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Why Buy Virtual Helmets and Weapons? Introducing a Typology of Gamers

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Abstract

Nowadays, a huge number of individuals purchase virtual items in constantly growing service environments: online game communities. Some researchers have studied gamers' motivations to purchase virtual game items in general, but no one has separated different gamer types regarding their purchasing motivations. Understanding different gamer types is important because gamers may purchase the same virtual game items, such as helmets and weapons, for different individual reasons. Given the importance of the topic and the research gap, we introduce a typology of gamers regarding their motivations to purchase game items by conducting an empirical study on actual first-person shooter (FPS) gamers. As a theoretical contribution, our findings reveal three groups of game-item buyers (aesthetes, adventurers, and performers) and one group of non-buyers (critics). Our results indicate that, even in the context of performance-centric FPS games, hedonic motivations are dominant, particularly for the gamer groups that were most likely to purchase game items in the future. Interestingly, we could not find a group of gamers that emphasized merely functional aspects as purchasing motivations. In line with these findings, we present practical implications for game providers to manage and market their selection of game items in more suitable and efficient ways.

Keywords: Typology, Gamer, Game items, Purchasing behavior, Motivation

1 Introduction

Millions of people purchase virtual game items—such as helmets and weapons—in constantly growing service environments: online game communities. The trade of virtual goods did not exist some years ago, but already in 2012 the global virtual goods market was worth of 12 billion Euros (Superdata, 2012). The dramatic growth of the virtual in-game purchases has increased the need to study gamers' motivations for purchasing virtual items (Hamari and Lehdonvirta, 2010). Importantly, Wasko et al. (2011, 650) have pointed out the void of knowledge in understanding how to approach gamers and virtual world users to market virtual items because "*avatars are a new form of consumer capable of making purchases of both virtual and real world products and services.*"

A limited set of researchers have investigated gamers' and virtual world users' motivations to purchase virtual items (Guo and Barnes, 2011; Ho and Wu, 2012; Kim et al., 2011; Kim et al., 2012; Lehdonvirta, 2005, 2009; Lehdonvirta et al., 2009; Mäntymäki and Salo, 2011, 2013; Park and Lee 2011; Shang et al., 2012). These prior studies have provided valuable insights about the motivational factors affecting purchase intentions in general, but they have not examined the different gamer types at all. Studying different gamer types in these emerging service environments is essential, as different gamers may purchase exactly the *same* items for *different* motivations. For example, one gamer could buy a virtual helmet for his/her character to look cool while another gamer's motivation may be grounded in the helmet's protection ability against enemies. By understanding these differences, game providers can manage their selection of virtual items to fit the gamers' needs as well as market virtual items to gamers in more suitable and efficient ways.

According to our best knowledge, there are no existing typologies of gamers regarding their motivations to purchase virtual game items. To address this gap in research, we developed a typology of gamers by empirically investigating actual gamers' motivations to purchase game items in first-person shooter (FPS) games. We specifically wanted to focus on FPS games because they comprise one of the most popular game genres with a tremendous amount of ongoing trade of virtual in-game purchases. Our research question was thus: What kind of gamer types can be found regarding gamers' motivations to purchase virtual game items?

As a theoretical contribution, our typology revealed four gamer types, with each having specific reasons for purchasing (or not purchasing) virtual game items. This new knowledge assists researchers to take a look beyond the rather generic motivation models and specify which motivational factors are relevant for which gamers. As for practical contributions, providers of online gaming communities and other similar virtual service environments can use our results to manage their virtual item offerings, as well as to market and communicate about their offerings efficiently to gamers and users.

2 Literature Review and Conceptual Model

2.1 Virtual Game Items in FPS Games

Virtual game item sales constitute a significant revenue share for numerous computer game providers. Recently, many computer games have transferred to the free-to-play model, according to which the game itself may appear to be free but the incomes derive from premium purchases such as virtual game items. The term *virtual game item* refers to items that can be bought to empower, personalize, and enrich one's game character or affect virtual identity and

status in the gaming community. FPS games—action games where the gamer combats enemies through a first-person perspective—are one of the most popular game genres for computers, with regularly charting titles such as Counter Strike, Team Fortress, Call of Duty, and Battlefield game series. Typical virtual items in FPS games include various types of weapons (e.g., guns and grenades), armors and costumes (e.g., helmets and boots), and vehicles (e.g., cars and aircrafts). Most use purposes of FPS game items relate to functional performance and advancement in the game or hedonic enjoyment and customization. Virtual game items can typically be bought from the game producers for a few Euros, but the prices of FPS items may vary from some cents to hundreds of Euros.

2.2 Previous Typologies of General Game Behavior

Although there are no typologies regarding gamers' motivations to purchase virtual game items, some researchers have categorized gamers according to their actions and behaviors. Bartle (1996) has presented a rather widely known typology for gamers, according to which gamers can be divided into achievers, explorers, socializers, and killers. It is important to note that that these types may intertwine with each other (Yee, 2006). For example, in the FPS games, some gamers are called sociable killers, since they mix individual performance with competition against other gamers and social interaction.

Hamari and Tuunanen (2014) have presented a useful synthesis of the previous gamer typologies. According to them, the central concepts regarding in-game behavior include achievement, exploration, immersion, sociability, and domination. Achievement relates with individual-oriented gamers and focuses mainly on in-game goals, performance, and power, while exploration and immersion highlight curiosity, story, fantasy, and even escapism. Sociability reflects community-oriented gamers who appreciate social interaction and collaboration. Dominators, in turn, are considered as aggressive gamers who emphasize power. Additionally, they note that gaming intensity, skills, and demographics can be used to differentiate gamers from each other.

The previous studies have provided interesting insights about gamers' general behavior, but they do not touch upon gamers' purchase behavior at all. Therefore, we review previous studies related to individuals' motivations to purchase virtual items as follows.

2.3 Review of Studies on Motivations to Purchase Virtual Items

We reviewed studies that have examined gamers' or virtual world users' motivations to purchase virtual items. We also chose to include the context of virtual worlds, since they include many similar elements with games and researchers have applied similar theories in explaining purchase motivations in both game and virtual world contexts. Contrary to games, there usually are no clear goals in virtual worlds (Mäntymäki and Salo, 2011; Reeves et al., 2008). We located four studies that included the game context and an additional seven studies that focused purely on the virtual world context in their inspection of individuals' purchase motivations. The reviewed studies are summarized in Table 1.

Many of the studies specify three major motivations behind gamers' or users' purchase motivations: functional, hedonic (or enjoyment or emotional), and social aspects. Functional aspects refer to the extrinsic and instrumental value of virtual items in improving performance or achieving certain game-specific goals. For example, armor can enhance a game character's protection against enemies and, thus, improve the character's chances to complete certain in-game tasks. Previously introduced specific game-related functional attributes include quality

(Ho and Wu, 2012), price (Park and Lee, 2011), performance advantage (Lehdonvirta, 2005, 2009), and character competency (Ho and Wu, 2012; Park and Lee, 2011). Quality refers to the gamer's appreciation of the excellence of a game item (Ho and Wu, 2012), while price value includes the comparison of the item's cost-effectiveness and its benefits against the monetary sacrifices (Park and Lee, 2011). Performance advantage is valued because of the item's contribution to better practical performance in, for example, achieving levels and game points (Lehdonvirta, 2009). Character competency is actually a broader concept including not only practical performance advantage but also the game character's relative power and authority in the game (Ho and Wu, 2012; Park and Lee, 2011). Therefore, we divided character competency into two dimensions: performance advantage and power advantage.

Hedonic aspects involve the intrinsic value of virtual items in generating enjoyment and entertainment. For example, a fancy outfit may promote visual appeal or humor. Based on prior studies in the game context, hedonic attributes include visual appeal or visual aesthetics (Ho and Wu, 2012; Lehdonvirta, 2009), sound effects (Lehdonvirta, 2009), playfulness (Ho and Wu, 2012), story, cultural references, and rarity (Lehdonvirta, 2009). Visual appeal covers the enjoyment of the virtual items' appearance, while audio appeal means similar pleasure is derived from sounds (Lehdonvirta, 2009). Playfulness, in turn, stimulates curiosity and absorption with the game (Ho and Wu, 2012). Story reflects the background fiction or narrative that may create hedonic enjoyment, and cultural references mirror the joy brought about by the real-world or fictive cultural nuances (Lehdonvirta, 2009).

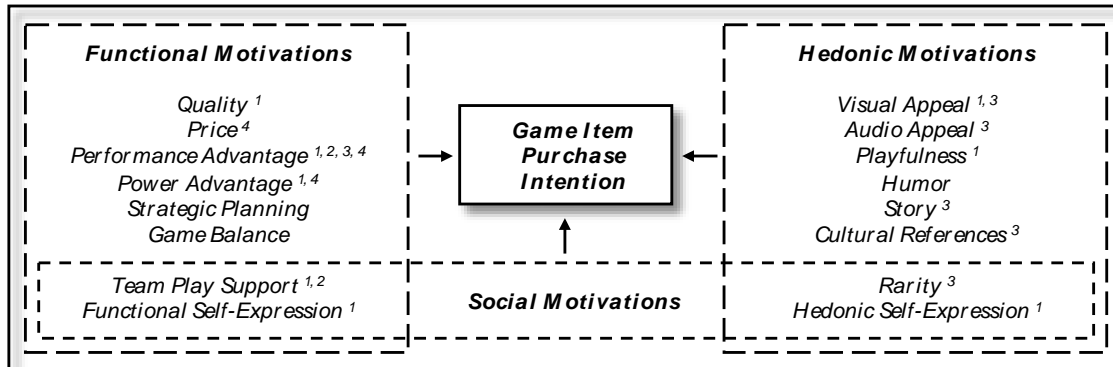| Study	Game context	Virtual world context	Main results
Ho and Wu (2012)	Online role-playing games and war-strategy games	-	Purchase intentions are driven by 1) functional quality, playfulness, and social relationship support in online role-playing games, and 2) identification with the character, satisfaction with the game, price utility, and playfulness in online war-strategy games.
Lehdonvirta (2005)	EverQuest, Ultima Online, Project Entropia	Habbo Hotel	User perceptions on real-money trade can involve three dimensions: achievement, social, and immersion.
Lehdonvirta (2009)	Several online games	Several virtual worlds	Purchase drivers include three attributes: functional (performance, functionality), hedonic (visual appearance and sounds, story, provenance, customizability, culture, branding), and social (rarity).
Park and Lee (2011)	Free-to-play online games	-	Character competency, enjoyment, visual authority, monetary value, and character identification affect purchase intentions, while satisfaction with the game does not.
Guo and Barnes (2011)	-	Second Life	Functional motivators (effort, performance, value), hedonic motivators (enjoyment, advancement, customization), and habit affect purchase behavior.
Kim et al. (2011)	-	Cyworld	Aesthetics, playfulness, and social self-image expression influence purchase intentions.

Kim et al. (2012)	-	Cyworld, Habbo Hotel	Desire for online self-presentation (including self-efficacy, involvement, and norms) and gender affect purchase intentions.
Lehdonvirta et al. (2009)	-	Habbo Hotel	Virtual items and physical items can share the same social meanings when it comes to 1) aesthetics, self-expression, and identity, 2) luxury and social status, and 3) items as vehicles of arbitrary meaning.
Mäntymäki and Salo (2011)	-	Habbo Hotel	Purchase intentions are driven by the presence of other relevant users and use continuance intentions.
Mäntymäki and Salo (2011)	-	Habbo Hotel	Purchase intentions are driven by network size, enjoyment, usefulness, availability, and ease of use.
Shang et al. (2012)	-	iPart	Social and emotional motivations affect non-anonymous users' purchase intentions, but only emotional motivations affect anonymous users' intentions.

Table 1: Studies on gamers' and virtual world users' motivations to purchase virtual items

Social aspects involve the value of virtual items that reflects the gamer's social structures with other individuals and within the community (or communities). For example, the possession of a rare treasure item may increase status and respect within the gamer community. Even though at times viewed as a separate aspect from functional and hedonic motivations, it has been argued that social aspects belong to either functional or hedonic motivations (Holbrook, 1996). Therefore, we have placed them under the two main motivations. Prior studies have presented three game-related social attributes: social self-expression (Ho and Wu, 2012; Park and Lee, 2011), social relationship support (Ho and Wu, 2012; Lehdonvirta, 2005), and rarity (Lehdonvirta, 2009). The value of social self-expression may be derived from pure enjoyment (e.g., artistic contributions) or the aim of making a certain impression on others (e.g., status). As these are clearly distinguishable from each other, we have decided to apply both functional and hedonic self-expression (cf. Holbrook, 1996). Some virtual items support social relationships by enhancing communications and maintaining relations (Ho and Wu, 2012). In this study, we have conceptualized these aspects as team play support because the most essential dimension of social relationships in FPS games relates to teamwork and collaboration. Rarity reflects also (partially) social structures, as possessing items that are rare within the game community can produce hedonic value (Lehdonvirta, 2009).

2.4 Conceptual Model

The conceptual model of this study is summarized in Figure 1. We chose to form our model based on the previous studies that focused on gamers' purchase motivations (Ho and Wu, 2012; Lehdonvirta, 2005, 2009; Park and Lee, 2011) because they are the closest ones to the context of this study. Therefore, we aimed to integrate all relevant concepts from those four studies into our research model. We believe that our approach provides the most useful conceptual frame for studying gamers' motivations to purchase game items for two main reasons. First, our conceptual model includes the central motivational aspects: functional, hedonic, and social (Guo and Barnes, 2011; Ho and Wu, 2012; Kim et al., 2011; Lehdonvirta, 2009). Second, our approach affords a multidimensional frame, which implies an interaction between individual

Functional Motivations		**Hedonic Motivations**

Quality [1]
Price [4]
Performance Advantage [1, 2, 3, 4]
Power Advantage [1, 4]
Strategic Planning
Game Balance

Game Item Purchase Intention

Visual Appeal [1, 3]
Audio Appeal [3]
Playfulness [1]
Humor
Story [3]
Cultural References [3]

Team Play Support [1, 2]
Functional Self-Expression [1]

Social Motivations

Rarity [3]
Hedonic Self-Expression [1]

1: Ho and Wu (2012) 2: Lehdonvirta (2005) 3: Lehdonvirta (2009) 4: Park and Lee (2011)

In our conceptual model, the functional motivations are expressed with functional attributes: quality, price, performance advantage, power advantage, team play support, and functional self-expression. The hedonic motivations depend on hedonic attributes: visual appeal, audio appeal, playfulness, story, cultural references, rarity, and hedonic self-expression. All of these attributes are based on prior studies (as described in Section 2.3). Additionally, we decided to add three attributes that we thought were particularly relevant for FPS game items—strategic planning (functional), game balance (functional), and humor (hedonic)—as some game items are designed to facilitate strategic planning or to balance gamers' different skill levels, and FPS gamers buy game items sometimes just for the sake of humor.

There are, of course, some attributes that we chose to either combine with other ones or exclude from our study. For example, we combined customizability (suggested by Lehdonvirta, 2009) with visual appeal, since both of these aspects have been conceptualized similarly in previous studies (as a comparison of Guo and Barnes (2011) and Park and Lee (2011) shows). Additionally, we decided not to include the concept of character identification because it is specific to role-playing games but not so essential for FPS games.

3 Method

To examine gamers' perceptions of their own motivations to purchase virtual game items, we applied a quantitative approach utilizing an online questionnaire and cluster analysis. The rationale for choosing the quantitative approach and the questionnaire was its suitability for studying individual persons' perceptions, beliefs, and attitudes (Jenkins, 1985; Straub et al., 2004).

3.1 Data Collection

We collected the data using an online questionnaire. An introductory text to the questionnaire described with illustrative examples what we meant by the terms *FPS games* and *virtual items* in FPS games. The main questionnaire items, as statements, were written to represent the conceptual model of this study; they were adapted and modified mainly from the studies by Ho and Wu (2012), Kim et al. (2011), Lehdonvirta (2009), and Park and Lee (2011). We requested

the respondents to express their agreement or disagreement on an ordinal five-point Likert scale (from 1 = strongly disagree to 5 = strongly agree) with statements describing different motivations to purchase virtual FPS game items. These 23 statements are presented in Appendix 1. Additionally, the questionnaire included 12 questions about individual gamers' backgrounds, such as gender, age, primary status, time spent on FPS games, money spent on virtual FPS game items, other reasons for purchases, and future purchase intentions of virtual FPS game items.

The data was collected in October 2013. A link to the questionnaire was posted in Valve's Team Fortress 2 forums, Sony's PlanetSide 2 forums, and Facebook (for public sharing). Users could respond to the questionnaire anonymously. In total, 98 gamers completed the questionnaire. Before the actual collection, we conducted a small pilot focus group session with three active Team Fortress 2 gamers. This focus group answered and reviewed the questionnaire items by thinking aloud their perceptions and opinions. The pilot session aimed to modify and verify the suitability of the proposed questionnaire items as well as to examine gamers' willingness to answer. The pilot group provided only a few suggestions for covering the most prominent motivations for purchasing game items: Based on the feedback, one item was deleted and two items focusing on team play support and strategic planning were added. Generally, the pilot respondents were able to complete the questionnaire rather easily.

3.2 Data Analysis

The data was analyzed using the SPSS software. To evaluate how well the questionnaire items measured functional and hedonic motivations, we calculated Cronbach's alphas. As the values for both functional and hedonic motivations exceeded 0.8, the reliability of the item measurements could be considered satisfactory (Nunnally and Bernstein, 1994).

To identify distinct gamer groups, the responses were submitted to a cluster analysis. Cluster analysis is used to identify homogeneous groups, when the number of groups or group membership for the cases is unknown. One of the typical ideas of clustering is to minimize within-group variation and maximize between-group variation (Vassilikopoulou et al., 2005). In a number of studies in different disciplines, such analysis has been found useful in developing typologies of individuals. One important use of clustering is to identify different groups of buyers' regarding their behavioral characteristics (Punj and Stewart, 1983).

In this study, clustering aimed to divide or segment gamers into relevant homogeneous groups based on the gamers' ratings on the statements regarding motivations to purchase virtual game items. We applied Ward's hierarchical method for cluster formation and Euclidean distance for distance measurement. The analysis resulted in four different clusters of gamers (cluster sizes: $C^1=32$; $C^2=35$; $C^3=25$; $C^4=4$). We chose to distinguish four clusters by considering previous studies and following the pattern of the clustering process. The resulting four clusters were then interpreted and prepared for reporting the results based on the between-group differences in the mathematical means of the measured items.

Finally, we compared the potential differences in gamer background (intention to purchase game items in the future, age, and primary status) among the different clusters. We estimated the prospective statistically significant differences between the distributions in different clusters by applying cross-tabulations with Pearson's chi-squares. Overall, the summary of our research process is illustrated in Table 2.

Stage			Description
Development	**of**	**the**	We developed the model based on previous studies that focused on

conceptual model	individuals' motivations to purchase virtual game items.
Formulation of the questionnaire items	The questionnaire items were adapted and modified mainly from previous studies (with a few additions related to the FPS game context).
Pilot: Focus group	We piloted the questionnaire with a small focus group to fine-tune the wordings, ensure the coverage of the motivational attributes, and find out gamers' willingness to participate.
Online questionnaire	The questionnaire link was submitted to different forums relevant for FPS gamers.
Cluster analysis	We applied cluster analysis to identify different gamer groups regarding their motivations to purchase virtual game items.
Cross-tabulations	We used cross-tabulations to examine whether there were statistically significant differences among the gamer groups related to the gamers' intention to purchase, age, and/or primary status.

Table 2: Summary of the research process: The main stages and their descriptions

3.3 Respondents

The background information of the respondents is summarized in Table 3. On average, the respondents estimated that they had spent 57 Euros for virtual goods in FPS games within the last six months. As expected, the reported amounts varied a lot: from 0 Euros to 600 Euros. In our sample, the majority of the respondents were male (96.9%), students (67.7%), and 30 years old or under (75.5%). These distributions can be considered to reflect FPS gamers because online games related to weapons and war typically attract young males. Similarly, many previous studies on online games have had male-centric samples, and it has been stated that the majority of heavy gamers are young men (Kirriemur and McFarlane, 2004, according to Park and Lee, 2011).

The participants named fifteen different FPS games as their favorite and ten different games as the FPS games they based their responses on. For the latter, the most frequently mentioned games were Team Fortress 2 (53) and Planet Side 2 (22). Altogether, the gamers who opened the questionnaire web link were from 22 countries: mostly from Finland and the United States, but also from Canada, Sweden, Estonia, Denmark, Germany, and Brazil.

Gender	*Male*	95 *(96.9 %)*
	Female	3 *(3.1 %)*
Age	*Under 20*	34 *(34.7 %)*
	20–30	40 *(40.8 %)*
	Over 30	20 *(20.4 %)*
	N/A	4 *(4.1 %)*
Primary status	*Work*	40 *(41.7 %)*
	Student	65 *(67.7 %)*
	Unemployed	7 *(7.1 %)*
Average time used for playing games per week		22.6 hours
Average time used for playing FPS games per week		13.5 hours
Average money spent for virtual game items within 6 months		65 € *(ranging from 0-600 €)*
Average money spent for virtual FPS game items in past 6 months		57 € *(ranging from 0–600 €)*

Table 3: Background information of the respondents

4 Results

Based on the cluster analysis, we identified four distinct clusters as gamer groups: three groups of buyers and one group of non-buyers. The average means of the gamer groups for each questionnaire item are illustrated in Figure 2. The four groups are first labeled and described and then compared regarding the gamer groups' background information.

4.1 Group I: Aesthetes

Group I involved gamers who strongly valued specific hedonic motivations: visual appeal, humor, and hedonic self-expression. In particular, the respondents wanted to purchase items that made their game character look better. As a contrast, the respondents rated most functional motivations very low (expect for item quality, which was rated rather highly among all buyer groups). For example, they did not value game items for their prospective effects in performance advantage, power advantage, strategic planning, or team play support at all. Consistent with these findings, we labeled this group of gamers as *aesthetes*. The group accounted for 32 respondents who were mainly students (69%), a lot of them less than 20 years of age (50%).

4.2 Group II: Adventurers

Group II had some similar characteristics with the first group: this group contained gamers who valued visual and audio appeal, playfulness, humor, and hedonic self-expression. However, as the main difference compared to the first group, they reported an average agreement with many functional motivation attributes. Overall, this group highlighted hedonic motivations but did not downplay the functional motivations. Therefore, this group was named *adventurers*. The group included 35 respondents who were mainly students (80%), a lot of them less than 20 years of age (46%).

4.3 Group III: Performers

Group III contained gamers who especially valued those motivational attributes that were related to performance and power advantage. These gamers reported only an average agreement with several hedonic motivation statements but, interestingly, there were no particularly low ratings for any motivational aspect. Compared to adventurers, this group valued more functional and less hedonic motivations. According to these findings, we labeled this group as *performers*. This group accounted for 25 respondents. The majority (60%) of these respondents were young adults between 20 and 30 years of age. Among them there were almost equal numbers of students (52%) and those in working life (48%).

4.4 Group IV: Critics

Group IV included very different gamers containing only four respondents. These gamers were non-buyers and strongly disagreed with all reasons for game item purchases. The average ratings for all motivational statements were extreme low (equal to or less than 2). None of these respondents planned to purchase virtual items within the next six months. According to these insights, we labeled this group as *critics*. Two of the critics were over 30, while two were less than 30 years of age. Both students and workers were included.
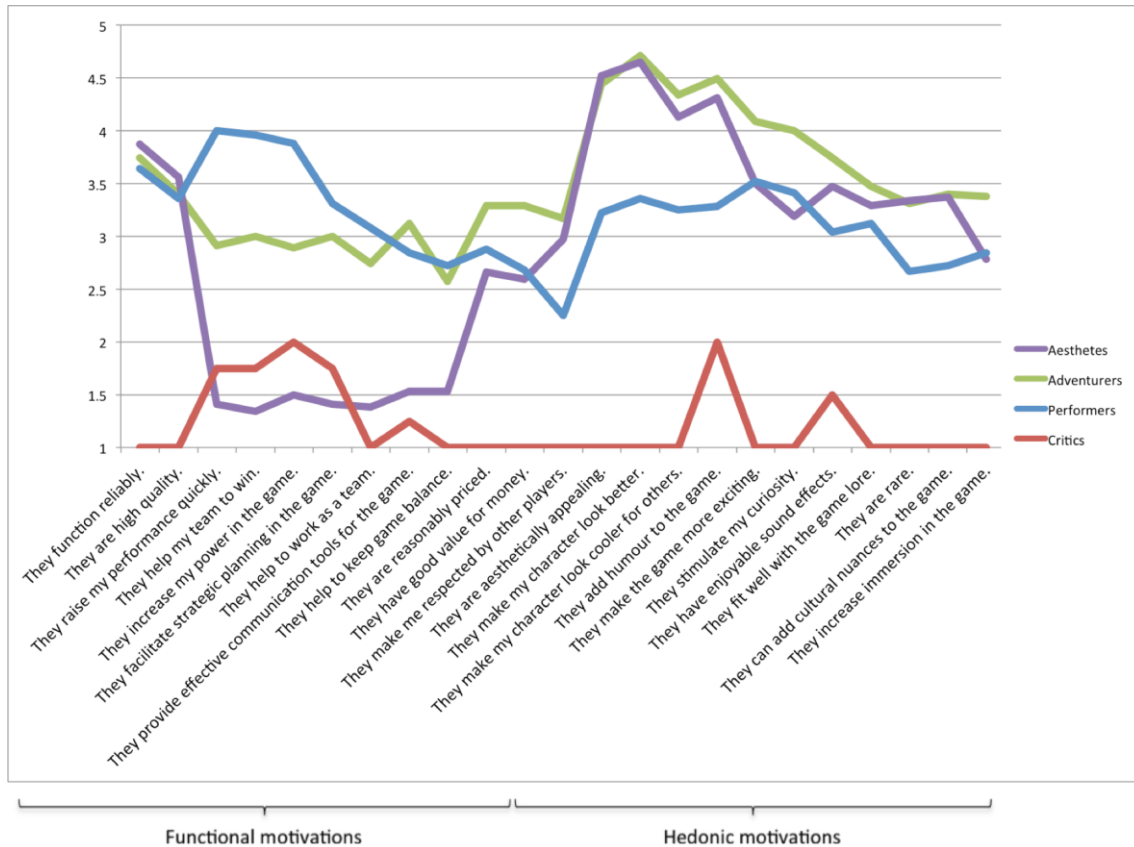
Figure 2: Comparison of the gamer groups

4.5 Background Information of the Groups

There are two statistically significant differences in the background variables related to the groups. First, the intention to purchase game items within the next six months significantly differed among the gamer groups according to our chi-square tests. As presented in Table 4, the majority of the aesthetes (67.7%) and adventurers (68.6%) reported that they were likely to purchase game items in the near future. As for the two other groups, a smaller share of the performers (40%) and none of the critics (0%) intended to buy game items within the next six months.

Group	Purchase intention in the next 6 months:	Not likely	Likely	Total
I Aesthetes % within group		32.3 %	67.7 %	100.0 %
II Adventurers % within group		31.4 %	68.6 %	100.0 %
III Performers % within group		60.0 %	40.0 %	100.0 %
IV Critics % within group		100.0 %	0.0 %	100.0 %

Table 4: Cross-tabulation: Purchase intention in the next 6 months and gamer groups

Second, the cross-tabulation (Table 5) and chi-square tests indicated that age groups differed significantly between the gamer groups: gamers under 20 years of age formed the largest group of aesthetes and adventurers, whereas the majority of performers and critics were older than 20

years. We also investigated the differences of the respondents' primary status (student, unemployed or employed), but found no statistically significant differences.

| Group	Under 20	20-30	Over 30	Total
I Aesthetes % within group	50.0 %	40.6 %	9.4 %	100.0 %
II Adventurers % within group	45.5 %	33.3 %	21.2 %	100.0 %
III Performers % within group	8.0 %	60.0 %	32.0 %	100.0 %
IV Critics % within group	25.0 %	25.0 %	50.0 %	100.0 %

Table 5: Cross-tabulation: Age and gamer groups

5 Discussion

This article contributes to existing knowledge by presenting a new typology of gamers according to their motivations to purchase virtual game items. Previous studies have reported empirical investigations about the main motivations for virtual item purchases among gamers in general, but they have not taken a stand on the prospective individual differences of purchase motivations. Therefore, our typology assists researchers to understand different gamer groups and providers of games and similar virtual service environments to communicate and market virtual items in more suitable ways.

5.1 Theoretical Contribution: A Typology of Gamers

In the empirical part of our study, we found three distinct groups of game-item buyers and one group of non-buyers. Based on these findings, we developed a typology of gamers that is illustrated in Figure 3. Even though the extant gamer typologies do not examine any purchase motivations, we used them to compare and contrast our typology as follows.
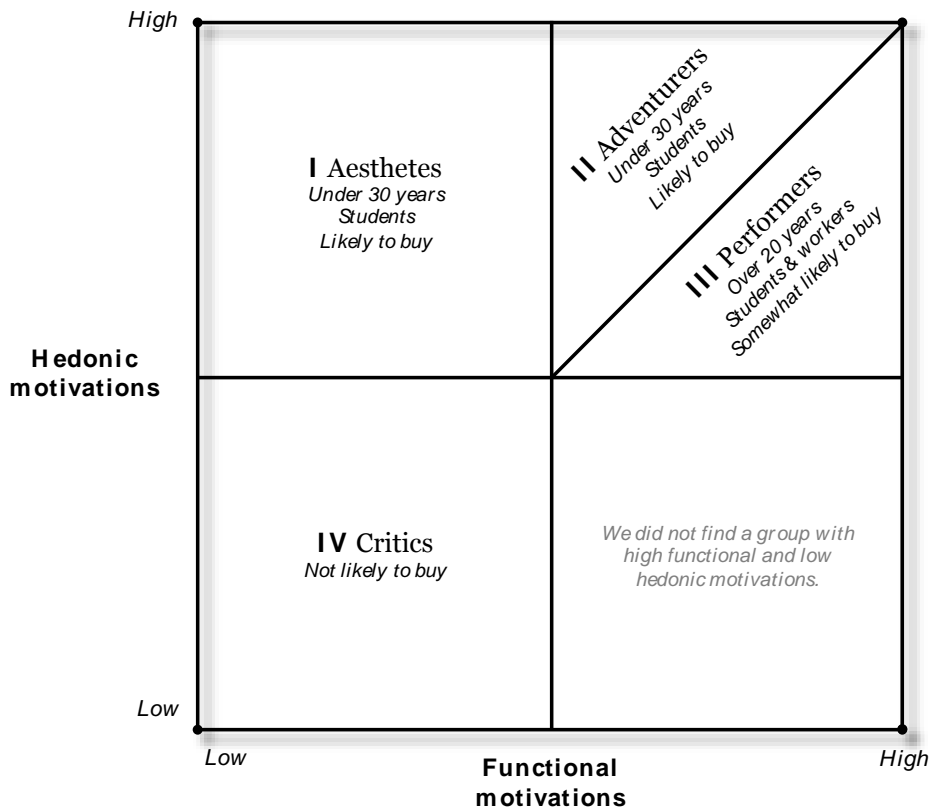
Figure 3: Our typology of gamers regarding their purchase motivations

Interestingly, we could not find a group of game-item buyers that would emphasize merely functional motivations and, simultaneously, downplay hedonic motivations (positioned in the lower right-hand corner of Figure 3). Our findings depart from prior knowledge, since the extant gamer typologies have identified high functionality-oriented gamer groups labeled as dominators or killers (Bartle, 1996; Hamari and Tuunanen, 2014). We expected such a group to exist also regarding gamers' purchase behavior, especially in the context of fast-paced and performance-centric FPS games.

Additionally, in contrast to the previous typologies, we did not find strong social motivations for game item purchases. Even though some gamers are socializers and their general gaming behavior is motivated by socializing (Bartle, 1996; Hamari and Tuunanen, 2014; Yee, 2006), it seems that such a motivation does not currently reach purchasing behavior, at least in FPS games. We consider this finding somewhat paradoxical because some FPS games accentuate social aspects and provide gamers with various game items as social tools to facilitate communication and teamwork.

The first group of our typology, aesthetes, is positively oriented toward game item purchases. As these gamers highlighted hedonic aspects and disregarded functional aspects, they shared some similarities with gamers who play games to reach immersion by, for example, escapism or getting absorbed in the game (Bartle, 1996; Hamari and Tuunanen, 2014). Thus, our findings extend this prior knowledge about highly hedonic-centric gamers to the context of in-game purchases.

The second group of gamers, adventurers, appreciated various hedonic attributes in game items, but also saw some potential motivational boosts from functional attributes. Adventurers also reported a high likelihood of purchasing game items in the future. This group could be

interpreted to reflect exploration, which on the one hand concentrates on appeal, curiosity, and playing around, but on the other hand may involve some interests related to rationality and problem-solving (Hamari and Tuunanen, 2014).

The third group, performers, was motivated by functional aspects, especially performance and power, with a lesser focus on hedonic aspects. Performers resemble achievement-centric gamers (Bartle, 1996; Hamari and Tuunanen, 2014; Yee, 2006), who focus specifically on in-game goals and advancement in the game. On average, they reported to be only somewhat likely to purchase game items in the near future. When they do, it seems that they purchase game items mainly to perform better, but they also appreciate the additional playfulness and visual enjoyment that the items might bring. Even though these motivations are partly in line with the group referred to as dominators or killers (Bartle, 1996; Hamari and Tuunanen, 2014), such a group would probably use game items just as tools to do damage to others (i.e., for purely functional motivations).

Finally, our typology presented an important, yet previously unmentioned gamer group: critics. This gamer group is radically different from the others: even though critics might enjoy playing the actual game, they basically disagreed with any motivations to purchase virtual game items. It seems that they would not even like to have the option to purchase game items. There may be a variety of specific reasons behind such critical behavior; some gamers oppose game item purchases because they consider it to be harmful in preserving the games' *"magic circle"* (Castronova, 2004, 192) or perceive it as cheating (Lehdonvirta, 2005).

5.2   Practical Implications

There are at least four implications for the providers of games and similar virtual service environments. First, game providers could take advantage of the resulting typology by customizing their game item offerings according to the gamer types. Currently, many game providers already sell game items for different purposes (e.g., for performance boost or aesthetic appeal), but providers could take even further steps to offer gamers what they really wish to purchase.

Second, many game providers and designers seem to assume that players are likely to spend money on virtual items that raise their performance quickly and increase their power in the game (Fields and Cotton, 2012; Lehdonvirta, 2009; Oh and Ryu, 2007). However, we could not find support for these assumptions. In contrast, we found that hedonic aspects motivated the gamers that were most likely to purchase game items. Therefore, we suggest game providers carefully revisit their potential assumptions on functional motivations.

Third, our findings indicate that hedonic motivations are highly essential for game item purchases—especially visual appeal, humor, playfulness, and hedonic self-expression. Previously, aesthetic items have been assumed to be essential mostly in rather visually-oriented virtual worlds such as Habbo Hotel, where users can buy decorative furniture or cute pets (Lehdonvirta, 2009; Kim et al., 2011). Naturally, one would expect that individuals' perceptions of visual appeal regarding cheerful virtual worlds are different from those regarding quite harsh game environments, such as FPS games. However, our findings contradicted this assumption and, thus, may help FPS game providers to promote certain hedonic aspects suitable for FPS games.

Fourth, there is a group of gamers who quite radically critique the current system of game item sales. Even though this group seems to be extremely difficult to convert into game-item buyers,

at least game providers and designers could acknowledge these gamers and try to reduce the amount of their negative associations regarding purchasing game items.

5.3 Limitations and Future Topics

There are certain limitations regarding this study. First, our sample size could have been larger. However, our sample was sufficient enough for our research task to identify different gamer groups. Second, our sample consisted mainly of young males. Even though young men are currently the dominant user group for FPS games, it would be important to study other demographic groups that prospectively play FPS and other games in the future. Third, we focused merely on the context of FPS games. Our focus on a certain game genre could have affected our results—for example, the fast-paced nature of FPS games could emphasize some motivations more than others.

In the future, we encourage researchers to examine whether our findings are applicable to other virtual service environments than just games. For example, it would be interesting to compare our typology of gamers against similar typologies of virtual world item buyers. Also, as this study focused on computer games, it would be tempting to examine whether the device makes any difference to gamers' purchase motivations. Thus, future studies could focus on gamers' motivations to conduct mobile in-app and in-game purchases. Finally, it would be worthwhile to dive deep into the perceptions and motivations of the group labeled critics. Researchers could explore the reasoning behind critics' negative attitudes toward in-game purchases with qualitative methods such as laddering interviews.

References

Bartle, R. (1996). Hearts, Clubs, Diamonds, Spades: Players Who Suit Muds. Journal of Virtual Environments 1 (1).

Castronova, E. (2004). The Right to Play. New York Law School Law Review 49 (1), 185-210.

Guo, Y. & Barnes, S. (2011). Purchase behavior in virtual worlds: An empirical investigation in Second Life. Information & Management 48 (7), 303-312.

Fields, T. & Cotton, B. (2012.) Virtual Goods - An Excerpt from Social Game Design: Monetization Methods and Mechanics. URL: http://www.gamasutra.com/view/feature/135067/

Hamari, J. & Lehdonvirta, V. (2010). Game Design as Marketing: How Game Mechanics Create Demand for Virtual Goods. Journal of Business Science and Applied Management 5 (1), 14-19.

Hamari, J. & Tuunanen, J. (2014). Player Types: A Meta-synthesis. Transactions of the Digital Games Research Association 1 (2), 29-53.

Ho, C-H. & Wu, T-Y. (2012). Factors Affecting Intent to Purchase Virtual Goods in Online Games. International Journal of Electronic Business Management 10 (3), 204-212.

Holbrook, M. B. (1996). Customer Value – A framework for Analysis and Research. Advances in Consumer Research 23 (1), 138-142.

Jenkins, A. M. (1985). Research Methodologies and MIS Research. In: Research Methods in Information Systems, Ed. by E. Mumford et al., Holland: Elsevier Science Publishers B.V., 103-117.

Kim, H-W., Chan, H. C. & Kankanhalli, A. (2012). What Motivates People to Purchase Digital Items on Virtual Community Websites? The Desire for Online Self-Presentation. Information Systems Research, articles in advance, 1-14.

Kim, H-W., Gupta, S. & Koh, J. (2011). Investigating the Intention to Purchase Digital Items in Social Networking Communities: A Customer Value Perspective. Information & Management 48 (6), 228-234.

Lehdonvirta, V. (2005). Real-Money Trade of Virtual Assets: Ten Different User Perceptions. In: Proceedings of Digital Arts and Culture (DAC 2005). 52-58.

Lehdonvirta, V. (2009). Virtual Item Sales as a Revenue Model: Identifying Attributes that Drive Purchase Decisions. Electronic Commerce Research 9 (1-2), 97-113.

Lehdonvirta, V., Wilska, T-A. & Johnson, M. (2009). Virtual Consumerism: Case Habbo Hotel. Information, Communication & Society 12 (7), 1059-1079.

Mäntymäki, M. & Salo, J. (2011). Teenagers in Social Virtual Worlds: Continuous Use and Purchasing Behavior in Habbo Hotel. Computers in Human Behavior 27 (6), 2088-2097.

Mäntymäki, M. & Salo, J. (2013). Purchasing Behavior in Social Virtual Worlds: An Examination of Habbo Hotel. International Journal of Information Management 33 (2), 282-290.

Nunnaly, J. C. & Bernstein, I. H. (1994). Psychometric Theory. New York: McGraw-Hill.

Oh, G. & Ruy, T. (2007). Game Design on Item-selling Based Payment Model in Korean Online Games. In: Proceedings of Digital Games Research Association Conference (DiGRA), 650-657.

Park, B-W. & Lee, K. C. (2011). Exploring the Value of Purchasing Online Game Items. Computers in Human Behavior 27 (6), 2178-2185.

Punj, G. & Stewart, D. W. (1983). Cluster Analysis in Marketing Research: Review and Suggestions for Application. Journal of Marketing Research 20 (2), 134-148.

Reeves, B., Malone, T. W. & O'Driscoll, T. (2008). Leadership's Online Labs. Harvard Business Review 86 (5), 58-66.

Shang, R-A., Chen, Y-C. & Huang, S-C. (2012). A Private Versus a Public Space: Anonymity and Buying Decorative Symbolic Goods for Avatars in a Virtual World. Computers in Human Behavior 28 (6), 2227-2235.

Straub, D., Gefen, D. & Boudreau, M-C. (2004). The IS World Quantitative, Positivist Research Methods Website. Ed. by D. Galletta. URL: http://dstraub.cis.gsu.edu/quant/ (visited on 26th Nov 2014)

Superdata (2012). Worldwide virtual goods market reaches $15 billion. Monetization still a four letter word. URL: http://www.superdataresearch.com/blog/monetization-is-a-four-letter-word/ (visited on 12th Nov 2014)

Vassilikopoulou, A. I., Siomkos, G. J. & Mylonakis, J. (2005). Clustering Consumers According to Their Attitudes on Corporate Social Responsibility. International Journal of Business Governance and Ethics, 1 (4), 317-328.

Wasko, M., Teigland, R., Leidner, D. E. & Jarvenpaa, S. (2011). Stepping into the Internet: New Ventures in Virtual Worlds. MIS Quarterly 35 (3), 645-652.

Yee, N. (2006). Motivations of Play in Online Games. Cyber Psychology & Behavior 9 (6), 772-775.

Appendix 1: Questionnaire

Main Motivation	Attribute	Questionnaire Item
Question: Do you agree or disagree with the following reasons for buying virtual goods in FPS games? (Five-point Likert scale, from 1 = strongly disagree to 5 = strongly agree.)		
Functional	*Quality*	They function reliably. They are high quality.
	Price	They are reasonably priced. They have good value for the money.
	Performance	They raise my performance quickly. They help my team to win.
	Character competency	They increase my power in the game.
	Strategic planning	They facilitate strategic planning in the game.
	Game balance	They help to keep game balance.
(Social)	*Team play support*	They help to work as a team. They provide effective communication tools for the game.
(Social)	*Functional self-expression*	They make me respected by other players.
Hedonic	*Visual appeal*	They are aesthetically appealing. They make my character look better.
	Sound effects	They have enjoyable sound effects.
	Playfulness	They make the game more exciting. They stimulate my curiosity. They increase immersion in the game.
	Humor	They add humor to the game.
	Story	They fit well with the game lore.
	Cultural reference	They can add cultural nuances to the game.
(Social)	*Rarity*	They are rare.
(Social)	*Hedonic self-expression*	They make my character look cooler for others.

Table 6: Online questionnaire statements