



UPPSALA UNIVERSITET

Department of Informatics and Media

Digital Media and Society

Two year's Master's Thesis

**Purchasing behaviour on aesthetic items in online video games with real
currency**

The case of Counter Strike: Global Offensive

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Abstract

Over the last decade, buying in-game content with real money has become a more common practice among players in order to unlock exclusive content in video games. Prior research has mainly focused on those functional digital items that provide an advantage to the buyer. This thesis aims to determine the underlying factors that influence video game players to purchase purely aesthetic virtual items.

Prior studies on the field of video games, gaming business models and purchasing behaviour were reviewed and a theoretical framework focused on behavioural sciences, psychology and customer culture related theories was designed to interpret the results of a quantitative study.

The popular FPS (First Person Shooter), *Counter Strike Global Offensive* was the selected game to carry out the study. A web-based questionnaire was distributed in various specialized online forums, providing a total of 1006 respondents. A linear regression was the selected method to test the formulated model. Results showed a strong influence of emotional and symbolic perceived values in the purchase intention of aesthetic virtual items, while gaming experience and enjoyment had a minor impact.

Keywords: Video games, Virtual Items, Aesthetics, Purchase Intention, Symbolic Value, Counter Strike

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1. Introduction

How can a bunch of '1' and '0' or a few pixels be of any value? At first, it would seem that virtual items are of no value, but that is just not true (Hamari, 2011; Lehdonvitra, 2014; Yamamoto & McArthur, 2016). In fact, selling virtual objects is the main source of revenue of many Free to Play (F2P) video games, for example, Farmville, a famous F2P facebook game, generated over 90% of its revenue by selling virtual goods (Pascal, 2011). It is obvious that they do have a value since they do generate revenue for the business, but what value does it have to the players? Certain free to play games are designed to be boring and unenjoyable unless purchases of virtual items are made. Why would players spend money on them?

The video game industry has been increasing almost exponentially for the last few decades. Computer (and console) games have become more popular amongst a digitalized society, permanently connected through different social media platforms. Video games have improved its graphical interfaces and mechanics with the years thanks to new technologies, they have become complex digital commodities trying to simulate a setting as realistically as possible, not just its graphics, but also its mechanics (Fernández-vara, Zagal, Mateas, 2005). Video games are capable of simulating real-life situations and even virtual economies, (f. ex Sim cities, The Sims, Civilization series...). These reproductions were a single-player experience and its virtual commodities had no real value beyond the satisfaction and achievements that they entailed to the user. This changed with the irruption of online gaming at the end of the 90's and beginning of the XXI Century.

Video games, as any other industry, are a business, and as any other industry they are expected to generate a revenue. Before online games gained prominence, the gaming industry main source (if not only) of revenue were retail sales, the more sales, the bigger the profit would be (Alves & Roque, 2007). It is a very simple and traditional business model, but it is hardly the one nowadays, retail sales are still a core part of the economic profit of a videogame, but there are other factors that determine the success rate, especially in online games. Online games use an internet connection to connect players around the globe in order to play together, sharing a time and place, thus an experience. Online games can offer a persistent world (Massive Multiplayer Online Games, -MMO-) or separated spaces or rooms

where people join and play, once the game session is over, that space disappears. This last differentiation is not relevant for the study, since the focus remains in the interaction between players and their behavior, reasoning and intentions towards purchasing virtual commodities, thus, single-player video games are of no use since player-to-player interaction does not exist. Only online games are of interest for this study.

As introduced before, online video games revenue model is far more complex and is not limited to the gross sales of games. In order to make a community of players grow and sustain it overtime, online games are in need of a stable and constant flux of income, which is achieved in two main ways: a monthly subscription and in-game purchases. However, most games include both or just the later as a possibility, but not as mandatory, the game can be thus enjoyed without having to pay. This generates a regular income that the developers can use to maintain the game online as well as generate new content to maintain and increase the playerbase of the game. This research aim is to study the purchase behaviour of players towards in-game cosmetic virtual items with real currency and what factors influence them to obtain these, for amounts that range from a few cents to thousands of euros.

1.1 Virtual items

There are different types of virtual goods and defining them has not been an easy task. Fairfield (2005) in Lehdonvitra (2009) classifies and differentiates virtual objects in three different categories: information goods, virtual goods and material goods. There are virtual goods that have a physical representation (f.ex clothes in an e-commerce), other goods lack a physical counterpart and are only available as virtual pixels. Finally, there are digital goods that have neither and are just data (f.ex music, text, movies...). This classification is not enough given the purpose of this research, thus a more precise differentiation between virtual goods.

There are different types of items that can be purchased with money. Lehdonvirta (2009) classifies them in three different categories: appearance, social and functional objects. Virtual commodities can have one or several of these qualities at the same time. A player can purchase an item because it gives him or her more power, and more status inside the game at

the same time. Or perhaps, the user purchases an item of clothing just because it looks good even though it does not give any advantage. The types are as follows:

Functional items: items that give the player an advantage amongst other players when purchasing them, such as more power, shorter waiting times or more resources. These goods are seen as unfair or “cheating” by some other players who do not purchase them (Hamari, 2010).

Aesthetic items: Virtual commodities that are purchased by players solely by its looks and in occasions by its in-game status. These objects do not give an advantage to its owner.

Social items: These are similar to the aesthetic ones and several objects may share both categories at times. Social items give in-game status and may or may not be purchased by its cosmetic appearance, but because they do give a distinctive status to their owners.

This research will focus on items that do not provide any type of in-game advantage, hence, purely aesthetic items and those social items that fulfill the criteria will be studied. The objective of the study is to find and determine the different aspects that influence players to purchase aesthetic and social items amongst other virtual commodities. In order to do that, pertinent literature to the topic at hand will be reviewed and a suitable theoretical framework will be used alongside a quantitative methodology; a multivariate linear regression is the method used to determine if there is a correlation between the purchase of cosmetic items and the rest of independent variables that will be explained in the methodology section. The findings of the survey will be analyzed and discussed in reference to the chosen theoretical framework.

1.2 Relevance of the study

Topics regarding virtual goods purchasing started to attract academic interest around 2005, and the first quantitative studies appeared on 2008 (Lehdonvitra, 2017). Studies focusing on behavioural intentions on purchasing digital items, used mainly mobile and MMO video games to carry out their researches (Animesh et al. 2011; Mäntymäki & Salo 2013; Kim 2012; Kim et al. 2011; Wang & Chang 2014). Moreover, the topic has been examined from

several viewpoints and theoretical perspectives such as technology acceptance (Cha 2011; Domina et al. 2012; Hamari & Keronen 2016), theories of planned behavior and reasoned action (Gao 2014; Kaburuan et al. 2009), expectancy-disconfirmation model (Wang & Chang 2013; 2014), as well as transaction cost theory (Guo & Barnes 2011; 2012).

Video games' virtual economies are a timely and relevant topic of research, academics are studying this issue from different theoretical perspectives and using different video game genres as case studies. This thesis focuses only on purely aesthetic items that have no in-game impact, thus do not provide an advantage. According to the latest literature review of Hamari (2017), from 24 studies about purchase intention in online games, only one studied a FPS title (Hamari, 2015), while 11 studied only aesthetic items, none of them being a FPS title, but social networking games. While virtual items purchasing in video games has been studied since 2005 (Lehdonvitra, 2017), vanity objects that give no factual advantage to the player who owns them, and the FPS genre have been largely unstudied. Existing studies focus on the purchase of functional virtual items, which give a feasible advantage when used, thus the main reason to buy them is to acquire the aforementioned advantage (Lehdonvitra, 2005). The reasons to buy non-functional items, in other words, vanity objects differ and revolve around socialization, customisation and self-expression (Jung & Pawlowski, 2014; Belk, 2014) in social networking video games, such as Habbo Hotel or Second Life, only a reduced number of articles have studied the purchasing of purely aesthetic items in competitive centered games

In order to contribute to fill this existing gap in this area of research, this study analyzes the acclaimed video game Counter Strike: Global Offensive (CS:GO), a multiplayer First Person Shooter that counts with one of the largest player communities and with one of the most active virtual marketplaces online, with a transaction volume of approximately 355,539,970\$ (Helveti, 2016) in vanity objects, items that are just cosmetic variations of the original product. In other words, in a video game where the social factor is apparently minor, the transaction volume of aesthetic items is noticeable. Why would players in a competitive First-Person-Shooter game buy virtually useless items that provide no gameplay advantage? While this thesis' relevance revolves around studying the purchase of aesthetic items in a competitive FPS title, the economy of the video game CS:GO has already been studied by

Yamamoto and McArthur (2016). The authors provided an overview of the CS:GO marketplace and pointed out certain behavioural patterns and practices in player's purchases. Responding to the limited research present on this topic, this paper aims to provide an in-depth analysis of the motivation of players to buy purely aesthetic items in this particular FPS video games.

1.3 Aim of the study & research question

The aim of this thesis is to determine and analyze the factors behind player's behaviour in regard to purchasing purely aesthetic virtual goods in the video game Counter Strike: Global Offensive, a First Person Shooter, a genre that has not been studied in-depth when compared with other genres such as Social Network games or MMOs. The focus on aesthetic goods has yet to be studied further in FPS games, thus this research aims to provide a better understanding of this growing virtual economy aspect in the video game industry.

There have been prior studies of virtual item purchases, but none focused on both competitive centered games (such as CS:GO) and cosmetic items with no impact in gameplay. Video games, especially the freemium ones, provide premium features to make the game more enjoyable to the players in exchange of money, thus, there is a clear reason behind purchasing these functional items: to improve the experience and make the game more enjoyable. In contrast, this thesis wants to provide an analysis on the reasoning behind purchasing vanity virtual objects in a video game with a minor socializing factor and a focus on competitive gameplay, where cosmetic items are seemingly "useless".

This study wants to answer the following research question **(RQ)**:

a) What are the underlying factors that influence players of Counter Strike : Global Offensive to purchase virtual aesthetic items with real money?

1.4 Thesis disposition

This thesis will be structured as follows: section two will contain a background situation of the topic, starting with a definition and classification of video game genres following Griffiths, Davies and Chappell's (2003) typology. Next, the contemporary phenomenon of video games becoming boring unless the player plays is presented in order to understand current trends in the video game industry. The third section is a literature review, which is divided in: the monetization of video games, the different video game business models, the motivations to purchase virtual goods (in general), and lastly, existing research on CS:GO virtual economy is presented and reviewed.

The fourth section of this thesis introduces the theoretical framework used to support and interpret the results. These theories are: the consumer culture theory (CCT), which gives a broad view of consumer trends and behaviour, symbolic consumption and prestige-seeking consumer behaviour are then introduced as they stem from CCT. Lastly, the theory of the extended self (in the digital age) and the co-construction of the self are introduced in order to give context to the psychological factors affecting virtual purchases. The methodology is presented in the following chapter, explaining the criteria used to create an online survey in order to collect data for this research, the section ends with the presentation of five different hypotheses to help answer the RQ. The results are introduced in the seventh section in a descriptive manner and the hypotheses are answered, then the results are analyzed and interpreted in the following section using the theoretical framework introduced in chapter four. The thesis ends by answering the research question and outlining possible future research on the topic.

2. Background

Let us start with the basics, what do we understand by ‘video game’? The term itself is constructed by two words ‘video’ and ‘game’, hence we understand ‘video game’ as a form of entertainment that requires the usage of video technology and interaction with a data processing machine, be it a console or computer. Most early video games were single-player experiences where the user faced computer controlled opponents and situations (Wolf, 2008). Games soon allowed local multiplayer modes, where two players could interact, cooperate and play against each other while sharing the same device and space in time.

With the arrival of the internet to the video game scene, players could connect to a server and interact in the same virtual space without sharing a physical location (Ho & Wu, 2012). Online games vary in their operational form when using the internet support, following Griffiths, Davies and Chappell’s (2003) typology, there are three types of video games using the internet connection.

2.1 Online video games typology

2.1.1 Standalone games

First, standalone games are defined as: “a game played without connecting to the Internet” (Zhao, 2009). These video games focus in a singleplayer experience and reduce the multiplayer experience, if there is one, in searching for human opponents in short game rounds. Players are given a pre-established character, self-expression and communication with other players is limited by the lack of narrative and immersion these games provide when played online (Griffiths, Davies & Chappell, 2003). Standalone games use the internet as a support feature to connect players to a limited extent.

2.1.2 MMO (Massive Multiplayer Online) games

Massive Multiplayer Online games (MMO) are online-only video games, meaning that they cannot be played without access to an internet connection. MMO provide a persistent social virtual world (SVW), where players can freely move. Players are given the possibility to create their own 'Player Characters' (PCs) and interact with the environment, other PC's or NPC's 'Non-Player Characters' (Griffiths, Davies & Chappell, 2003). MMOs have become a phenomenon in the videogame industry, with millions of active users playing simultaneously. Most of the features offered by MMOs are already present in standalone games, what makes a difference for many is the shared experience, the collaborative nature of most activities and, most importantly, the reward of being socialized into a community of gamers and acquiring a reputation within it (Ducheneaut et al. 2006).



Figure 1: Fully customizable characters on a MMO (Final Fantasy XIV ARR).

Massive Multiplayer Online games offer an immersive experience where users control an avatar created and modified at the player's will. This virtual character has the possibility of interacting with the online community, adding a social factor (Jung and Pawlowski, 2014). These factors influence the likelihood of purchasing virtual goods in-game with real money.

The estimated revenue generated by virtual goods in MMOs is expected to be 26.7 billions in 2017. Most MMOs are funded with the earnings obtained by the sales of digital in-game objects, surpassing the monthly subscription revenue (Alves & Roque, 2007; Dreier et al. 2017; Lim & Seng, 2011).

2.1.3 Local and wide network (LAWN) games

LAWN multiplayer games are built towards online competition and tournaments amongst players (Griffiths, Davies & Chappell, 2003). These type of games are focused in tactical and strategic cooperative gameplay. MOBA and FPS games are included in this category, both genres are highly popular and present in eSports. Multiplayer online battle arena (MOBA), also known as action real-time strategy (ARTS) is a genre where two teams fight to destroy the enemy base. In most MOBA titles the camera is cenital, thus players are able to see their own character and the surroundings. Characters appearance can be altered with “skins”, aesthetic digital objects that alter the appearance of the avatar, customization is limited and cannot be altered further by the player like in MMO games.

FPS (First Person Shooter) games in most cases offer even less customization, in order to avoid confusion between teams and to prevent friendly fire issues, changes to the character are minimal. In fact, in this research studied video game, Counter Strike:Global Offensive, only the weapon and gloves appearance can be altered, which are the only parts the player can see of its own character since the game is in first person point of view (see image 2).



Figure 2: Counter Strike: Global Offensive first person camera.

LAWN games lack a persistent virtual world, the gaming experience is divided in individual matches (rounds), independent from one another. Communication and interaction among players is important to defeat the rival team, but socialization and bonding is limited when compared to MMO games. Self expression is also limited since only certain parts of the character can be modified. In MMO video games, the possibilities of customization, interaction, socialization and self-expression are much bigger, hence this genre has been of interest for many authors (Seob, Hoon & Han, 2014: Ash, 2012: Lin & Sun, 2007: Hamari, & Keronen, 2016: Prax, 2013). Purchasing virtual goods has been a revenue practice for both MMO and LAWN genres, but there is no much available research of the latter (Yamamoto & McArthur, 2016: Dota 2 paper here), even though, in both cases, virtual objects are the primary source of economic revenue, surpassing the subscription based models (Alves & Roque, 2007).

2.2 Commodity vs Play: games are no longer meant to be enjoyable

Contemporary economies are experiencing a transition between industrial capitalism to information capitalism (Kline, Whiteford & De Peuter, 2003). Theorists have linked information capitalism to postmodern culture, characterized by simulation, hyperreality, the increasing role of design and marketing and the importance of the image (Kline, Whiteford & De Peuter, 2003, p.24). The digitalization of information is a clear example of this process, it represents the beginning of a new form of consumption where the individual consumes conglomerates of pixels, for its looks, meaning or social significance within the game. These virtual goods do not take up physical space, are not harmful to the environment and generate massive quantities of revenue. Virtual goods could be considered as the “ideal commodity” in words of Martyn Lee (2003). The ideal commodity embodies the most “powerful economic, technological, social and cultural” attributes of the time. As exemplified by Kline, Whiteford & De Peuter, (2003). During Post-Fordism, the ideal commodity was a house and a car, they sustained several industries and the whole economy in a sense, they were part of society and its social practices, and they gave status.

It is too soon to argue if virtual goods are the ideal commodity of information capitalism, truth is revenue from these type of goods is increasing rapidly (Hamari & Keronen, 2016; Prax, 2013). Their production cost is low, once the commodity is created, duplicating it has no additional cost (Grimes, 2014). Digital objects fit with certain characteristics of the postmodern society. Martyn Lee examples of the ideal commodity are vague and imprecise, Kline, Whiteford & De Peuter, (2003) suggest that interactive (online) game fulfills the characteristics thus it can be considered an ideal commodity. The authors argue that online games were commercialized fast and thus its industry was created, the very same industry that nowadays generates billions of €. Graham (1996), states that video game companies were the first to create “a successful and global multimedia product market”.

Following this idea, Kline, Whiteford & De Peuter, (2003) created the “diagram of Capital” in order to illustrate the different phases of the process in which corporate production creates

commodities for consumption for purchase, which in turn generates the flow of money and profits to start the cycle over again. This model's marketing circle "commodification vs play" is of interest to our research.

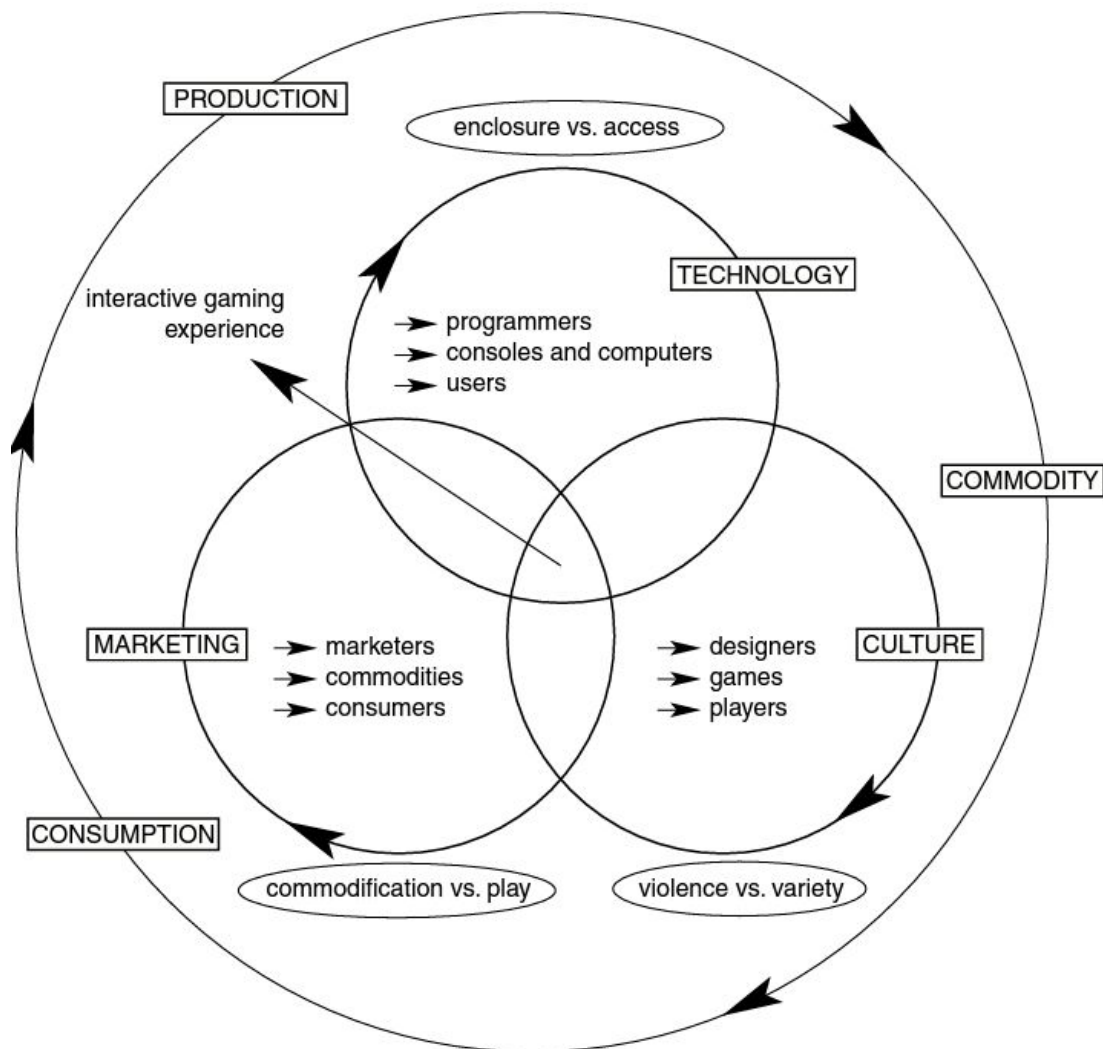


Figure 3: Kline, Whiteford & De Peuter, (2003) "Diagram of Capital"

Kline, Whiteford & De Peuter, (2003) point out a recent debate in the videogame industry inside their marketing circle: "**commodification vs play**". In online video games, virtual objects have become a commodity that players buy and trade with a real currency. The vast majority of online games have an in-game market where players can buy and sell virtual goods, there are external platforms that serve this very same purpose, thus games have acquired a new dimension with the inclusion of purchasable virtual objects in their gameplay

and business models alike. Authors argue that players are “forgetting” to play and enjoy in exchange of buying and selling goods in order to obtain even better goods or a monetary profit, economic speculation has reached video games (Lehdonvitra, 2009; Hamari, 2010; Prax 2013). Many free-to-play game publishers encourage users to purchase functional goods for faster progression and competitive advantage in the game. However, paying for competitive advantage has been regarded as highly incompatible with the nature of games and many players perceive purchasing advantageous goods as cheating (Hamari, 2017).

Although it may be perceived by the community as cheating, paying to acquire an advantage in video games is a common practice in social network and mobile games. The mechanics of these are similar, the player has a limited amount of actions that when used, have to be recharged (Pascal, 2011). At the beginning there is little to no waiting time and easy to earn game currency, as the game advances, the game restricts the possible moves of the players through lives, energy, number of plots, etc. Then lower prices for easy-to-earn money to attract players at low levels and present items as limited resources to increase demand for them (Georgieva et al. 2015). This model is characteristic of “freemium” games, which are free to play, but have “premium” features that can be purchased with real money in order to make the game more enjoyable.

As said before, CS:GO is not a freemium video game, thus this is not applicable, nevertheless, CS:GO players do buy virtual objects even if those do not seemingly enhance their enjoyment and give them an advantage over other players.

3. Literature Review

This section includes an overview of the most relevant and pertinent research in the field of video games studies. More precisely, in the area of monetization, business models, virtual objects value a purchase motivation of virtual goods. The last part of the literature review

narrows its scope to the CS:GO virtual economy, focusing on the few existing papers that have studied it.

3.1 Monetizing video games

Not always online video games have had the current revenue model, selling and purchasing virtual goods from video games with real money was something that started accidentally. This phenomena is a major business challenge for video games, it also affected other sectors, such as social networks, online social network games and online entertainment (Mäntimäky & Salo, 2015). In the late 90's, when online gaming was starting to be a reality, the first Massive Multiplayer Online games (MMO) started to rise in popularity. In MMO games you control a character (an avatar), that you can customize to your liking and explore a persistent online world with thousands of other players. Players could interact with each other and play together while not sharing a physical space as it was required until then. According to Hamari and Lehdonvitra (2010) the first player-to-player real-money trade for virtual goods took place in 1999 in MMOs as Ultima Online or Everquest. There was no official in-game feature to buy and sell items for real money, instead, users would list their goods in virtual market websites like eBay and sell them for real currency to other players who bid for it.

The selling of virtual goods is not limited to video games, as Lehdonvitra (2014) points out, in 1996, the instant messaging platform ICQ provided users with a five number code as their 'nickname'. As the number of registered users increased, the number of digits did as well, five, then six, seven and even 8 digit numbers were handed out. The five digit codes became scarce and were considered a rarity, they became valuable and users started to sell them on the internet for hundreds or even thousands of dollars (Lehdonvitra, 2014). This case is a clear example of what virtual status items are, possessing one of these five digit, or a peculiar one such as "111111", made the owner stand out, gave them recognition.

In both cases described above, the companies did not foresee the monetization and value those virtual items gained. Virtual economies were born, we take the definition by Lehdonvitra (2014:2) "an economy that is based on digital resources". Companies did not

take long to notice and seize this opportunity to create more revenue by monetizing and adding microtransactions in exchange for virtual goods. Microtransactions are, as described by Artz and Kitcheos (2016), as “a small one-time payment not to exceed 10 Euros” in exchange for in-game virtual goods, being these cosmetic or functional. Virtual economies were shortly after implemented in-game and started to be one of the main sources of revenue for the videogame industry. The business model had changed.

3.2 Video game business models

For the last three decades, digital games have emerged as an important part of media and global entertainment (Aleem, Capretz and Ahmed, 2015), growing on an average of a 9% to 15% (Zackariasson and Wilson, 2010). The social media revolution and ever-increasing Internet expansion are driving phenomenal growth for the digital game segment in particular and are creating a huge multimedia business worth billions of dollars (Aleem, Capretz and Ahmed, 2015). The video game industry is generating billions of euros as revenue every year. Digital games have a variety of genres and are present in different platforms, Kerr (2000) identifies four different segments: PC, console, casual video games and Massively Multiplayer Online Games (MMO). Each one of them has different audiences, different distribution methods, logistics and marketing campaigns. In this section we present the different business models for video games. Given the complexity of creating and producing them nowadays and the number of stakeholders and third-party companies involved, the models are presented in a simplified and understandable way.

Traditional business models for video games (figure 4) assign a fixed price to the product (game) and sell it to the customer, which has unlimited playtime (Marchamd and Henning-Thurau, 2013). When developing a single player game, most of the investment and effort is used when designing and creating the game (Alves and Roque, 2007), the final product generates all the revenue and it cannot be altered over time. This model has thus a risk when investing, The buyer will also perceive the game as final product, which means that the business model consists on a simple and fair trade of values (Alves and Roque, 2007).

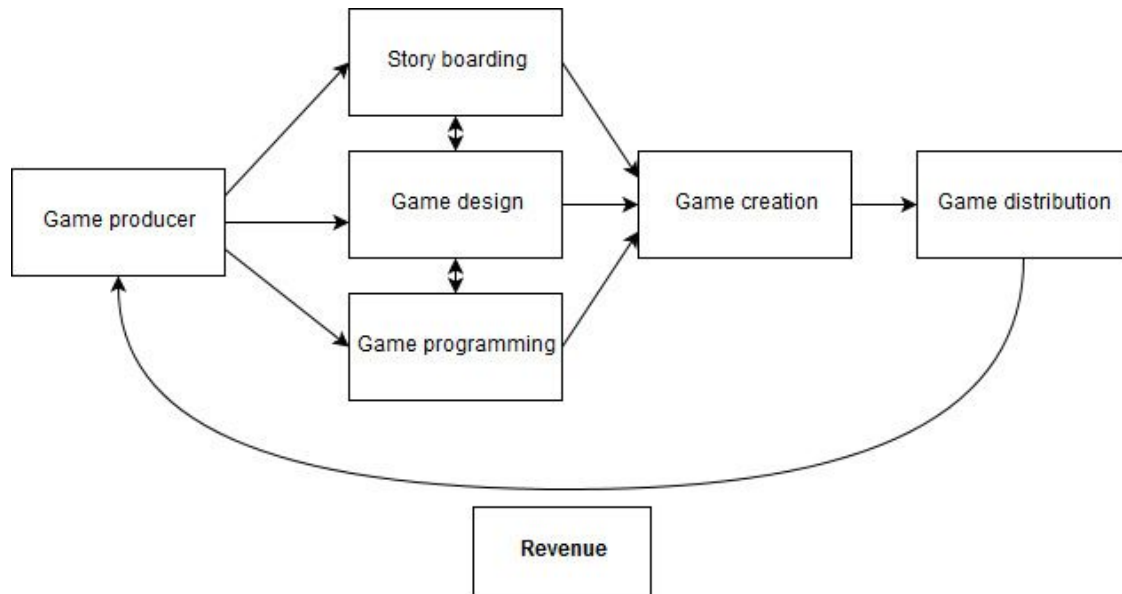


Figure 4. Video game traditional business model based on Alves and Roque (2007)

The internet modified the traditional business model, no matter if the final product was a single-player or multiplayer (online) experience. An internet connection made game producers capable of patching and/or updating the final product online without having to create a new one, video games could thus be altered over time. Both local and wide network (LAWN) (Griffith, Davies and & Chappel, 2003) and Massive multiplayer Online (MMO) games are examples of the online business model for video games, where the producer does not only have the cost of creating and distributing the product, but also maintaining it online and updated (Alves & Roque, 2007). Figure 5 exemplifies the new video game business model, which is more elaborated than the traditional model (figure 4). This new model includes online factors that affect the development and maintenance of the game on the net, which are: customer support, online updates, virtual economy/ subscription fee and the server maintenance. Figure 5 was composed using Alves and Roque (2007) and Hamari (2009) existing video game business models. The figure is applicable to Free-to-Play (F2P), Buy-To-Play (B2P) and subscription based games. Counter Strike: Global offensive is a B2P video game with a strong virtual economy system.

Alves and Roque (2007) point out three key factors to keep an online game running:

- distribution of content and game servers (in many cases involving large server farms and clusters),
- game masters (people that give in-game support and problem solving services),
- marketing and community support (to attract more players and keep the game community alive).

To ensure the video game popularity, the producer has to maintain and expand the online community of players. This requires a continuous investment, thus the first MMORPGs (2001-2005) ran a monthly subscription fee in order to play (Komorowski & Delaere, 2016; Alves & Roque, 2007). Subscriptions ensured an influx of revenue to maintain online and update the game over time. Nowadays, only a few MMO maintain a monthly subscription fee model, most of the video game industry for massive multiplayer online games has shifted towards a microtransaction or freemium model (Komorowski & Delaere, 2016). This business model ensures that the game is free to play, but offers microtransactions (purchase in-game objects) in order to generate revenue. These microtransactions are used to obtain in-game currency, goods and or privileges (Hamari, 2011; Pascal, 2011). It is common for developers of F2P games to make them tiresome, stressful and unenjoyable, they are designed to make people impatient (Pascal, 2011; Karlsen, 2013), and the only way to make the game fun is to pay (see figure 5).

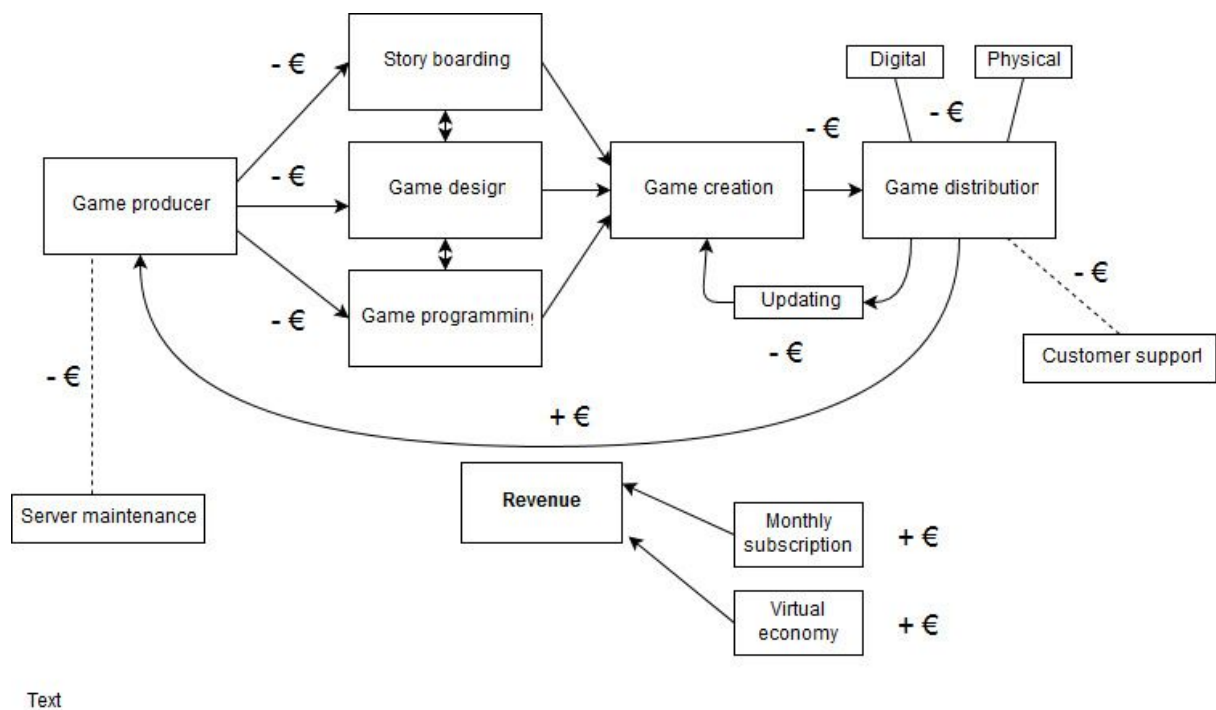


Figure 5: new video game business model, based on Alves and Roque, (2007)

In order to sustain online video games, these have included monthly subscriptions and/or a virtual economy system in which players can spend money for special in-game content (Lehdonvitra, 2009: Alves & Roque, 2007: Hamari 2010;2011). Purchasing virtual commodities is generating the highest revenue, around 82,4 billion dollars in 2015 alone (Aleem, Capretz & Faheem, 2016). It is clear that the virtual economy system works, hence it generates enough revenue to sustain online video games, but what makes them valuable to the player if they can enjoy the game for free? That is what will be discussed in the next section, the value players give to virtual goods.

3.3 Value of virtual objects

In the case of functional items, the reasons are obvious, they give an advantage to those that purchase them over the rest of players, they make the game more enjoyable by cutting down waiting times or giving more power to your avatar. However, purely aesthetic objects do not share the same criteria, Lehdonvitra (2014), argues that the value of this kind of items is

socially constructed and its value is different to each player and their buying preferences. Just as physical goods, their digital counterpart follows the same logic. Expensive t-shirt brands have the same functionality as t-shirt regular brands, one pays for the status, the identity, the membership to certain echelons of society certain brands provide. It is the same with virtual goods.

Cosmetic virtual goods are not just good-looking and pretty objects a player can obtain, they also provide the owner with certain status, depending on their rarity and appealing by the community among other factors. In certain games and situations, owning certain goods helps construct one's identity and/or membership to certain groups (Lehdonvitra, 2014).

3.4 Motivations to purchase virtual goods

Up until now only the criteria to determine the value of a virtual good has been discussed, but the motivations of the players beyond power-gain or simply to make money remain undisclosed. In this section of the literature review, articles discussing user's motivation to purchase virtual objects will be analyzed and discussed.

A sustainable amount of the encountered literature focused on purchasing virtual goods and how that is related to game enjoyment (Molesworth & Denegri-Knott, 2005) (Hamari, 2015), however, these authors did not limit its scope to aesthetic only objects and took into account all kinds of objects or bonuses that one could purchase with real currency. Hamari analyzes three different types of video games, but overall, the results are similar amongst the different genres (2015: 302). He used a research model including attitude towards the available virtual goods, intention towards the game, perceived enjoyment, purchase intentions and subjective norms towards purchasing virtual goods. Hamari's results determined that there was a stronger relationship between purchase intentions and attitude towards virtual goods as well as subjective norms towards purchasing virtual goods.

The author analyzes three different types of video games, all of them being free-to-play, hence using virtual goods as its only way of generating revenue, as discussed before, these items are mostly ‘boosters’. As Hamari (2015) quotes, “You are buying your way to the top of the leaderboard with no gaming skill required” (Wired Magazine, 2012), these type of items are received with criticism by players that do not want to spend money in a game that can be played for free.

Hamari (2015) analyzed three game categories: Social virtual world (SVW), first person shooter (FPS) and social network game (SNG). For the SVW category, a total of 2156 Habbo Hotel players were surveyed. Habbo Hotel recreates a virtual hotel with infinite rooms that can be owned and decorated by the users with purely aesthetic goods that can be purchased with real money. The second category of FPS has a total of 398 respondents from 4 different games. The majority of the sample 334/398 comes from Team Fortress 2 a retail game that turned into free to play that has a virtual market of purely aesthetic goods. The other games are World of Tanks, Tribes:Ascend and Global Agenda. The last category formed by social network games, in other words, those games available on social network sites such as facebook. This last category is the only containing ‘boost’ items and not just aesthetic goods.

Hamari (2015) centered his investigation in two main factors related to the purchase of virtual goods in free-to-play video games: (1) factors related to enjoyment of the game and play continuance as well as (2) factors related to attitude toward buying virtual goods and beliefs about other people’s opinions. Although there were no major differences in the results depending on the game type (SVW, FPS or SNG), the results backed up Hamari’s hypotheses: “enjoyment of the game reduces the willingness to buy virtual goods and (2) attitude toward virtual goods and the beliefs about peers’ attitudes strongly increase the willingness to purchase virtual goods.”(p.366). This conclusion supports the idea that games are boring on purpose (Pascal, 2011), those players that do not enjoy the game will try to improve their experience by buying virtual items, while players that do already enjoy it, do not feel the urge to acquire them.

The first hypothesis can be explained in different ways, Hamari argues that those players who already enjoy the game enough, do not have the need to purchase virtual goods to increase

their entertainment. However, players that do not enjoy the game as much, but want to keep playing, might be more prone to buy virtual goods to fully enjoy the game. The author recognizes that respondents that claim to not want to buy virtual goods might have already bought them in the past, thus not having to do it again (Hamari, 2015:306).

Hamari does have the genre of the game into account, but when analyzing virtual goods, he completely ignores the nature of those. He makes no difference between aesthetic items and ‘boosts’ or power-ups. In that regard, this research will make a differentiation between ‘boosts’ and vanity goods, focusing on the later. Moreover, only FPS games will be studied, since it is a less popular genre when it comes to studies of virtual item consumption.

3.5 CS:GO virtual economy

Counter Strike : Global Offensive (CS:GO) virtual economy has been a recurrent topic for blog articles discussing the notoriety and relevance of this virtual marketplace and its impact on the game (Helveti, 2016). CS:GO is the sequel of the popular game Counter Strike and Counter Strike Source (Yamamoto & McArthur, 2016; Grimes, 2014). One of the changes included in CS:GO, was the implementation of a community marketplace and weapon skins (Plafke, 2012; Grimes, 2014, Yamamoto & McArthur, 2016). Players can buy and sell skins by using real money in the community marketplace. Skins are virtual patterns that wrap around the player’s weapon, giving it a unique look. Skins, depending on their looks and other attributes can be sold as low as three cents up to 20,000 USD (Yamamoto & McArthur, 2016).

Grimes (2014) explains what gives value to those skins. At first, Valve, the developer of CS:GO, included skins that imitated real weapons’ aspects, such as camouflage and hydrographics. These did not have the expected demand and their market value dropped quickly (Grimes, 2014). Valve studied the behaviour of the players when buying and selling these military skins and started to include paintball-like skins and decorations, with shiny colours and extravagant designs, simulating real world paintball guns. The results showed

that guns imitating the latter designs were much more popular and were sold at higher prices (Grimes, 2014).

3.5.1 Rarity, keys and cases

According to Grimes (2014) and Yamamoto and McArthur (2016), looks are not the only characteristic that influences players' purchasing behaviour, there are other factors taken into account when obtaining these digital commodities. Just as in real economies and markets, scarcity is a factor that affects the pricing of a good, the more rare and unique it is, the higher the price would be (Lehdonvitra, 2011; Prax, 2013; Grimes, 2014; Yamamoto & McArthur, 2016). In order to reproduce scarcity in virtual objects that are seemingly infinite, Valve used six tiers of rarity determined by different colors in the name of the weapon, The lowest grade is light blue 'consumer grade', followed by 'Industrial grade' a navy blue text, Mil-Spec Grade (dark blue), Restricted (purple), Classified (pink) and Covert (red) (Yamamoto & McArthur, 2016:2). 'Consumer grade' and 'Industrial grade', can be obtained randomly after an online game is completed, thus they are the most common and less valuable skins. The rest can only be obtained by opening cases, using keys purchased with real currency.

Cases are dropped randomly after a game is complete, each case contains a random skin with a different drop rate depending on the rarity tier. Hence, most common tiers (light and navy blue) have a high drop rate, while rarer weapons (pink and red) have a low chance of being obtained. Each case needs one key to be opened, keys are purchased by 1,99€.

Exterior	Category	Quality	Graffiti Collection
<input type="checkbox"/> Field-Tested	<input type="checkbox"/> Normal	<input type="checkbox"/> Consumer Grade	<input type="checkbox"/> Community Graffiti Box 1
<input type="checkbox"/> Minimal Wear	<input type="checkbox"/> StatTrak™	<input type="checkbox"/> Mil-Spec Grade	<input type="checkbox"/> CS:GO Graffiti Box
<input type="checkbox"/> Battle-Scarred	<input type="checkbox"/> Souvenir	<input type="checkbox"/> Industrial Grade	
<input type="checkbox"/> Well-Worn	<input type="checkbox"/> ★	<input type="checkbox"/> Restricted	
<input type="checkbox"/> Factory New	<input type="checkbox"/> ★ StatTrak™	<input type="checkbox"/> Classified	
<input type="checkbox"/> Not Painted		<input type="checkbox"/> Covert	
		<input type="checkbox"/> Base Grade	
		<input type="checkbox"/> High Grade	
		<input type="checkbox"/> Exotic	
		<input type="checkbox"/> Extraordinary	
		<input type="checkbox"/> Remarkable	
		<input type="checkbox"/> Contraband	

Figure 6: Skin tiers classification on CS:GO

As seen in the image above, there are more attributes taken into account when purchasing virtual skins. According to Grimes (2014) and Yamamoto and McArthur (2016), the exterior of the weapon is also a factor that affects the value of the object. Those objects that show well-worn or battle-scarred attributes are less valuable than the same weapon being factory new. Mint condition objects have higher value than used ones (Grimes, 2014; Yamamoto & McArthur, 2016). Weapons are also categorized by special attributes such as ‘StatTrak’, skins including this feature show a counter with the number of kills done by that weapon during a game. They have higher selling prices than the same weapon with the normal category (Grimes, 2014).

3.5.2 Weapon usage and emotional bonding

Besides the quality, category and exterior attributes, weapons in CS:GO are used depending on their in-game utility. Weaker weapons will not be used as often as more precise and lethal ones. During the first rounds, pistols and the FAMAS rifle are popular in-game buys, but they are replaced by AK-47 and M4A1-S, M4A4 and AWP in the next rounds (Grimes, 2014). These are the most used weapons by CS:GO players, thus their skins are more valuable since

players can show them off without giving up on the advantage provided by these, hence, weaker weapons skins are not that popular because they are not used as often (Grimes, 2014).

Nostalgia, heritage, personal history, are factors that affect real world objects value, Grimes (2014) discusses what impact do these factors have in CS:GO skins. The author argues that the Desert Eagle, a pistol that was popular in a prior version of Counter Strike and player valued highly, is not used as often in the new video game Counter Strike : Global Offensive, where the P250 pistol has a higher utility and use. Results facilitated by Valve show that even though the Desert Eagle is not as useful, its skins are more valuable than the P250, hence, nostalgia, personal history and emotional bonding do affect the item's pricing (Grimes, 2014: Toh, 2016).

4. Theoretical framework

In this section, the different relevant theories used to analyze our data will be presented and linked to the current existing reviewed literature as well as to our case study. Our theoretical framework is composed by: consumer behavior theory, connecting it to the digital spaces and consumption of virtual goods. Our scope does only include vanity items, thus consumer behaviour is narrowed down to symbolic consumption and prestige seeking consumer behaviour. These theories will then be linked to the concept of extended self, used nowadays in digital media and virtual worlds as a way to manifest ourselves in digital communities, in our case, online gaming.

4.1 Consumer Culture Theory

“CCT explores the heterogeneous distribution of meanings and the multiplicity of overlapping cultural groupings that exist within the broader socio-historic frame of globalization and market capitalism” (Arnould and Thompson 2005, 869) it has many intertwined theoretical perspectives that study the dynamic relationships between consumer actions, the marketplace, and cultural meanings. For the objective of the thesis, this theoretical framework focuses on three main perspectives on consumer culture identified by Featherstone (1990). First is the view that consumer culture is premised upon the expansion of capitalist commodity production which has given rise to a vast accumulation of material culture in the form of consumer goods and sites for purchase and consumption. The second perspective of consumer culture theory identified by Featherstone (1990) has a more sociological focus. This perspective argues that the satisfaction derived from owning goods relates to how people use goods in order to create social bonds or distinctions (Featherstone, 1990). The third perspective, which fits with the topic of this thesis, studies the emotional pleasures of consumption and how this practice generates excitement and aesthetic pleasure. Thus this view analyzes the consumption of dreams and desires related to acquiring

commodities and symbolic valuable goods (Featherstone, 1991). The works of Jean Baudrillard add new aspects to the commodification theory of Lukács (1971) and Lefebvre (2000). Baudrillard argues that consumption entails the manipulation of signs, commodities are signs 'commodity-sign'. Allowing these signs to be separated from the material counterpart, moving from a material emphasis to a cultural emphasis (Baudrillard, 1983).

“The very definition of the real has become: that of which it is possible to give an equivalent reproduction. The real is not only what can be reproduced, but that which is always already reproduced. The hyperreal... Which is entirely in simulation.” (Baudrillard, 1983).

Consumer Culture Theory is rather new, but it is based in long lasting concepts. CCT aims to address the dynamic relationships between consumer actions, the marketplace and cultural meanings (Arnould & Thompson, 2005). Consumer Culture Theory has been being used to study online communities of customers, to understand their behavior and decision-making on the internet (Zonneveld & Biggemann, 2014). The study of online communities and its behavior has been of interest since the popularization of the aforementioned. Virtual economies are no different from traditional ones, only the nature of the commodities change, they do not occupy a physical space. Hence, theories used in determining consumer behavior in traditional economies are valid if applied to virtual ones. There have been prior researches that have used CCT in virtual economies (Lehdonvitra, 2012; Weijo et. al, 2014).

In this regard, Featherstone (2010) understands the consumption of (virtual) goods as an hedonic and artistic process, contemporary consumers seek pleasure, thus visual attributes are taken into account (Lehdonvitra, 2014). We understand that a contemporary consumer will try to maximize the pleasure, if applied to virtual goods, this means that visual beauty and other socially constructed attributes are taken into account when purchasing aesthetic virtual objects. Visual attributes are not the only factor that determines a purchase, sociologists have long discussed factors such as bonding, status , group membership or self-identity (Lehdonvitra, 2014). Even purely aesthetic and ornamental items have value, which is socially constructed, in contrast to functional virtual items that give a direct advantage.

We have had a glimpse on the three main perspectives of Consumer Culture Theory, narrowing the theoretical lense to the consumption of the emotional and social aspect of commodities. Hence it is now time to introduce and discuss the value of symbolic consumption and how this concept adapts to our research question.

4.1.1 Symbolic consumption

This research focuses on the consumer behavior of players towards buying vanity goods, in other words, digital objects that do not provide any factual advantage when owning them. Symbolic consumption, as described by Grubb and Grathwohl (1967) attempts to link the psychological construct of an individual's self-concept with the symbolic value of goods purchased, the symbolic value will only be perceived if the symbolism of the commodity explained by Baudrillard (1983) is socially recognised (Grubb & Grathwohl, 1967). The self perception of goods and its social acceptance is what makes them more desirable to be purchased by individuals, thus adding symbolic value. Grubb and Grathwohl (1967) set these two core concepts to define symbolic consumption: self perception and symbolic value.

Both are intertwined, self perception is affected by various social factors and variables that construct the individual's self, thus perceiving one or other symbolic value from certain objects. The symbolic value varies from individual to individual or from one consumer community to another (Wattanasuwan, 2005). Individuals seek meaning in goods, the self pursues meaningfulness in its actions (Giddens, 1991). "In order to achieve a sense of the existential self, it is essential that we continually fill up this emptiness with the meanings which we believe can symbolically constitute a sense of who we are" (Wattanasuwan, 2005:2). Existing literature suggests that individuals build up symbolic meanings for the creation of the self (Vigneron & Johnson, 1999, Wang, 2013; Seo, 2015). This is also supported when it comes down to virtual goods (Hamari 2010, 2013, Lehdonvitra, 2011, Belk, 2014).

Lanier and Rader (2017) expose that "meaning is a fundamental aspect of symbolic consumption and lies at the heart of consumer culture theory (CCT)". CCT contemplates

many theoretical approaches to the study of consumer culture, being one of the primary concepts the concept of meaning (Lanier & Rader, 2017). Levy (1959) in *Symbols for Sale*, he argues that “People buy things not only for what they can do, but also for what they mean” (118)

4.1.2 Prestige-Seeking Consumer behaviour

Belk (1995) describes collecting as “the process of actively, selectively and passionately acquiring and possessing things removed from ordinary use and perceived as part of a set of non-identical objects or experiences” (p.67) (Zonneveld & Biggeman, 2014). Consumer behaviour theory studies the purchasing behaviour of individuals. Consumer behaviour theory aim is to predict what individuals will buy (consume) given specific conditions, thus considered as a more precise and useful theory for our research objectives: understanding purchasing behaviour of aesthetic commodities in online video games.

Consumer behaviour theory studies different attitudes related to consumption, such as hoarding, compulsive buying or collecting (Zonneveld & Biggeman, 2014). Zolfagharian and Cortes (2011) argue that much of the literature on consumer behaviour. There is the economic/ utilitarian perspective surrounding acquisition decisions that principally looks at brand choice, or there is the experiential/ hedonic perspective that concentrates on product use. One of these attitudes is prestige-seeking consumer behaviour, let us define prestige as in Vigneron and Johnson (1999):

“1. The consumption of prestige brands is viewed as a signal of status and wealth, and whose price, expensive by normal standards, enhances the value of such a signal (perceived conspicuous value). 2. If virtually everyone owns a particular brand it is by definition not prestigious (perceived unique value). 3. The role-playing aspects and the social value of prestige brands can be instrumental in the decision to buy (perceived social value). 4. For a brand which satisfies an emotional desire such as a prestige brand, a product's subjective intangible benefits such as aesthetic appeal is clearly determining the brand selection (perceived hedonic value). 5. Prestige is derived partly from the technical superiority and the extreme care that takes place during the production process. For instance,

a Rolex Sea- dweller works 1,220 meters underwater and is hand-crafted (perceived quality value).”(2)

Vigneron and Johnson (1999) define five values of prestige combined with five different motivations that we will be used throughout in the analysis and discussion sections.

First, the authors list conspicuous consumption, which placed the utility of prestige products in the capacity to display wealth and power (Vigneron & Johnson, 1999). Known as Veblenian consumers (Francis & Mathooko, 2015), they put more importance to the price as an indicator of prestige, their main objective is to impress others (Vigneron & Johnson, 1999).

Second, the snob effect, which takes into account the personal and emotional desires when purchasing or consuming prestige brands (Vigneron & Johnson, 1999), it also influences and is influenced by other individuals behaviors, it overlaps (Mason, 1992), similar to the co-construction of the self (Belk, 1988). The authors explain that this effect can occurring during two circumstances:

“(1) when a new prestige product is launched, the snob will adopt the product first to take advantage of the limited number of consumers at that moment, and (2) "snob effect is in evidence when status sensitive consumers come to reject a particular product as and when it is seen to be consumed by the general mass of people" (Mason 1981, 128)”

Third, the *Bandwagon Effect: Perceived Social Value*, this effect was coined by Leibenstein (1950). To better understand this effect, Vigneron and Johnson (1999) use Belk’s (1988) concept of extended self. Individual’s desire to own prestige and luxury brands serve as a symbolic marker of group membership. This can be clearly seen with Apple users and their purchasing behaviour towards new versions of the Iphone (Lusensky, 2014).

Fourth is the Hedonic Effect: Perceived Emotional Value

“Certain goods and services have been known to possess emotional value in excess of their functional utility (Hirschman and Holbrook 1982; Sheth, Newman, and Gross 1991)” (as in Vigneron & Johnson, 1999). Hedonist consumers put more importance to their own

sensations, emotions and feelings than to the functional utility or prestige given by that good. Placing less emphasis on price as an indicator of prestige (Vigneron & Johnson, 1999).

The fifth is the Perfectionism Effect: Perceived Quality Value. These consumers are opposite to hedonists since they use the price cue as an evidence of the prestige and quality of the acquired goods (Vigneron & Johnson, 1999).

The aim in introducing prestige-seeking consumer behaviour is to be able to analyze the results of this study by classifying them as different categories of consumer behaviour if possible. Understand the patterns of consumption and the player's motivations to consume aesthetic digital commodities.

While Vigneron and Johnson (1999) define a total of five effects, this thesis will only observe three of them: The Veblenian Effect, the Snob Effect and the Hedonic Effect. The bandwagon and the Perfectionism Effects cannot be observed and analyzed in this thesis due to data limitations. Including data trends of CS:GO market purchases would mean to broaden the scope too much and lose focus to answer the research question.

4.2 Extended self in the digital age

To better understand online purchasing behaviour it is important to define the concept of the extended self, coined by Belk (1981). Originally, Belk (1981), argued that the extended self are those self-constructions around our “family, friends, places and possessions that one feels attached to”. On a revision of his theory, he argues that the extended self has suffered changes with digitalization. First and foremost, dematerialization of possessions. We still have material possessions, but with the digital age, individuals have dematerialized several possessions (f.ex: music, photos, documents), this retains similarities with Baudrillard's hyperreal and postmodern consumer's consumption, but the bond of the extended self has not changed. Belk (2014) discussed that virtual objects do differ from physical objects in contrast with Lehdonvitra (2012), who argues that there are no differences. For Belk, physical goods

have a stronger bond with the owner than digital commodities, which feel less ‘real’ according to Siddiqui and Turley (2006), and may be lost, thus non-digital copies are made. However, for our research, this aspect is trivial since there are no physical counterparts of the majority of digital items in video games, (f.ex, there are no physical skins of certain video game weapons or characters). The importance of virtual objects over physical ones can still be observed and analyzed in this research.

Belk (2014), Lehdonvitra (2012), Hamari (2010) Artz and Kitcheos (2016) among others, argue that avatars and in-game behaviours on the internet and video game are a reflection of the self, thus, following Belk’s nomenclature, they are an extension of the self, a digital one. The purchasing behaviour of digital skins in CS:GO might be a reflection of the self in the digital sphere, the virtual marketplace in this particular case. Saren (2007) argues that “consumers are doing more than displaying their status or identity through products; they are creating an ‘extended self’ by appropriating and incorporating the objects and symbols of their consumption” (346). Saren is referencing to luxury objects, not digital commodities, nevertheless, in the video game CS:GO, depending on their rarity and popularity, certain objects are perceived as luxury items.

4.2.1 Co-construction of the self

This extension of the self is also co-constructed by the online community and the interactions between users, this is one of the updates suffered by the extended self by Belk (2014) is the co-creation of the self in digital spaces. On the internet, most of our activities are social and consist of interactions with other users or players, social media 2.0 is based on social interaction: commenting on forums or social networks, playing online etc. Are different activities that connect us with others. Belk (2014) discusses that these actions help us construct our extended self in the digital world. Turkle (2011) refers to it as collaborative self, since it is constructed from the interaction with other users. The user constructs their extended self on social networks by exchanging messages and images with other users, which

will answer back with comments and/or likes, thus shaping the self of the former. It is, in fact, a collaborative process.

Belk (2014) argues that users need to reaffirm their digital self and seek the approval of their friends or contacts through likes and comments. In relationship to our research, we understand that players may seek recognition and construct their extended self by buying virtual objects and gain status in the digital world of certain video games, instead of cool pictures or statuses, you own virtual clothes or weapons that distinguish you from the rest.

In regards to the co-construction of the self, this thesis will aim to determine to what extent are virtual purchases influenced by the community of players.

5. Video game selection criteria

In order to study the motivations for consuming purely aesthetic virtual goods, the video game platform Steam and the biggest online forum, Reddit will be used to obtain and analyze the necessary data to answer our research questions. The Steam community is based on publicly accessible webpages: every user in the Steam community has a web page dedicated to his profile, as well as webpages dedicated to groups and games (Becker et. al. 2012). This online social platform features a digital marketplace, where players can buy and sell items that they have obtained or purchased in a game available on Steam. Not all games have this option available, thus our potential object of study is reduced, to a fraction of the available games, nevertheless, most played games offer the option of trading their virtual objects at the Steam marketplace, since it increases revenue profits. These games range from a variety of genres and mechanics, hence it was considered unviable to include them all in our study, firstly, because the virtual commodities in the market may be too different from game to game and have different uses and since the communities playing them might differ greatly and so may their purchasing behavior. Thus rendering potential data unusable.

After making this distinction, an in-depth literature research was carried out, which showed that a great number of articles addressing purchasing behavior of virtual goods used the genre MMORPG (Massive Multiplayer Online Role-Playing Game) as their object of study. MMO video games In order to maximize the contribution of this research, it was decided to study the genre of FPS (First Person Shooter), the reasons for this decision are as follow: only a small number of scientific articles made references to this type of games when studying the player's purchase intention towards virtual items. FPS are a popular genre amongst the gaming community, CS:GO is the second most played game of 2016 with an average of 360.600 players per hour and the first of its genre (Makuch, 2017). Is the first person shooter with the higher amount of steam market transactions per day as well.

Following the aforementioned criteria, CS:GO was the selected game to research the purchasing behaviour of players towards aesthetic items in online video games with real

currencies. To do so, this study followed a rigorous methodology to collect and analyze first-hand data to answer the RQ. The used methodology is detailed in the following section.

6. Methodology

This section presents the methods used and the process to collect and analyze the pertinent data of our aforementioned case study, the video game (Counter Strike: Global Offensive) to ensure a rigorous and scientific research with valid and significant results.

Game studies is a fairly new and multidisciplinary field, with researchers presenting backgrounds in social sciences, humanities, engineering or design (Andiloro, 2017). There are various methods available when researching game studies, Mäyrä (2008) defines three different areas of methodology: humanities methods, design research methods and social sciences methods. The first one revolves around semiotic and structuralist thought, studying systems like human language, psyche, society in a digital game, presenting influence in literary, textual, music and performance studies in the gaming field of study (Mäyrä, 2008). The second research method presented by Mäyrä (2008) considers video games as software products, since “the main emphasis in game design is on producing games rather than research papers” (Mäyrä, 2008:162), this methodology will not be discussed in this thesis since it differs from its aim and objective of studying players’ behaviour when purchasing virtual goods. Social sciences is the third methodological toolkit presented, which is focused on the study of empirical, objectively observable reality (Mäyrä, 2008) and is divided in qualitative and quantitative methods. The first one focuses on semi-structured or unstructured interviews based on a list of topics, encouraging a direct two-way communication. Interviews provide detailed information of respondents’ motivations and experiences and the interviewer can actively help the interviewees, but samples are usually rather small (Mäyrä, 2008:161), thus information acquired from interviews may not be significant or limited only to a demographic area.

The last of the social sciences methods is quantitative research, a method that attempts to quantify attitudes and behaviours of larger populations, through surveys (Mäyrä, 2008). This method is often used in gaming studies when analyzing a large community of players and its behaviour (Hamari, 2016; Ho & Wu, 2012). The quantitative method in social sciences is the

most accurate and suitable to answer the research question of this thesis, thus we will proceed to explain how it is implemented in our research and its setbacks reduced to a minimum.

6.1 Methodological approach- Quantitative method

For our research, design and aim and to fully answer our research question, a quantitative method was most suitable to fulfill our needs in studying the behaviour of players and determining their reasoning behind purchasing cosmetic items in-game. According to Bryman & Bell (2015) and Bryman (2016) Surveys offer a bigger reach than other methods such as qualitative interviews, are quicker to administer and do not suffer from interviewer effects, this method is also more convenient for respondents, they can complete the questionnaires at any time with no pressure. Self-completion surveys are not exempt of disadvantages, according to Bryman (2016), respondents cannot be helped when answering, thus questions have to be understandable and avoid ambiguous expressions. There is no opportunity to probe respondents to elaborate an answer. It is also not possible to ask for extra information since the respondents are anonymous. There is a greater risk of missing data and response rates are lower than in qualitative interviews (Bryman, 2016).

In order to palliate the disadvantages that online surveys entail, the questionnaire was designed from a player point of view, using terms that the community understands, such as “play to win” (P2W), but those were also explained in order to prevent any misunderstanding with non-native English speakers. The survey was tested beforehand to assure its quality and understanding of all the questions from the respondents.

6.2 Data collection and survey design

Self completion surveys are the most suitable data collection method for our research to have a big enough sample to regard the results as relevant for our case study, which has millions of players. In order to gather the necessary data, a survey was prepared following Lawrence (2016) and Bryman (2016) guidelines and distributed on different forums and online gaming communities of Counter Strike:Global Offensive in order to reach out to a relevant sample of individuals that played the game actively. The survey was designed using an online software

that facilitated its tracking and conversion to a matrix of data for further manipulation and recoding of the variables. For the span of two weeks, from the 19th of April to the 5th of May of 2017 the questionnaire was actively distributed on different forums and online communities of the video game Counter Strike: Global Offensive. The members of these communities were active players with certain degree of involvement with the game, casual players may not be part of these external communities and thus not be reflected in the sample of respondents.

The survey was prepared keeping in mind our theoretical framework, and research question reflecting aspects of the presented theories with each question (see figure 7). The questionnaire contained 26 questions divided into four different blocks of variables: demographic, such as age, nationality and education level. Game involvement variables aim to determine how engaged players are into the game by measuring hours played per week, enjoyment while playing and ways of playing the video game. Finally, the third block of variables revolved around the attitude towards virtual goods and how they are perceived by players. Personal questions regarding studies level or spending in virtual goods were rephrased into indirect questions in order to not seem too personal to the respondents and preventing them from dropping the questionnaire or affect their answers as explained by Lawrence (2016) in her guideline to set a self-completion survey. No questions could be skipped except for the age and nationality ones since many respondents were reluctant to disclose personal information during the pilot questionnaire, thus these questions in particular were made optional on the final version.

6.2.1 Test Survey

Prior to the publication of the final questionnaire, a test survey was distributed through the subreddit of Counter Strike: Global Offensive and different Steam Community groups. The respondents were asked to voluntarily answer the questionnaire through an external Google platform, once all mandatory questions were answered, the survey was registered in our database for future analysis. The test survey was well-received by the CS:GO community on the forums and obtained 307 replies in less than one week (April 14- April 19). Despite the

popularity of the survey, numerous feedback comments pointed out different flaws on several questions and other privacy issues that respondents were not comfortable with.

6.2.2 Test Survey issues

Respondents were reluctant to provide their age and nationality, as well as their monthly salary. A sensible number of respondents that answered these questions did it in a non-serious manner, claiming to have a the highest salary possible at young ages. Since the data provided was unreliable, these questions were made optional or completely removed in the case of monthly income. By removing these parameters, it directly affects the explanatory power of our research model, but since the data was unreliable, it was discarded for the final version of the questionnaire. Other comments received pointed out minor mistakes and problems in understanding technical words, thus, for the final version a more plain and accessible language was used as recommended by Bryman (2016).

Changes made to the test survey included the aforementioned removal of the monthly salary variable, and made the questions of age and nationality optional. These questions aimed to provide a detailed image of the different demographic groups playing CS:GO, it was considered that salaries had an impact on the player behaviour when purchasing virtual items. In the following section, the final research model is presented and discussed.

6.3 Research model

The variables of the survey were grouped into three categories (demographic, gaming experience and virtual objects related variables). Following the relevant aspects studied in prior articles (Hamari, 2015: Ho & Wu, 2012: Mäntymäki & Salo 2013: Luo et al. 2011) amongst others. According to the literature review of Hamari (2017) in which 24 studies were analyzed from 2008 to 2015, “purchase intention of virtual goods” was the most used variable, 24 times, thus, it was present in all the studied papers, our model took various variables from the literature review done by Hamari (2017) of other video game purchasing intention and behaviour studies. The variables were observed, selected and adapted to fit our

research question. Our research model also included aspects mentioned by Grimes (2011), a technical artist from Valve, the company that created Counter Strike: Global Offensive.

None of the aforementioned investigations studied First Person Shooter video games, most of them studied Massive Multiplayer Online Games (MMOGs), thus we had to adapt our model to fit the FPS genre. The model consists of a dependent variable formed by two questions of the questionnaire and a group of different independent variables that are expected to have explanatory relevance towards our research question of determining different player profiles and their behaviour towards buying vanity items in the online video game CS:GO. The research model is based off other models such as (Ho & Wu, 2012) and that analyze purchasing behaviour of virtual items in video games as well. engagement, emotional value, purchase behaviour were variables taken into account when designing the research model, other works already used them successfully.

The model shown below has three groups of variables: Demographic variables (Age, Education level), Game experience variables ('CS:GO rank', 'Hours played weekly' and 'Main reason to play'), the three of them are influencing game enjoyment, which, according to the model, would directly influence the dependent variable 'virtual items purchase intention'. The last group of variables is the one related with the virtual objects 'skins', formed by a total of five variables: 'Frequency of purchase', 'Price influence', 'Perceived value of virtual items', 'Skins fondness' and 'Skins importance to game enjoyment'.

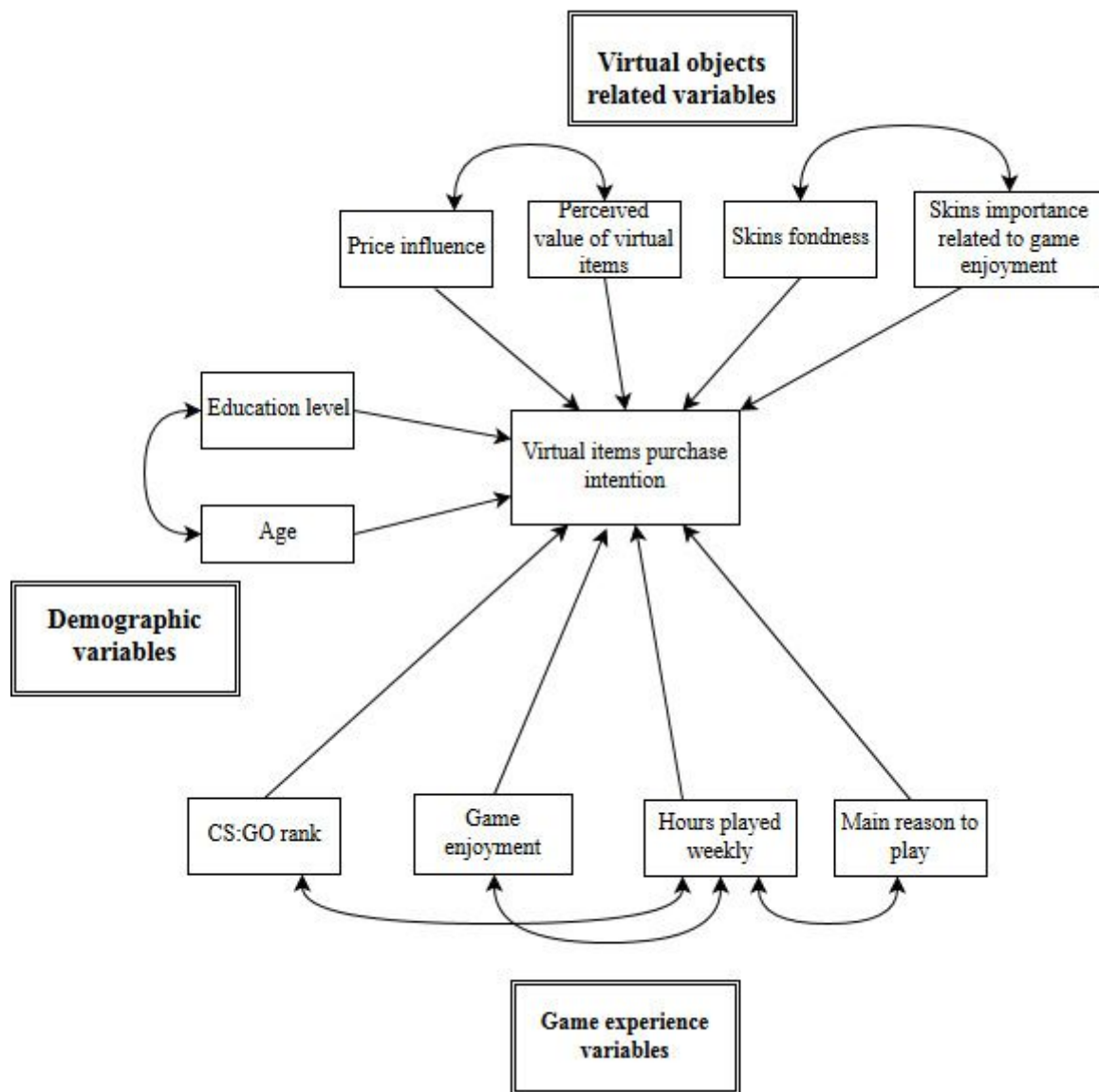


Figure 8: Linear regression model

6.3.1 Variables used in the research model

This table shows the final list of variables included in the research model. The dependent variable is a merged variable of four categories of V13 and V14 (see appendix II). The categories are: “No intention”, “Low intention”, “High intention” “Very high intention”. Regular values were recoded equally into the low and high intention categories, to respect the distribution of V13 and V14. The variables pertaining to the model are as follows:

Variable	Purpose (recodification notes)	Related theory/information
Dependent variable		
V0: V13 and V14 merged together, (Frequency of purchase and spending in the last 12 months on skins).	Determine the annual spending in virtual objects.	Use the merged variable as an indicator of purchase intention
Demographic variables		
V1:Age	Determine age	Group players in groups according to their age. Create a player profile.
V2:Gender	Determine gender	Classify the sample by male /female players. Create a player profile.
Gaming experience variables		
V5: Hours played per week	Determine engagement with the game by knowing the hours spent playing per week	Create a player profile. Measure of game engagement and involvement.
V6: Main reason to play	Know the main reason to play of the respondent (Enjoyment, Competition or Socializing).	Co-construction of the self and Extended self
V7: Enjoyment while playing the video game	Determine enjoyment while playing. 1-5 Likert scale recodified.	Extended self/ Co-construction of the self
V29: What is your rank in CS:GO?	Classify the sample by their current CS:GO rank. Recoded into 3 categories (low-medium-high)	Rank in CS:GO indicates the skill of the player in competitive matches. A higher ranking may indicate a higher game involvement. Players with a higher involvement tend to buy more virtual goods.

Virtual objects variables		
V10: For you, how valuable (economically) are virtual cosmetic items (skins) in general?	Determine the perceived value of skins by players.	Perceived value theory
V28: Overall, - for you-virtual items are in comparison to non-virtual goods...	Assess the perceived value of virtual items and 'real' goods of the respondent	Perceived value theory
V13: Talking about purchasing skins or keys, with what frequency do you buy them?	Determine the frequency of purchase of virtual items	Customer Culture Theory/Consumer behaviour
V8: Are you fond of your virtual cosmetic items (skins) in general?	Determine the level of attachment and symbolic value perceived by the respondent towards his/her virtual goods	Symbolic value
V11: For you, how important are 'skins' related to your in-game experience?	Determine the importance of owning 'skins' (virtual items) in regard to the in-game enjoyment.	Extended self theory. Recoded into four categories.

Figure 7: Variables pertaining to the statistical model.

6.4 Validity and reliability of data

The data was gathered on different specialized forums of the video game Counter Strike: Global Offensive, this was done in order to reduce the number of random respondents. The survey was voluntary and not directly sent to the respondents. Individuals who answered the questionnaire did it without external pressure and on their free-will. Although this does not assess that the data is 100% valid and reliable, it reduces meaningless and random answering significantly.

6.5 Ethical considerations

The survey was distributed with the consent of the forum moderators. Potential respondents were informed of the nature of the research, hence their data and answers would not be sold to third parties or used for marketing research, there was complete disclosure and they were given an e-mail contact in case they happened to have questions. The identities of the respondents were anonymous and only their age and nationality were asked, albeit those were optional to be answered.

6.6 Hypotheses

In order to facilitate the answer to this thesis' RQ, his study aims to answer the following hypotheses:

H1: Game rank has a direct effect into virtual cosmetic objects consumption. A higher rank denotes a higher game involvement, thus more interest into the videogame dynamics and virtual objects.

H2: Virtual object purchasing has a direct positive impact in game enjoyment.

H3: The more hours played, the stronger the emotional bond with virtual objects is.

H4: Players that have a higher emotional value towards their virtual objects tend to purchase items more frequently.

7. Results

In this section the results from the web questionnaire distributed in different game forums and communities are presented in a descriptive way. The survey was answered by a total of 1006 respondents in the span of one week (25 April - 1 May of 2017). The data obtained was downloaded to later be cleaned and re coded using a statistical software, facilitating its presentation and analysis.

Note: all outputs are available on Appendix 1

7.1 Gender, age distribution and study level

The total sample $n=1006$ is composed of 991 male respondents (98,5%) and 15 (1,5%) female respondents. In regards to the age, the variable was recoded into five categories (11-14), (15-17), (18-21), (22-26) and (26+), this was done in order to homogenize the sample distribution and facilitate the comprehension and analysis of results. The distribution by age was as follows: 5% between 11 and 14 years of age, (33,5%) had between 15 and 17 years while 18-21 years of age was the most repeated answer with 41,7% of respondents forming part of that range. As age went up, the number of players descended, being 139 (13,8%) between 22-26 years and only 39 respondents (3,9%) were over 26 years of age (see output 1).

Education level has a similar distribution, 3% is studying at a primary level, almost half of the sample respondents is a high school (secondary education level) student, 35,7% of the respondents are university students. Only 5% are master degree (4,4%) or PhD students (0,6%) (see output 2).

7.2 Playing hours, enjoyment, social play and motivation

The variable 'playing hours' (v2) (see output 3), shows a normal distribution, with higher frequencies on the middle and less on the extremes. Most respondents (32,6%) played

between 10 and 20 hours per week, 24,8% played 20-40h for 21% of individuals that spent 5 to 10 hours in the game. Only 10,8% of the sample respondents played for less than 5 hours, the same percentage (10,8%) did so for over 40 hours. In regards on how players spent their playtime, 28,8% did it playing alone, while 71,2% did it with friends, being those in-game friends or offline friends too.

The reason to play the game of the respondents is divided into three categories: “enjoyment”, “competition” and “socializing. A total of 329 (32,7%) plays for the first reason, enjoyment, while 625 (62,1%) do it for the competition factor, being the majority. The 52 respondents left (5,2%) did it for socializing as their main reason to play the video game (see output 4).

After describing these variables, the average player of Counter Strike: Global Offensive according to this sample is a young male of 18-21 years of age that spends 10-20h playing the game on a weekly basis and his main motivation is to compete with other players. This is the average profile, but that does not answer our research question of what are the motivations when purchasing aesthetic virtual goods? Let us first present the frequency of those purchases and which profile of players have the higher (and lower) buying frequency.

7.3 Purchasing frequency, spending & game rank

Purchasing frequency and last 12 months spending variables have no missing cases, having thus n= 1006 (100%) valid ones (see outputs 5 and 6). The descriptive analysis of the purchasing frequency variable shows that almost half of the respondents (47,1%) purchase virtual items less than once a month, it is the most repeated frequency. 23,7% answered that they never, or just once purchased aesthetic items, while a similar amount (21%) do it once a month. The rest, (8,3%) do it on a weekly basis or with a higher frequency.

The descriptive results and distribution of the spendings in the last year has a similar distribution to the purchasing frequency. A total of 124 individuals (12,3%) spent 0€ in the last year, while 421 (41,9%) purchased items for a value between 0 and 50€. 36,8% of the

sample spent between 50 and 500€, (21,1%) spent 50-150€ while 158 surveyed individuals (15,7%) spent over 150 up to 500€. A downward trend is observed after the 0-50€ gap. 9,1% spent over 500€ in the last year, only 3% of those surpassed the 1500€. Since both variables have a similar distribution, the correlation was tested, resulting in a significant result with a correlation coefficient of ,456**. Players that purchase more frequently tend to spend more money in the last 12 months. After analyzing the results from both variables, the most repeated profile is a player that has a purchasing frequency of less than once a month and spends between 0 and 50€. As explained in section 6.3.1, these two variables were merged into one as the purchasing intention dependent variable for the regression model.

CS:GO go has a total of 18 ranks divided in three groups of 6. The rank system was recoded and simplified into 3 categories (see output 7): low rank (from Silver I to Silver Elite Master), mid rank (from Gold Nova I to Master Guardian II) and high rank (from Master Guardian Elite to The Global Elite). The rank variable was tested for correlation with purchasing frequency in order to verify the first hypothesis (**H1**) (see output 13): “Game rank has a direct effect into virtual cosmetic objects consumption. A higher rank denotes a higher game involvement, thus more interest into the videogame dynamics and virtual objects.”

The results show a non-significant negative correlation of 0,040 with p value of 0,164. H1 is false, there is no correlation between the players’ purchase frequency of virtual aesthetic skins and their rank.

7.4. Importance of skins and relevance in game experience

Amongst the surveyed players of CS:GO, when asked about the importance of aesthetic virtual items, 708 (70,4%) answered “To customize my character/ to stand out visually”, while only 93 (9,2%) thought the importance of owning skins was because “it gives status and/or distinction”. 69 (6,9%) individuals buy the skins to “resell them”, while 104 (10,3%) do not buy skins. When observing the variable “For you, how important are ‘skins’ related to your in-game experience?” the variable was recoded from a 1-10 likert scale into four

categories: “no importance”, “low importance”, “high importance” and “very high importance”. Most of the respondents, 659 (65,5%) consider that skins are not important to enjoy the game, 191 (19%) give it low importance, while only 156 give it high or very high importance to their game enjoyment.

When testing the second hypothesis (**H2**) (see output 14): “H2: Virtual object purchasing has a direct positive relation in game enjoyment.”. The Pearson coefficient of correlation is significant at the 0,05 level with a p value of exactly 0,05 and has a value of 0,062*. The second hypothesis can thus be accepted, but has to be taken carefully since the p value is high and the result is a low correlation coefficient.

7.5 Relevant characteristics

Variables 16 to 20 (see output 10) asked the respondents about the importance of the visual aspect (v16), the rarity/uniqueness (v17), the price -in the sense of a good deal- (v18), the type of weapon (v19) and the condition of the object (mint, brand new, used, scarred...). The five variables were measured using a 1-10 likert scale, 1 being not important and 10 being extremely important. The objective was to determine to what degree these aspects listed by Grimes (2011), were important to the player when purchasing vanity items, ‘skins’.

V16, the looks, had the highest mean value (8,75) a standard deviation of 2 and the mode was 10, the visual aspect of the object was regarded to be extremely important. The type of weapon (v19) had a mean value of 8,39 and a mode of 9, and a standard deviation of 2,2 being the second most valued aspect by the players. The importance of a good price (v18) had a mean of 8,17, with a standard deviation of 2,2 and a mode of 9. The condition of the weapon (v 20) had a one point lower mean value (7,17). The rarity/uniqueness of the skin (v17) had the lowest mean value with 4,92 and a standard deviation of 2,8. The looks, condition, price and type of weapon variables had all high values, in contrast, the uniqueness/rarity of the virtual item was not valued highly by the respondents.

7.6 Emotional bonding & purchase frequency

Emotional bonding with a virtual object is complex to measure with a quantitative method (Zonneveld & Biggemann, 2014). This survey used two different variables (See output 11 and 12 to obtain precise and reliable data from the respondents. First, v8: “Are you fond of your virtual cosmetic items (skins) in general?” Shows a slightly negatively skewed distribution, meaning that most results are concentrated on the higher values. V8 was recoded into four categories: “no fondness”, “mild fondness”, “great fondness” and “extreme fondness”.concentrating the most answers between 7 and 8 on the 1-10 likert scale. The mean value is 6,78, while the mode is 8. Respondents are fond of their skins (virtual weapons). Variable 9 gives three possible reasons which according to Grimes (2014) and Vigneron and Johnson (1999) are the most common motivations to grow attached to owned commodities. “For its looks” was the option with the higher frequency of answers, 652 individuals (64,8%) claimed to be fond of their virtual weapons because of their looks. 172, (16,9%) of the respondents answered “For its background/story, it was one of my first skins”. 131 players’ choice was “for its rarity”. “Other” was the least picked option with a total of 53 respondents.

When testing hypothesis number 3 (**H3**) (see output 15) that argues: “The more hours played, the stronger the emotional bond with virtual objects is.” After doing a Pearson correlation coefficient test, the results are significant to the p value $<0,005$ and show a positive correlation coefficient of 0,092*, a low significant correlation exists between both variables, thus making (**H4**) (see output 16) true. The more time a player spends playing and using their virtual items, the more emotionally attached they grow to them.

In regards to the last hypothesis (**H4**) states that: “Players that have a higher emotional value towards their virtual objects tend to purchase items more frequently. “ In other words, there is a correlation between how attached a player is to their items to the fact of purchasing more. If the individual had no attachment, there would be no reason to purchase (virtual) objects (Belk, 2014). When doing the Pearson coefficient of correlation test the results are significant with a p value of ,000 and a correlation coefficient of ,325**, thus confirming (H4), there is a

moderate positive correlation between emotional value towards “skins” (virtual items) and the frequency of purchasing those objects.

7.7 Statistical model analysis

Model Summary					
Model	R Square	Adjusted R Square	Change Statistics		
			R Square Change	F Change	Sig. F Change
1. Demographic variables	,006	,004	,006	2,619	,073
2. Virtual objects variables	,212	,207	,206	59,813	,000
3. Gaming experience variables	,233	,225	,021	6,281	,000

Figure 9: Linear regression model summary

After presenting the results and answering the five hypotheses suggested for this research, the next step is to analyze the research model presented in the methods section that aims to explain the purchase intention of skins amongst CS:GO players. To do so, the statistic model has been tested using a multivariate linear regression, grouping the variables into different groups and adding them step by step to better observe the explanatory power they have over the dependent variable.

The independent variables were introduced in groups according to their variable group (Demographic, gaming experience variables and virtual objects variables). The first group included was Age and Education level. The variables were not significant (,073) and had no impact on the adjusted R square (,004).

The second step included adding the ‘virtual objects variables’, which included, as shown in the model: Price influence, Perceived value of virtual items, Skins fondness and Skins

importance related to game enjoyment. This second set of variables caused a variation of ,206 (total ,207) on the Adjusted R Square coefficient, meaning that these variables had a possible explanatory power of 20,6% when addressing the independent variable of ‘virtual items’. The increase is significant.

The third and last step included the Gaming experience variables, which were not as influential as the ones related to virtual objects included in step 2. The third group caused an increase of 0,21 on the R Square, a 2,1% change, significant nonetheless. This indicates that, how players play the game is not really as important as their perception and emotions towards virtual objects (seen in the second group of variables).

7.8 Results summary

The aim of this section was to rigorously describe the statistical results of the five hypotheses as well as testing the research model. All results were observed and outlined in order to provide an overview of the outputs without theoretical remarks or further interpretation.

From the four hypotheses, three turned out to be true, while one of them was false, thus the null hypothesis was accepted in the case of the first one **(H1)** “Game rank has a direct effect into virtual cosmetic objects consumption. A higher rank denotes a higher game involvement, thus more interest into the videogame dynamics and virtual objects.” Game rank showed no significant correlation with the dependent variable of the research model “purchase intention”.

The other hypotheses **(H2)**, **(H3)** and **(H4)** had significant correlations, hypotheses 2 and 3 although significant, showed weak correlations: **(H2)**: “Virtual object purchasing has a direct positive effect in game enjoyment” had a significant correlation of 0,062* and **(H3)**: “The more hours played, the stronger the emotional bond with virtual objects is.” had a correlation of 0,092* significant to p value <0.05 . Thus, hypotheses 2 and 3 have little effect on the purchase intention of players in this video game.

On the other hand, (H4) showed a higher correlation, the last hypothesis (H4) “Players that have a higher emotional value towards their virtual objects tend to purchase items more frequently.” turned a ,325** positive coefficient of correlation, proving that as the emotional bonding with virtual items increased, so did the purchasing frequency.

7.9 Model summary results

The statistical research model was overall significant and had an R square value of ,252, which increased to ,395 if the purchasing frequency independent variable was included. The explanatory power of the model is slightly low but acceptable at >0,25. However, the demographic variables included (Age and Educational level), were not significant and had no contribution to increase the R square value. The second group of “Virtual objects related variables” caused an increase of ,222 while the “Gaming experience variables” group increased the R square in ,035 a slight yet significant increase.

Concluding that the variables related to perception of virtual objects value and in-game importance of those for the players, has a greater explanatory power than the gaming experience of the individuals, although the latter is still significant. On the other hand, age and educational level have no significant influence in the purchasing intention of players.

8. Analysis and discussion

In this section the data and results presented in the previous one will be analyzed and discussed using relevant theories introduced in the theoretical framework of this thesis. The results will be interpreted and contrasted using other scientific articles as reference to validate or reject the results of this work and aim to create a relevant discussion for this field of research and pave the way for future research.

8.1 Motivation to play and enjoyment

The core reason to play a video game is to have fun, to enjoy, to entertain yourself. Nowadays, there are many ways to enjoy a game and players play for a wide variety of reasons, motivated by both intrinsic psychological factors - the fun of playing the game - and extrinsic factors, such as material gain or reputation among peers (Hamari & Jarvinen, 2011). As well as stress relief, mental exercise, fun, or relaxation (Georgieva et al. 2015). In the case of the video game analyzed in this thesis, *Counter Strike: Global Offensive*, the motivations to play it were divided into three main categories that included the factors mentioned by Hamari and Jarvinen (2011) as well as Georgieva et. al (2015). These reasons were: “Enjoyment, Competition and Socializing”. These categories were created with the different CS:GO game modes in mind. The video game has a casual matchmaking system, a ranked match system with repercussions on the global score and rank of the player. Lastly, CS:GO has community servers, game modes created by the community where players can reunite and play a wide variety of modes (aim training, running, sniper challenges...), in these modes is easier to socialize and connect with other players.

The results of the survey show the following distribution: 62,1% of the respondents answered “Competition” as the main reason they play the game, 32,6% picked “enjoyment” and only 5,2% did it for “socializing”. These results are understandable when one sees how relevant CS:GO is in the eSports scene with thousands of professional teams around the globe, and the top 10 making 7,7\$ millions in 2016 alone (Perez, 2017). The game has a long-lasting

competitive tradition despite being rather new. Playing to compete may sound stressful to many and not enjoyable at all, but the data obtained from crossing both variable 7 and 8 show the following results:

The players that play for competition have the highest value in “Extreme enjoyment” (22,6%), for only 14% of the ones playing for enjoyment, while only 3,8% of the players that play to socialize have “extreme enjoyment”. On the other side, a total of 13,1% of players who play for competition purposes do not, or mildly enjoy the game, for 10,9% of players that play for “enjoyment” reasons. Those who play for socializing are the ones that less enjoy the video game, with a total of 32,7% having mild to no enjoyment while playing.

In conclusion, CS:GO players who play for the socializing factor are the ones that have the less fun. It is relevant to point that the community and social features of First Person Shooter (FPS) games are not the main focus of the genre. Meanwhile, The respondents playing for “Competition” show a mesokurtic distribution curve, while those playing for “enjoyment” show a leptokurtic curve with almost no presence in the extreme values of enjoyment on both ends. Hence, competition players tend to enjoy the game to extreme levels, but also show a prominence to not enjoy the game at all. While those playing for “enjoyment” have concentrated answers on “Great enjoyment” and not so much on “Extreme enjoyment”.

8.2 Enjoying the game without ‘skins’

In recent years, the video game industry has suffered changes in their business models (Alves & Roque, 2007; Hamari, 2009; Aleem, Capretz & Faheem, 2016). Through small payments, known as microtransactions, the player can obtain in-game currency and buy in-game objects or unlock new content that otherwise is not available for free (Jarvinen & Hamari, 2011; Artz & Kitcheos, 2016). Sometimes the game turns boring and repetitive, with long waiting times between actions, hindering the player’s game advancement and ‘forcing’ them to buy extra features and/or functional items to advance in the game and continue enjoying it (Pascal, 2011; Georgieva et. al, 2015; Artz & Kitcheos, 2016; Juho Hamari, 2017). This strategy is

used mainly by Free-to-Play (F2P) games, their business model generates part of their revenue this way (Lin & Sun, 2007: Alves & Roque, 2007: Lehdonvitra, 2009: Komorowski & Delaerne, 2016).

Counter Strike: Global Offensive is not a free-to-play game, you have to purchase it first in order to play. The game has optional maps and content that can be purchased, but no content affects the performance of the player when playing, nor the game turns boring on purpose with the mechanics described earlier. CS:GO does not have functional items that provide an advantage, the First Person Shooter from Valve does only reproduce purely aesthetic items with no impact on the gameplay experience (Yamamoto & McArthur, 2016). The discussion arises a question: Is it possible to enjoy *Counter Strike: Global Offensive* without purchasing extra content? What is the possible effect of virtual weapons ‘skins’ on game enjoyment?

Variable 11 shows positive skew distribution, most answers are concentrated on the lower values of the V11: “For you, how important are ‘skins’ related to your in-game experience?” (see output 8). 65’5% of the respondents consider skins not important to their in-game experience. 191 (19%) give it low importance, while only 156 give it high or very high importance to their game enjoyment. demonstrating that most players do not consider virtual skins of weapons to affect their game experience. Does that mean they do not care about these virtual commodities? It seems they do care, there are no official numbers, but certain calculations point that Valve made around 355,539,970\$ in 2016 from their Skins and other virtual content alone (Helvetti, 2016). The CS:GO virtual economy is a success.

8.3 Reasoning to buy virtual (aesthetic) items

As seen in the prior section, CS:GO players do not consider virtual aesthetic items to be important to their in-game experience, in contrast, the game’s virtual economy is generation thousands of millions in revenue. To answer this contradiction, is crucial to remember the different types of virtual items explained in the conceptual framework section of this thesis. Lehdonvitra (2009) differentiated three different types of virtual objects: Functional, aesthetic

and social. The latter is a connotation that can be present in either functional and aesthetic items. The main difference of the latter two is that functional items provide certain advantages or actual changes to the gameplay experience, while aesthetic items are just visual modifications or enhancements, they are also known as vanity items (Hamari, 2009: Yamamoto & McArthur, 2016).

The reasons to buy virtual functional items have been studied several times, showing that players' purchase intention was driven by factors such as: acquiring an advantage over other players, to be more powerful -faster-, to obtain limited content etc. (Lim & Seng, 2011: Pascal, 2011: Georgieva et. al, 2015: Artz & Kitcheos, 2016). On the contrary, virtual aesthetic items purchasing reasoning has not been studied as much. One of the aims of this research is to fill the gap and add new data and information to promote future research on this particular field of study. The variables V12 "Why are 'skins' important to you?" and V24 "What is the main reason for you to not buy cosmetic virtual items (skins)?" aim was to determine what reason influenced players to purchase (or not), aesthetic items 'skins' for their in-game weapons.

Based on Vigneron and Johnson, (1999) five types of prestige-seeking consumer behaviour, V12 grouped the categories to two: **"It gives me status/recognition"** (impress others and seeking social recognition, conspicuous consumption (Grimes, 2014) and **"To customize my character/stand out visually" (self-centered, hedonic consumption)**, to better fit and represent the Counter Strike: Global Offensive scenario and adjust to the available data since the income variable was not included after the issues on the pilot survey.

The data shows 51,1% of the respondents purchasing 'skins' to customize their character and visual aspect, while 12,2% are more inclined to impress others and do it for the status and recognition it gives amongst other players. Almost a third of the surveyed sample (29,6%) considered skins "not important". It is significant that almost one third of the respondents consider skins not important, this reinforces the fact that these virtual commodities are not key to enjoy the video game, as it happens with other Free-to-Play or Social Network games. Players consume 'skins' because they like them aesthetically, or want to impress others by making them unique, this was mentioned by Grimes (2014) as well.

The variable 24 (V24) “What is the main reason for you to not buy cosmetic virtual items (skins)?” pointed out that the main barrier when purchasing ‘skins’ was price, 62,6% of asked players considered that the price of ‘skins’ was too high. 11,7% claimed to not care about virtual items, while 10% prefer to buy non-virtual items rather than virtual aesthetic goods. 15,4% had “other” reason to not buy these digital items. While a total of 94 respondents (9,3%) prefer to obtain the skins for free, by playing the game or using external websites to trade and bet these virtual commodities. There is a remarkable business to trade and bet skins, but this topic was not addressed in this thesis due to its extension and complexity.

8.4 Emotional value and symbolism

Pleasures can be caused by emotional and symbolic values (not just physical or economical advantages) (Featherstone, 1991: Lusensky, 2014: Belk, 2014). When observing and studying the vanity items of the video game CS:GO, the emotional and symbolic were two significant aspects that partially explained the purchase intention of players.

Following Vigneron and Johnson, (1999) typology of prestige-seeking consumer behaviour and the results of the survey’s V12, this study observes both an hedonic as well as, to a minor degree a conspicuous consumption with a focus on impressing others and being recognized and stand out. While hedonic consumption is centered on the extended self of Beck (1988). The snob effect described by Vigneron and Johnson, (1999) can be seen in most weapon skins’ price trends, at first, when they are new and scarce, the prices are high (Grimes, 2014:Yamamoto & McArthur, 2016), but as the quantity of that type of skin increases, the price drops, making its distinctive and exclusive appeal drop.

In summary, the results of the research model show that emotional and symbolic value -amongst other variables- have a significant role in determining the purchase intention of players towards vanity items in the video game *Counter Strike Global Offensive*.

9. Conclusions

9.1 Answering the research question

This thesis research question asked: “What are the underlying factors that influence players of Counter Strike : Global Offensive to purchase virtual aesthetic items with real money?”. To answer the RQ, first a background check was performed, then a literature review of the existing studies and relevant research, afterwards a theoretical framework was composed with the most pertinent theories to interpret the resulting data from a web-based questionnaire that was created with the sole purpose of answering the RQ using an statistical model designed especially for this. The model provided significant results from the first-hand data of the survey, although limited, it showed that emotional value, fondness and perceived value of aesthetic virtual objects were significant indicators that influenced the purchase intention of players. To a lesser degree, the gaming experience such as enjoyment, hours played per week, in-game rank and purpose of play, were significant indicators as well, but with a low impact (0,05). Demographic variables such as age and education level had no significant influence.

Players buy these digital vanity items to fulfill their hedonic and conspicuous consumption necessities, to fulfill their extended self needs. This is the opposite to why players buy functional items in F2P and Social Network games, they buy them to stop being bored and start having fun when playing. That is not the case of CS:GO players, as determined by this thesis results, players of Counter Strike: Global Offensive do enjoy the game without ‘skins’, in fact they do not consider them relevant for their in-game experience. These virtual aesthetic objects fulfill different needs of emotional and symbolic value and hedonic consumption, just like owning a piece of art. In short, one can say that players buy these expensive ‘skins’ because these are “cool” and add “flavour” to the game.

10. Limitations and future research

This thesis made a great effort in trying to explain the factors that drive a player to purchase vanity items in a video game. Nevertheless, as any other study, it has limitations and flaws. Due to problems with the pilot survey, the monthly income could not be included in the final version of the survey, thus this might have significantly affected the outcome of the results. Another restriction is the limited focus, this case study is broad, thus several aspects were left out in order to make the study possible. The thesis did not include the market prices and fluctuations and did not study the scene of betting houses and exchange websites that trade skins for money or other skins too. A whole new thesis could be done on this issue.

A quantitative study has its advantages, it can provide an overview of a community with big enough sample and its data can be easily transformed and analyzed into meaningful outputs. However, it is impersonal and lacks detail and cannot address more specific issues that may arise after conducting a questionnaire. Hence, a qualitative study of different types of players of CS:GO and their personal motivations to purchase virtual items could be a good future study and a complementation to this thesis.

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Appendix I

This appendix includes all outputs relevant to the thesis that were not included in the body of the thesis in order to not clutter the text with tables and hinder the understanding of the results.

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	11-14	50	5,0	5,1	5,1
	15-17	337	33,5	34,2	39,3
	18-21	419	41,7	42,6	81,9
	22-26	139	13,8	14,1	96,0
	26+	39	3,9	4,0	100,0
	Total	984	97,8	100,0	
Missing	System	22	2,2		
Total		1006	100,0		

Output 1: Age

Education level		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary school level	30	3,0	3,2	3,2
	Secondary school level	501	49,8	53,3	56,5
	University degree or equivalent	359	35,7	38,2	94,7
	Master Degree	44	4,4	4,7	99,4
	PhD	6	,6	,6	100,0
	Total	940	93,4	100,0	
Missing	System	66	6,6		
Total		1006	100,0		

Output 2: Education level

Hours_played		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-5h	109	10,8	10,8	10,8
	5-10h	211	21,0	21,0	31,8
	10-20h	328	32,6	32,6	64,4
	20-40h	249	24,8	24,8	89,2
	40h+	109	10,8	10,8	100,0
Total		1006	100,0	100,0	

Output 3: Hours played

Social Play		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Play solo	290	28,8	28,8	28,8
	Play with friends	716	71,2	71,2	100,0
Total		1006	100,0	100,0	

Output 4: Social play

frequency of purchase		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never or just once	238	23,7	23,7	23,7
	Less than once a month	474	47,1	47,1	70,8
	Once a month	211	21,0	21,0	91,7
	Weekly or higher	83	8,3	8,3	100,0
Total		1006	100,0	100,0	

Output 5: Frequency of purchase

Spent in last 12 months on skins					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0€	124	12,3	12,3	12,3
	0-10€	197	19,6	19,6	31,9
	10-50€	224	22,3	22,3	54,2
	50-150€	212	21,1	21,1	75,2
	150-500€	158	15,7	15,7	91,0
	500-1500€	61	6,1	6,1	97,0
	1500€+	30	3,0	3,0	100,0
	Total	1006	100,0	100,0	

Output 6: Spent in the last 12 months

Ranking of CSGO					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low rank	62	6,2	6,2	6,2
	Mid rank	306	30,4	30,4	36,6
	High rank	638	63,4	63,4	100,0
	Total	1006	100,0	100,0	

Output 7: CS:GO ranking

Skins importance related to game enjoyment					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No importance	659	65,5	65,5	65,5
	Low importance	191	19,0	19,0	84,5
	High importance	124	12,3	12,3	96,8
	Very high importance	32	3,2	3,2	100,0
	Total	1006	100,0	100,0	

Output 8: Skins importance related to game enjoyment

Reason to buy skins

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	For their looks (visual appeal)	708	70,4	70,4	70,4
	It gives status/distinction	93	9,2	9,2	79,6
	For its rarity	32	3,2	3,2	82,8
	To resell them	69	6,9	6,9	89,7
	Do not buy skins	104	10,3	10,3	100,0
	Total	1006	100,0	100,0	

Output 9: Reason to buy skins

Statistics

	16. When purchasing a skin, how important are the looks (visual aspect) to you?	17. When purchasing a skin, how important is the rarity/uniqueness of the skin to you?	18. When purchasing a skin, how important is the price to you?	19. When purchasing a skin, how important is the type of weapon to you?	20. Finally, when purchasing a skin, how important is the condition (brand-new, used...) of the weapon and special aspects (such as stat-track) to you?
N Valid	1006	1006	1006	1006	1006
Missing	0	0	0	0	0
Mean	8,75	4,92	8,17	8,39	7,17
Mode	10	1	10	10	8
Std. Deviation	2,001	2,844	2,203	2,193	2,364

Output 10: Skin relevant characteristics

Skins fondness

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No fondness	150	14,9	14,9	14,9
	Mild fondness	221	22,0	22,0	36,9
	Great fondness	403	40,1	40,1	76,9
	Extreme fondness	232	23,1	23,1	100,0
	Total	1006	100,0	100,0	

Output 11: Skins fondness

Reason to be fond of a skin

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	For its looks	652	64,8	64,8	64,8
	For its background/story, was one of my first skins	170	16,9	16,9	81,7
	For its rarity	131	13,0	13,0	94,7
	Other	53	5,3	5,3	100,0
	Total	1006	100,0	100,0	

Output 12: Reason to be fond of a skin

Correlations

		Ranking of CSGO	frequency of purchase
Ranking of CSGO	Pearson Correlation	1	-,033
	Sig. (2-tailed)		,294
	N	1006	1006
frequency of purchase	Pearson Correlation	-,033	1
	Sig. (2-tailed)	,294	
	N	1006	1006

Output 13: Hypothesis 1 correlation test

Correlations			
		frequency of purchase	Enjoyment 5 likert scale
frequency of purchase	Pearson Correlation	1	,062*
	Sig. (2-tailed)		,050
	N	1006	1006
Enjoyment 5 likert scale	Pearson Correlation	,062*	1
	Sig. (2-tailed)	,050	
	N	1006	1006

*. Correlation is significant at the 0.05 level (2-tailed).

Output 14: Hypothesis 2 correlation test

Correlations			
		8. Are you fond of your virtual cosmetic items (skins) in general?	Hours_played
8. Are you fond of your virtual cosmetic items (skins) in general?	Pearson Correlation	1	,091**
	Sig. (2-tailed)		,004
	N	1006	1006
Hours_played	Pearson Correlation	,091**	1
	Sig. (2-tailed)	,004	
	N	1006	1006

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

Output 15: Hypothesis 3 correlation test

Correlations			
		8. Are you fond of your virtual cosmetic items (skins) in general?	frequency of purchase
8. Are you fond of your virtual cosmetic items (skins) in general?	Pearson Correlation	1	,325**
	Sig. (2-tailed)		,000
	N	1006	1006
frequency of purchase	Pearson Correlation	,325**	1
	Sig. (2-tailed)	,000	
	N	1006	1006

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

Output 16: Hypothesis 4 correlation test

Appendix II

Web based survey questionnaire

Cosmetic items (skins) purchase behaviour in CS :GO

This survey aims to collect data about the behaviour and player's opinions towards vanity items (skins) in Counter Strike: Global Offensive. This questionnaire is part of a university master's thesis. It is not related to Valve and has no commercial interest.

Thank you for your time!

Regards,

Bruno, Uppsala University master student

***Required**

1. 1. How long have you been playing Counter Strike:Global Offensive? *

Mark only one oval.

- ☐ Less than a month
- ☐ 1 to 6 months
- ☐ 6 months to 1 year
- ☐ 1 to 3 years
- ☐ More than 3 years

2. 2. Hours played per week *

Mark only one oval.

- ☐ 0-5h
- ☐ 5-10h
- ☐ 10-20h
- ☐ 20-40h
- ☐ 40h+

3. 3. What is your main reason to play CS:GO *

Mark only one oval.

- ☐ Enjoyment
- ☐ Competition (Match Making)
- ☐ Socializing

4. 4. Enjoyment while playing, 1 being no enjoyment at all and 10 being maximum enjoyment possible. *

Mark only one oval.

1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. How do you play CS:GO most of the time? *

Mark only one oval.

- ☐ With friends/ Team (not solo)
- ☐ Solo

6. What would you think about 'boosting' (pay to win) items being included in CS:GO? *

Mark only one oval.

- ☐ They would ruin the game
- ☐ I would not mind
- ☐ I would support their implementation
- ☐ Other: _____

7. Talking now about cosmetic virtual items, why do you buy 'skins'? *

Mark only one oval.

- ☐ For their looks (visual appeal)
- ☐ It gives status/distinction
- ☐ Someone famous (eSports player/ Youtuber/ Twitch streamer) has it
- ☐ For its rarity
- ☐ To resell it
- ☐ Other: _____

8. Are you fond of your virtual cosmetic items (skins) in general? *

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not fond at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely fond of them

9. What is the main reason to be fond of a 'skin'? (emotional value) * In

other words, why do you like your skins?

Mark only one oval.

- ☐ For its looks
- ☐ For its background/story, was one of my first skins
- ☐ For its rarity
- ☐ Other: _____

10. For you, how valuable (economically) are virtual cosmetic items (skins) in general? *

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
No economic value at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extreme economic value

11. For you, how important are 'skins' related to your in-game experience? *

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely important

12. Why are 'skins' important to you? *

Mark only one oval.

- ☐ To customize my character/stand out visually
- ☐ It gives me status/recognition
- ☐ Not important
- ☐ Other: _____

13. Talking about purchasing skins or keys, with what frequency do you buy them? *

Mark only one oval.

- ☐ Never
- ☐ Once
- ☐ Only during promotions
- ☐ Less than once a month
- ☐ Once a month
- ☐ Once a week
- ☐ Daily

14. How much have you spent in the last 12 months on skins? *

Mark only one oval.

- ☐ 0€
- ☐ Less than 10€
- ☐ 10-50€
- ☐ 50-150€
- ☐ 150€-500€
- ☐ 500€-1500€
- ☐ 1500€ +

15. What is the approximate value of your CS:GO inventory? *

Mark only one oval.

- ☐ 0€-10€
- ☐ 10-50€
- ☐ 50€-150€
- ☐ 150€-500€
- ☐ 500€-1500€
- ☐ 1500€-2500€
- ☐ 2500€-5000€
- ☐ 5000€ +

16. When purchasing a skin, how important are the looks (visual aspect) to you? *

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very important

17. When purchasing a skin, how important is the rarity/uniqueness of the skin to you? * Take into account the rarity/scarcity of the skin only -blue, dark blue, red, purple and so on... -, not the looks (aspect).

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very important

18. When purchasing a skin, how important is the price (good deal) to you? *

Do you take the pricing into account? How much? In the sense of a good deal (bargain) Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very important

19. When purchasing a skin, how important is the type of weapon to you? *

We understand type of weapon as what model is it: knife, awp, FAMAS, AK-47 and so on. Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very important

20. Finally, when purchasing a skin, how important is the condition (brand-new, used...) of the weapon and special aspects (such as stat-track) to you? *

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very important

21. How do you feel when owning skins you like? *

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Indifferent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely engaged

22. In general, in relation to their purchases and selling of cosmetic items, do you think players... *

Mark only one oval.

- ☐ Spend money in the long run
- ☐ Earn money in the long run
- ☐ Just about the same

23. In your opinion, what factor does affect pricing of skins the most? *

Mark only one oval.

- ☐ Scarcity/Uniqueness
- ☐ New items being released affect existing skins (prices drop)
- ☐ The CS:GO community influences pricing the most
- ☐ Valve influences it the most

24. What is the main reason for you to not buy cosmetic virtual items (skins)? *

Mark only one oval.

- ☐ Do not care about cosmetic items
- ☐ Prices are too high
- ☐ I try to obtain them for free (in competitive games and/or "cs:go skin websites")
- ☐ I prefer to buy non-virtual items instead
- ☐ Other: _____

25. Overall, - for you- virtual items are in comparison to non-virtual goods... *

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Less valuable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	More valuable

26. What is your rank in CS:GO? *

Mark only one oval.

- ☐ Silver I
- ☐ Silver II
- ☐ Silver III
- ☐ Silver IV
- ☐ Silver Elite
- ☐ Silver Elite Master
- ☐ Gold Nova I
- ☐ Gold Nova II
- ☐ Gold Nova III
- ☐ Gold Nova Master
- ☐ Master Guardian I
- ☐ Master Guardian II
- ☐ Master Guardian Elite
- ☐ Distinguished Master Guardian
- ☐ Legendary Eagle
- ☐ Legendary Eagle Master
- ☐ Supreme Master First Class
- ☐ The Global Elite
- ☐ No Rank

27. Your age *

28. Your gender *

Mark only one oval.

- ☐ Male
- ☐ Female

29. Current education level (if not applicable, please pick the equivalent in your country). *

Mark only one oval.

- ☐ Primary school level
- ☐ Secondary school level
- ☐ University degree or equivalent
- ☐ Master degree
- ☐ PhD
- ☐ Other:

30. Nationality *

31. Comments/ Feedback (optional)

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Appendix III: list of terms

Buy to Play (B2P): Video game that has to be bought in order to be played.

CS:GO: Counter Strike: Global Offensive an Online FPS video game studied in this thesis.

FPS: First Person Shooter, a genre where the player sees the game from the point of view of the controlled character.

Free to Play (F2P): Video game that is free to play, may have pay features.

Freemium: Term used to define a F2P game with premium content that can be purchased with real money.

MMO(G): Massive Multiplayer Online (Game).

Skin: Virtual commodity that changes an object appearance.