari et al.'s (2017) paper that the purchase motivations that were acquired in that study are likely to not represent all of the possible purchase motivations. These motivations were used in this paper as well, therefore passing the same problems to this research. Lastly, some of the subscales used in Hamari et al.'s (2017) paper had low reliability scores in this paper (Aesthetic Social Interaction & Aesthetic Economical Rationale), which can compromise the validity of some of the results.

Attitude is hard to define and convert into questions measuring it. This is why the questions concerning attitude were not converted into subscale, but tested separately. The questions used certainly do not give comprehensive view about the broad subject of attitudes. The questions and tests give more of a guideline to what people think about certain aspects of functional and aesthetic virtual goods.

4. Findings

4.1 Sample Profile

The total number of respondents was 125. Firstly, three responses were removed due to invalid answers. Moreover, 21 responses were deleted because no virtual good purchases had been made. Further 17 responses were removed due to participants answering no to both functional and aesthetic virtual good purchase questions (questions 5 & 6, Appendix 1) leaving the total respondents examined to 84. The demographic data of the survey is indicated on the following table:

Gender	N	%
Male	75	89.3
Female	7	8.3
Prefer not to say	2	2.4
Age (years)		
-19	6	7.1
20-29	51	60.7
30-39	25	29.8
40-	2	2.4
Nationality		
Australia	1	1.2
Canada	1	1.2
Germany	3	3.6
Finland	72	85.7
United Kingdom	2	2.4
Netherlands	1	1.2
Sweden	1	1.2
United States	3	3.6
Playtime (h per week)		

-9	17	20.2
10-19	28	33.33
20-29	19	22.61
30-39	9	10.7
40-	11	13.1

Figure 5 Demographic table of respondents.

4.2 Reliability analysis

This study examined the differences in Hamari et al.'s (2017) dimensions when functional and aesthetic virtual goods act as moderators. Therefore, the same subscales were used with slight modifications to better suit the goal of this study. The following table shows each subscale used in the study with the items included and Cronbach's Alpha for each subscale.

Subscale	**Items**	**Cronbach's Alpha**
Functional_Unobstructed_play	Speeding timers	0.749
	Avoiding repetition	
	Reaching completion	
	Continuing play	
	Protecting achievements	
Functional_Social_Interaction	Playing with friends	0.713
	Personalization	
	Giving gifts	
	Special event	
	Friends use money too	
Functional_Competition	Showing off achievements	0.743
	Showing off to friends	
	Becoming the best	

Functional_Economical_Rationale	Reasonable pricing (free-to-play)	0.699
	Supporting a good game	
	Low price (special offers)	
	Investing in a hobby	
Aesthetic_Unobstructed_play	Speeding timers	0.706
	Avoiding repetition	
	Reaching completion	
	Continuing play	
	Protecting achievements	
Aesthetic_Social_Interaction	Playing with friends	0.518
	Personalization	
	Giving gifts	
	Special event	
	Friends use money too	
Aesthetic_Competition	Showing off achievements	0.776
	Showing off to friends	
	Becoming the best	
Aesthetic_Economical_Rationale	Reasonable pricing (free-to-play)	0.648
	Supporting a good game	
	Low price (special offers)	
	Investing in a hobby	

Figure 6 Subscales and reliability analysis

4.3 Paired Samples Test

From the 84 examined respondents 35 had made both functional virtual good and aesthetic virtual good purchases. Paired samples test was conducted to see whether the

importance of the purchase motivation dimensions (Hamari et al. 2017) would differ when comparing functional and aesthetic virtual goods.

As expected, there was very significant difference in the scores for people purchasing functional virtual goods (M=2.09, SD=0.89) in the 'Unobstructed Play' subscale, compared to aesthetic virtual goods (M=1.44, SD=0.56) (t (34) =4.14, p=0.000). As mentioned previously not all of the dimensions fit the description of either aesthetic virtual good purchases and were included due to reasons discussed in the questionnaire design chapter. These results support the intended proofing of the questionnaire.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Funct_Unobs_play	2,0857	35	,89480	,15125
	Aest_Unobs_play	1,4400	35	,55688	,09413

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Funct_Unobs_play - Aest_Unobs_play	,64571	,92174	,15580	,32908	,96234	4,144	34	,000

Figure 7 Unobstructed Play: Functional vs. Aesthetic

There was no significant differences in the scores for people purchasing functional virtual goods (M=2.36, SD=0.75) in the 'Social Interaction' subscale, compared to aesthetic virtual goods (M=2.51, SD=0.68) (t (34) =-1.32, p=0.20). This contradicts with the expected differences in dimensions (Hypothesis 2).

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Funct_Social	2,360	35	,7464	,1262
	Aest_Social	2,5086	35	,67796	,11460

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Funct_Social - Aest_Social	-,14857	,66570	,11252	-,37725	,08011	-1,320	34	,196

Figure 8 Social Interaction_ Functional vs. Aesthetic

A significant difference was found in the scores for people purchasing functional virtual goods (M=2.36, SD=0.75) in the 'Competition' subscale, compared to aesthetic virtual goods (M=2.51, SD=0.68) (t (34) =-1.32, p=0,196). The test suggests that when purchasing aesthetic virtual goods the competitive aspects have stronger impact on purchase motivations compared to functional virtual goods. This result supports the Hypothesis 2.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Funct_Comp	2,0381	35	,99925	,16890
	Aest_Comp	2,4476	35	1,14602	,19371

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Funct_Comp - Aest_Comp	-,40952	,96706	,16346	-,74172	-,07733	-2,505	34	,017

Figure 9 Competition: Functional vs. Aesthetic

There was a significant difference in the scores for functional virtual goods (M=3.40, SD=0.92) in the 'Economical Rationale' subscale, compared to aesthetic virtual goods

(M=3.98, SD=0.84) (t (34) =-3.46, p=0.001). The test suggests that when purchasing aesthetic virtual goods the economic rationale has a stronger impact on purchase motivations compared to functional virtual goods. This result supports the Hypothesis 2.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Funct_Eco_rat	3,4000	35	,91595	,15482
	Aest_Eco_rat	3,9810	35	,83995	,14198

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Funct_Eco_rat - Aest_Eco_rat	-,58095	,99478	,16815	-,92267	-,23924	-3,455	34	,001

Figure 10 Economical Rationale: Functional vs. Aesthetic

As expected, there was a very significant difference in the scores for functional virtual goods (M=3.86, SD=1.35) in the 'Unlocking Content' subscale, compared to aesthetic virtual goods (M=1.92, SD=1.20) (t (34) =7.60, p=0.000). As the purchase motivation 'Unlocking Content' heavily refers to functional virtual goods, the results were not surprising and confirmed the proofing discussed in questionnaire design chapter.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Funct_unlock_cont	3,8571	35	1,35349	,22878
	Aest_unlock_cont	1,9143	35	1,19734	,20239

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Funct_unlock_cont - Aest_unlock_cont	1,94286	1,51352	,25583	1,42294	2,46277	7,594	34	,000

Figure 11 Unlocking Content: Functional vs. Aesthetic

Paired samples test was then conducted on the questions concerning attitudes to examine the differences in attitudes people have towards functional and aesthetic virtual goods. The test can be seen in the following Figure 12.

First, the question ‘I don’t mind using money on functional/aesthetic virtual good purchases’ (Appendix 1) was tested. There was a very significant difference between functional virtual goods (M=1.83, SD=1.18) and aesthetic virtual goods (M=3.83, SD=1.04) (t (34) =-7.91, p=0.000). This result supports the Hypothesis 1.

Secondly, the question ‘I feel like it is socially acceptable to use real money on functional/aesthetic virtual goods’ (Appendix 1) was tested. There was no significant difference between functional virtual goods (M=3.23, SD=1.11) and aesthetic virtual goods (M=3.69, SD=0.99) (t (34) =-1.93, p=0.062). This result contradicts with Hypothesis 1.

Lastly, the question ‘I am usually pleased with the functional/aesthetic virtual good content that I purchase’ (Appendix 1) was tested. There was a significant difference between functional virtual goods (M=3.14, SD=0.91) and aesthetic virtual goods (M=3.77, SD=0.97) (t (34) =-3.60, p=0.001. This result supports the Hypothesis 1.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Funct_Dont_mind_using_money	1,8286	35	1,17538	,19868
	Aest_Dont_mind_using_money	3,8286	35	1,04278	,17626
Pair 2	Funct_socially_acceptable	3,2286	35	1,11370	,18825
	Aest_Socially_acceptable	3,6857	35	,99325	,16789
Pair 3	Funct_Pleased_with_content	3,1429	35	,91210	,15417
	Aest_Pleased_with_content	3,7714	35	,97274	,16442

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Funct_Dont_mind_using_money - Aest_Dont_mind_using_money	-2,00000	1,49509	,25272	-2,51358	-1,48642	-7,914	34	,000
Pair 2	Funct_socially_acceptable - Aest_Socially_acceptable	-,45714	1,40048	,23672	-,93822	,02394	-1,931	34	,062
Pair 3	Funct_Pleased_with_content - Aest_Pleased_with_content	-,62857	1,03144	,17434	-,98288	-,27426	-3,605	34	,001

Figure 12 Attitudes: Functional vs. Aesthetic

4.4 One-Sample Test

From all the respondents 59 had purchased functional virtual goods and 62 had bought aesthetic virtual goods. One-sample t tests were conducted to compare the scores of the present study and the scores of Hamari et al.'s (2017) study. The test results can be seen in the following Table 13.

There was a significant difference between present study and Hamari et al.'s (2017) study when examining the 'Social Interaction' subscale. Functional virtual goods scored much lower (M=2.05, SD=0.83) when comparing to the Hamari et al.'s (2017) scores (M=2.66, SD=1.35). This result indicates that the motivations in 'Social Interactions' subscale do not have as big of an impact on the purchase decision processes in the case of functional virtual goods. This result supports the Hypothesis 2.

In the ‘Unobstructed Play’ subscale, the scores of both functional (M=2.17, SD=0.90) and aesthetic (M=1.44, SD=0.52) virtual goods were significantly lower than in Hamari et al.’s (2017) study. This could be due to small sample size of the present study, different survey settings or question formatting. This result will be further discussed in the chapter 5.

In the ‘Competition’ subscale, Aesthetic (M=2.45, SD=1.16) virtual goods scored significantly higher comparing to the Hamari et al.’s (2017) scores. This result indicates that the motivations in the ‘Competition’ subscale has bigger impact on aesthetic purchases. This result supports the Hypothesis 2.

Finally, in the ‘Economic Rationale’ subscale functional (M=3.30, SD=0.96) virtual goods scored significantly lower than in the Hamari et al.’s (2017) study. Again, both types of virtual goods scored lower in the present study, but the score of functional virtual goods was significantly lower and the results support the hypothesis 2.

One-Sample Test: Comparison of present study and Hamari et al.’s (2017) study

	Present Study					
	Functional n=59		Aesthetic n=62		Hamari et al. (2017)	
Scale	Mean	SD	Mean	SD	Mean	SD
Social Interaction	2.05**	0.83	2.54	0.66	2.66	1.35
Unobstructed Play	2.17**	0.90	1.44**	0.52	2.643	1.50
Competition	1.85	0.92	2.45**	1.16	1.88	1.53
Economic Rationale	3.30**	0.96	3.70	0.93	4.04	.24938

** One-sample t-test significantly different at p< .001

Figure 13 One-Sample Test: Present study vs. Hamari et al. (2017)

4.5 Independent Samples Test

Out of all the respondents 23 had purchased only functional virtual goods and 26 had purchased only aesthetic goods. An independent samples test was conducted to examine the differences between purchase motivations when comparing functional and aesthetic virtual goods.

There was significant difference between the scores of functional (M=1.63, SD=0.76) and aesthetic (M=2.64, SD=0.60) (t (47) =-5.16, p=0.000) virtual goods when examining the 'Social Interaction' subscale. The results indicate that the motivation variables in 'Social Interaction' subscale have more influence on the people who purchase aesthetic virtual goods. This result supports Hypothesis 2.

As expected, there was a significant difference between the scores of functional (M=2.37, SD=0.90) and aesthetic (M=1.45, SD=0.48) (t (47) =-4.60, p=0.000) virtual goods when examining the 'Unobstructed Play' subscale. This result supports the proofing discussed in the questionnaire design chapter (3.2).

There was a significant difference between the scores of functional (M=1.60, SD=0.72) and aesthetic (M=2.50, SD=1.19) (t (47) =-3.14, p=0.003) virtual goods when examining the 'Competition' subscale. The results show that the motivation variables in 'Competition' subscale have more influence on people who purchase aesthetic virtual goods. This result supports Hypothesis 2.

There was no significant differences between the scores of functional (M=3.25, SD=0.94) and aesthetic (M=3.42, SD=0.81) (t (47) =-0.69, p=0.493) virtual goods when examining the 'Economical Rationale' subscale. This result contradicts with the Hypothesis 2.

Group Statistics

	Functional or Aesthetic purchase	N	Mean	Std. Deviation	Std. Error Mean
Final social subscale based on functional OR aesthetic purchase	Functional purchase only	23	1.6348	.75715	.15788
	aesthetic purchase only	26	2.6385	.60404	.11846
Final unobs play subscale based on functional OR aesthetic purchase	Functional purchase only	23	2.3739	.89505	.18663
	aesthetic purchase only	26	1.4462	.47769	.09368
Final comp subscale based on functional OR aesthetic purchase	Functional purchase only	23	1.6087	.72232	.15061
	aesthetic purchase only	26	2.5000	1.17851	.23113
Final eco subscale based on functional OR aesthetic purchase	Functional purchase only	23	3.2500	.94448	.19694
	aesthetic purchase only	26	3.4231	.80861	.15858

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Final social subscale based on functional OR aesthetic purchase	Equal variances assumed	.454	.504	-5.156	47	.000	-1.00368	.19465	-1.39527	-.61208
	Equal variances not assumed			-5.085	42.024	.000	-1.00368	.19738	-1.40200	-.60536
Final unobs play subscale based on functional OR aesthetic purchase	Equal variances assumed	8.702	.005	4.600	47	.000	.92776	.20167	.52205	1.33347
	Equal variances not assumed			4.443	32.659	.000	.92776	.20882	.50274	1.35278
Final comp subscale based on functional OR aesthetic purchase	Equal variances assumed	7.304	.010	-3.141	47	.003	-.89130	.28381	-1.46225	-.32036
	Equal variances not assumed			-3.231	42.111	.002	-.89130	.27587	-1.44798	-.33462
Final eco subscale based on functional OR aesthetic purchase	Equal variances assumed	.306	.583	-.691	47	.493	-.17308	.25042	-.67686	.33071
	Equal variances not assumed			-.685	43.635	.497	-.17308	.25285	-.68278	.33663

Figure 14 Independent Samples Test: Functional vs. Aesthetic

5. Discussion and Analysis

The aim of this thesis was to gain further knowledge about players' consumer behavior behind virtual good purchases by examining the differences between functional and aesthetic virtual goods. In addition, the differences in attitudes towards different types of virtual goods were studied.

Hamari et al.'s (2017) study on concrete purchase motivations acquired a list of purchase motivations through careful triangulation, giving a clearer understanding of the factors that drive the virtual good purchases. It is still impossible to include all possible factors that lead to a purchase due to vast amount of different games with different designs and mechanics. However, studies like these give useful guidelines for developers about what to focus on when developing games and creating a monetization system around the game. Tests conducted in this thesis attempted to further improve this knowledge by separating the virtual goods into two groups: functional and aesthetic. As mentioned earlier, games that use virtual good purchases as a monetization tool often lean towards one kind of virtual goods. Therefore, knowing more about the particular virtual good type and its effects on the player and requirements for the game design are essential for a successful game.

Even though this thesis suffered from some limitations, such as small sample size, the results point out clear and significant differences between the aesthetic and functional virtual goods. First of all, the proofing system was deemed to be working as all three test resulted in functional virtual goods having higher score than aesthetic virtual goods in the 'Unobstructed Play' subscale. In addition, functional virtual goods scored much higher in the 'Unlocking Content' question. These results give more certainty to the validity of the respondents' answers in this thesis.

The results suggest that the motivation variables included in the 'Social Interaction' subscale (Figure 6), are deemed slightly more relevant when purchasing aesthetic virtual goods. While the paired samples test showed no significant results, one-sample test

revealed the functional virtual good score to be much lower than the score in the Hamari et al.'s (2017) study. In addition, the Independent samples test showed aesthetic virtual goods to score significantly higher compared to functional virtual goods. These results support the idea that similarly to physical aesthetic items, such as clothes, aesthetic virtual goods carry social value beyond their physical or virtual qualities (Lehdonvirta et al. 2009). Factors, such as playing with friends and special events, were strongly associated with the reasoning behind aesthetic virtual good purchases. The aesthetic virtual goods do not add anything to the gameplay and need to create value from something else, e.g. social interaction. The true value of aesthetic items is created in the community through different social interactions with the desire to fulfil users hedonic and conspicuous consumption necessities (Martinez 2017, Lim & Seng 2010). Therefore, the developers that plan to monetize their game using aesthetic virtual goods should focus on the social aspects of the game.

As seen in the Figure 15, in the 'Competition' subscale (Figure 6), all of the three tests suggest that competitive factors drive aesthetic virtual good purchases significantly more than functional virtual good purchases. This result can be somewhat surprising as the subscale includes variables such as 'becoming the best' and 'showing off achievements'. Especially the 'becoming the best' variable could be associated more with functional virtual goods that actually have an impact on the gameplay. It can be argued that the perceived skill level of a player is strongly associated with the status that "high level" aesthetic goods bring. For example, in Fornite the character outfits have levels of their own. Higher the level, the more difficult or expensive the outfit is to unlock. In addition, the top tier outfits are usually rare and easily distinguishable from other outfits. Other players appear to assume the particular players investment and skills in the game according to the "level" of outfits they are using. Therefore, players that have high skill level want to show it off to other players. Apparently, this showing off to the community and friends is strongly tied to aesthetic side of the game rather than functional aspects. This is a reasonable conclusion, as games have become more visually appealing than ever and, similarly to real world, the first thing one notices in other players/people is their appearance.

In the ‘Economic Rationale’ subscale (Figure 6), motivation variables seem to have slightly more impact on the aesthetic virtual good purchases. With the paired samples test, people who had purchased both types of virtual goods rated these reasons to be significantly more important when it comes to aesthetic items, while with the one-sample test functional virtual goods scored significantly lower than aesthetic virtual goods and Hamari et al.’s (2017) corresponding subscale. However, with the respondents who had bought only one type of virtual good, aesthetic and functional virtual goods had no significant differences between them. Still the other tests display some significant results that need to be assessed. The significant differences can be explained with the different qualities functional and aesthetic virtual goods possess. The individual motivations/reasons in the ‘Economical Rationale’ subscale (Figure 6) are connected to impulse buying or more careless consumer behaviour in their nature. The motivations/reasons are less invested in the virtual good itself and more about the opportunity or situation in which the virtual goods are purchased. For example, it can be argued that the ‘low price’ reason applies to physical vanity items as well. Even if the consumer has not planned to purchase this particular item, the discount can often lure to make the purchase. It is reasonable to think that this theory is more applicable with vanity items, such as the aesthetic virtual goods, than with functional goods that people need but possibly do not actually want to purchase (e.g. oil for car). Usually when a consumer is in need of a functional good, such as a new vacuum cleaner, they know what they are looking for and go to purchase the item with the particular good in their mind. On the contrary, aesthetic purchases have a freer nature to them as they are not needed for anything and one can simply buy them out of pure desire. People do not buy functional virtual goods spontaneously out of pure desire. Functional virtual goods are needed for the different aspects of the game and usually more planning is required before the purchase. In conclusion, the Hypothesis 2 was mostly proven correct.

According to the paired samples test people are more willing to use money on aesthetic virtual goods than functional virtual goods. This could be due to the previously discussed nature of the two types of virtual goods. Aesthetic virtual goods are usually purchased

with desire to fulfil hedonistic needs. As these purchases are not forced in the gameplay, they feel more autonomous and therefore leave the player feeling better about the purchase. On the contrary, functional virtual good purchases can be somewhat forced and leave the players battling with cognitive dissonance. This theory is supported by the paired samples test result, which indicated players to be significantly more satisfied with the aesthetic virtual goods they have purchased. In conclusion, aesthetic virtual goods seem to face more positive attitudes, confirming the Hypothesis 1.

In the current study respondents were asked to think about the past virtual good purchases they had made before the Likert-scale question about the motivations that led to the purchase. This may have enabled more accurate and thoughtful answers in the Likert-scale questions. Moreover, the separation of functional and aesthetic virtual goods forced respondents to think about what motivations/reasons they think are fit to each of the virtual good types and to their consumer behaviour. On the contrary, Hamari et al.'s (2017) research was broad in the sense that it measured all off the purchase motivations/reasons together in general. This may have led to somewhat inflated scores and vague results on Hamari et al.'s (2017) study. However, in this thesis the virtual good types were specified which could have led to more accurate results. Therefore, this thesis could be used with the Hamari et al.'s (2017) study when purchase motivations and reasons behind virtual good purchases are investigated.

	Paired Samples Test	One-Sample Test (vs. Hamari et al. 2017)	Independents Samples Test
Unobstructed Play	Functional Significantly Higher than aesthetic	Both significantly below the comparison mean	Functional significantly higher than aesthetic
Social Interactions	No significant differences	Functional significantly below the comparison mean	Aesthetic significantly higher than functional
Competition	Aesthetic significantly higher than functional	Aesthetic significantly above the comparison mean	Aesthetic significantly higher than functional
Economic Rationale	Aesthetic significantly higher than functional	Functional significantly below the comparison mean	No significant differences

Figure 15 Summary of the significant results. Aesthetic ■ Functional. ■

6. Conclusion

6.1 Main findings

The goal of this thesis was to increase knowledge about the motivations and reasons behind virtual good purchases by examining the functional and aesthetic virtual goods separately. In addition, the different attitudes that the two types of virtual goods face, were examined. With the tests conducted on the questionnaire data, significant differences were found. As expected, the motivations and reasons that are connected with making the gameplay smoother and avoiding artificial obstacles influence the functional virtual good purchases more than aesthetic virtual good purchases. However, social interactions, competition and economic rationale seem to drive aesthetic virtual good purchases more than functional virtual good purchases. Lastly, the attitudes appear to favour the aesthetic virtual goods, as players are more willing to use money on them and are more pleased with the purchases they have made.

6.2 Implications for International Business

This thesis offers more in depth look to the motivations and reasons behind virtual good purchases. This information is vital for game companies and developers, especially if the company's product is a free-to-play game. In free-to-play games, knowing the customers desires and consumer behaviour is particularly important as there is no initial payment for the game and all of the revenue has to be made from the players who are already playing the game. For players to make a purchase, companies have to create incentives that justify spending money on additional content for a game that players already have access on. In order to create working incentives, the companies need to know which motivations drive the purchase decision in their game based on the virtual good type the game is using.

When management decision are made, accurate data and correct interpretation of the data is vital. This thesis offers deeper understanding about the purchase motivations, which can be utilized for more efficient gathering of data and focusing in marketing. The design of market campaigns can be easier designed for the target audience when their consumer behaviour is better understood.

6.3 Suggestions for Further Research

This thesis suffered from various limitations that were discussed in chapter 3.4. A study with similar goal could be conducted with larger and more evenly distributed sample for more reliable results.

This study took a more in depth look on the motivations behind virtual good purchases. Still many new perspectives can be taken on the subject. Future studies could investigate how functional and aesthetic virtual goods are related to how much money players use on each type of virtual good could be interesting. A faculty with access to virtual good purchase statistics in different games could compare the average amount of money per purchase and purchase frequency related to different types of virtual goods.

The evolution of monetization tools have offered many interesting opportunities for research. For example, season passes (e.g. Fortnite Battle Pass) are nowadays utilized by various games. The effectiveness of a season pass is arguably tied to many psychological factors that commit players on playing the game more and therefore allowing for more sales. While aesthetic virtual goods sales ultimately cannot utilize the degradation of gameplay, season passes create artificial obstacles and separate players to two groups. Investigation on the factors that make season pass so effective would be interesting.

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Appendices

Appendix 1: The online questionnaire

Virtual goods

This survey is a part of my Bachelor's Thesis Research at Aalto University.

The survey studies **virtual good purchases in video games** made with real money. In this survey, virtual goods refer to purchases made inside a video game. These purchases are ***only usable*** inside a game environment.

Participation in this survey is anonymous.

The survey lasts for approximately 7 minutes

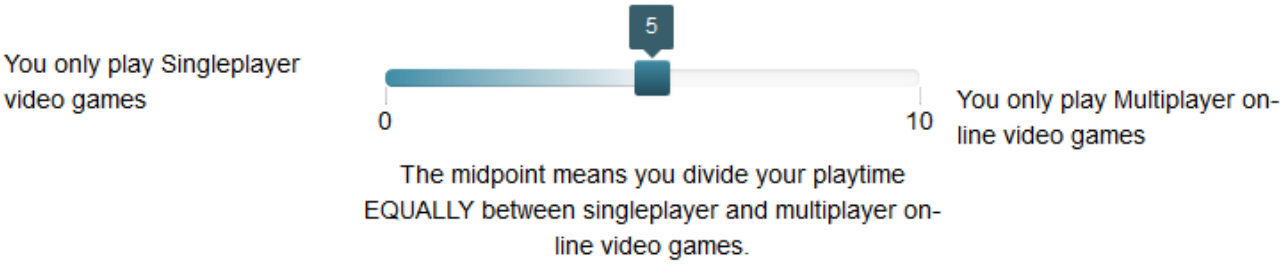
If you have any questions about the survey please contact me via email: joel.hellsten@aalto.fi

Please check one that applies to your virtual good purchase history *

- ○ I have made a virtual good purchase in the past 30 days
- ○ I have made a virtual good purchase but not in the past 30 days
- ○ I have never made a virtual good purchase

First, I'd like to know whether you mainly play singleplayer video games or multiplayer online video games.

On a scale of 0 to 10, where 0 means you ONLY play singleplayer games and 10 means you ONLY play multiplayer online games, please indicate the time proportion you use playing singleplayer vs. multiplayer video games: *



Do you mostly play games alone or with your friends *

	Always alone	Mostly alone	Equal time playing alone and with friends	Mostly with friends	Always with friends
	○	○	○	○	○

What type of virtual good purchases you have made? check all that apply *

- ☐ Time saver (faster upgrades etc.)
- ☐ Map pack
- ☐ Character boosters (powerful perks/gear)
- ☐ Continuing playing (eg. buying more lives)
- ☐ Upgraded or full version of the game
- ☐ Season pass
- ☐ Loot box
- ☐ Character customization
- ☐ New characters
- ☐ Other, Please specify

Next

Virtual goods

There are different types of virtual goods available for purchase.

Functional virtual goods have an impact on the gameplay. For example,**functional** virtual goods are used to speed up or smoothen the gaming experience (e.g. new maps, speeding up upgrade timers etc.) or to gain some new attributes to the gameplay itself (e.g. powerful weapons, armor or other boosts)

Have you made a *Functional* virtual good purchase using real money in the past? *

- ○ Yes
- ○ No

Other type of virtual goods are **Aesthetic** virtual goods.

Aesthetic virtual goods are bought purely for aesthetic reasons and **do not have any impact on the gameplay itself** (for example, character customization)

Have you made an *Aesthetic* virtual good purchase using real money in the past? *

- ○ Yes
- ○ No

Next

Virtual goods

Now consider the **Functional** virtual good purchases you have made and aswer the following questions.

I have made functional purchases because... *

	Strongly Disagree	Disagree	Don't know	Agree	Strongly Agree
I wanted to give gifts to others	○	○	○	○	○
I wanted to invest in a hobby	○	○	○	○	○
I didn't use any money on the game (free-to-play)	○	○	○	○	○
I wanted to show off my achievements in the game	○	○	○	○	○
I wanted to show off to my friends	○	○	○	○	○
The item was reasonably priced (discounts/offers)	○	○	○	○	○
I wanted to be a part of special event	○	○	○	○	○
I wanted to support a good game	○	○	○	○	○
I wanted to open new playable content	○	○	○	○	○
My friends used money on the game too	○	○	○	○	○
I wanted to be the best in game	○	○	○	○	○
I wanted to continue the game	○	○	○	○	○
I wanted to personalize my characters etc.	○	○	○	○	○
I wanted to protect stuff I had already earned in the game	○	○	○	○	○
I wanted to complete a level/building	○	○	○	○	○
I didn't want to spend time repeating same tasks over and over again	○	○	○	○	○
I wanted to speed up timers	○	○	○	○	○
I wanted to play with my friend	○	○	○	○	○

Virtual goods

Now consider the **Aesthetic** virtual good purchases you have made and answer the following questions

I have made Aesthetic purchases because... *

	Strongly Disagree	Disagree	Don't know	Agree	Strongly Agree
I wanted to give gifts to others	○	○	○	○	○
I wanted to invest in a hobby	○	○	○	○	○
I didn't use any money on the game (free-to-play)	○	○	○	○	○
I wanted to show off my achievements in the game	○	○	○	○	○
I wanted to show off to my friends	○	○	○	○	○
The item was reasonably priced (discounts/offers)	○	○	○	○	○
I wanted to be a part of special event	○	○	○	○	○
I wanted to support a good game	○	○	○	○	○
I wanted to open new playable content	○	○	○	○	○
My friends used money on the game too	○	○	○	○	○
I wanted to be the best in game	○	○	○	○	○
I wanted to continue the game	○	○	○	○	○
I wanted to personalize my characters etc.	○	○	○	○	○
I wanted to protect stuff I had already earned in the game	○	○	○	○	○
I wanted to complete a level/building	○	○	○	○	○
I didn't want to spend time repeating same tasks over and over again	○	○	○	○	○
I wanted to speed up timers	○	○	○	○	○
I wanted to play with my friend	○	○	○	○	○

Game design is an important factor when demand is created for virtual goods.

Games that rely on *Aesthetic* virtual good sales focus more on the social aspect of gameplay because these goods do not bring anything to the gameplay itself.

Please rate your agreement with the following statements: *

	Strongly Disagree	Disagree	Don't know	Agree	Strongly Agree
I don't mind using real money on Aesthetic virtual goods.	○	○	○	○	○
I feel like it is socially acceptable to use real money on Aesthetic virtual goods.	○	○	○	○	○
I am usually pleased with the Aesthetic virtual good content that I purchase.	○	○	○	○	○

When I see my friends purchase Aesthetic virtual goods in a game, I am more inclined to make a purchase myself. *

Strongly Disagree	Disagree	Don't know	Agree	Strongly Agree
○	○	○	○	○

How much money do you spend on Aesthetic virtual goods per month? (€) *

Next

Virtual goods

Across all kinds of video games, how many hours do you play per week? *

What is your gender? *

- ○ Male
- ○ Female
- ○ Prefer not to say

How old are you? (in years) *

Where are you from? *

Select

Next