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Why do players buy in-game content? An empirical study on concrete purchase motivations



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ABSTRACT

Selling in-game content has become a popular revenue model for game publishers. While prior research has investigated latent motivations as determinants of in-game content purchases, the prior literature has not focused on more concrete reasons to purchase in-game content that stem from how the games are being designed. We form an inventory of reasons (19) to buy in-game content via triangulating from analyses of top-grossing free-to-play games, from a review of existing research, and from industry expert input. These reasons were operationalized into a survey (N = 519). Firstly, we explored how these motivations converged into categories. The results indicated that the purchasing reasons converged into six dimensions: 1) *Unobstructed play*, 2) *Social interaction*, 3) *Competition*, 4) *Economical rationale*, 5) *Indulging the children*, and 6) *Unlocking content*. Secondly, we investigated the relationship between these factors and how much players spend money on in-game content. The results revealed that the purchase motivations of unobstructed play, social interaction, and economical rationale were positively associated with how much money players spend on in-game content. The results imply that the way designers implement artificial limitations and obstacles as well as social interaction affects how much players spend money on in-game content.

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1. Introduction

Virtual goods and other forms of in-game content have rapidly become one of the biggest forms of online consumption for gamers and de facto revenue model for game publishers (Alha, Koskinen, Paavilainen, & Hamari, 2016; Hamari, 2015; Lehdonvirta, 2009). Selling virtual goods has especially been an integral part of the free-to-play/freemium business model that has rapidly spread to online services in general but perhaps most prominently to online games. In the free-to-play model the core game is offered for free for the user in order to acquire as many users as possible. The game publisher then attempts to upsell various pieces of in-game content in

order to generate revenue. For instance, an analysis of the top 300 apps in the Apple's App Store reveals that the majority of downloadable apps are games that employ the free-to-play model (Brockmann, Stieglitz, & Cvetkovic, 2015).

One of the main consequences of selling in-game content has been its impact on the design philosophy of games (Hamari & Lehdonvirta, 2010; Hamari, 2011; Lin & Sun, 2011; Nieborg, 2015). Developers are no longer simply trying to create the best possible game they can in the artistic sense, but rather, in order to sell in-game content, the game developers attempt to craft the game in a way that it would entice users to purchase in-game content as frequently as possible. This is commonly done by tweaking the game according to player behavior and introducing new content periodically (Alves & Roque, 2007; Hamari & Järvinen, 2011; Hamari & Lehdonvirta, 2010; Hamari, 2011; Nieborg, 2015; Oh & Ryu, 2007). Therefore, purchase decisions for in-game content are not only affected by people's existing general attitudes, consumption values, and motivations but also by the design decisions and

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the needs built into the game by the developers (Alha, Koskinen, Paavilainen, Hamari, & Kinnunen, 2014; Hamari & Järvinen, 2011; Hamari & Keronen, 2016; Hamari & Lehdonvirta, 2010; Hamari, 2010; Harviainen & Hamari, 2015; Lin & Sun, 2011; Paavilainen, Hamari, Stenros, & Kinnunen, 2013).

While there has been a clear increase in studies investigating purchases of in-game content and virtual goods during the last decade (see e.g. Hamari & Keronen, 2016 for a review), the related quantitative literature has commonly focused on latent psychological constructs rather than being concerned with possible purchase motivations that stem from how the game has been designed. The quantitative vein of literature has been interested in predicting virtual good or in-game content (re-)purchases from perspectives of different affective experiences in the game (Chou & Kimsuwan, 2013; Hamari, 2015; Lee, Lee, & Choi, 2012; Luo, Chen, Ching, & Liu, 2011), customer lifetime value (Hanner & Zarnekow, 2015), content visibility (Jankowski, Bródka, & Hamari, 2016), cultural and demographic aspects (Lee & Wohn, 2012; Wohn, 2014), tele/social presence (Animesh, Pinsonneault, Yang, & Oh, 2011), playfulness (Han & Windsor, 2013), flow/cognitive involvement (Huang, 2012; Liu & Shiuie, 2014), transaction cost theory (Guo & Barnes, 2011; 2012), satisfaction (Kim, 2012), perceived value (Chou & Kimsuwan, 2013; Park & Lee, 2011), critical reception (Alha et al., 2016), technology acceptance (Cha, 2011; Domina, Lee, & MacGillivray, 2012; Hamari & Keronen, 2016), theories of planned behavior and reasoned action (Gao, 2014; Kaburuan, Chen, & Jeng, 2009), and expectancy-disconfirmation model (Wang & Chang, 2013; 2014). Qualitative efforts mapping the phenomenon, on the other hand, have been more successful in identifying more specific and concrete purchase motivations that pertain to the nature of the business models and its related effect on game design (Hamari & Järvinen, 2011; Hamari & Lehdonvirta, 2010; Hamari, 2011; Zagal, Björk, & Lewis, 2013), user experiences (Alha et al., 2014; Cleghorn & Griffiths, 2015; Lin & Sun, 2011; Paavilainen et al., 2013), and features of virtual goods (Lehdonvirta, 2009). While the quantitative body of literature has focused on relatively abstract psychological factors, and has therefore been unable to provide knowledge on more specific reasons for purchases that stem from how the game is designed, the contributions of the qualitative studies sphere, on the other hand, have not yet been harnessed in quantitative efforts to systematize the measurement and understanding of purchase motivators for in-game content. Therefore, the efforts on measuring purchase motivations stemming from the design of the game are currently lacking.

To this end, we aim to investigate reasons for purchasing in-game content from a bottom-up perspective that is informed by data and observations rather than from a top-down confirmatory perspective. Firstly, we form a measurement instrument for measuring the different reasons for buying in-game content by triangulating the findings of analyzing top-grossing free-to-play games, existing research on purchase motivations, in-depth discussions with game industry specialists, and literature related to gaming motivations. The resulting inventory of reasons (19) to buy in-game content was operationalized into a survey and was administered to free-to-play game players ($N = 519$) that had purchased in-game content. Next, the factorial properties of the measurement instrument are investigated. Finally, we investigate which purchase motivation factors predict how much players spend real money on in-game content.

2. Questionnaire development

We developed a set of items corresponding to reasons for making purchases in free-to-play games. The aim was to focus on concrete reasons for buying in-game content that players are faced

with in free-to-play games. To comprise a comprehensive list, we analyzed one hundred top-grossing free-to-play games (excluding casino games) according to AppAnnie (a prominent data analysis tool used in mobile markets). From each genre, the typical in-app purchases and in-game spending mechanics were analyzed. We then triangulated the findings based on empirical knowledge on game content business (Paavilainen, Koskinen, Korhonen, & Alha, 2015a, 2015b, 2013; Alha et al., 2014; Evans, 2015; Hamari & Järvinen, 2011; Hamari & Lehdonvirta, 2010; Hamari, 2011; Kallio, Mäyrä, & Kaipainen, 2010; Lehdonvirta, 2009; Lin & Sun, 2011; Nieborg, 2015; Oh & Ryu, 2007; Tyni, Sotamaa, & Toivonen, 2011) and on gaming motivations (Hamari, Keronen, & Alha, 2015; Ryan, Rigby, & Przybylski, 2006; Sherry, Lucas, Greenberg, & Lachlan, 2006; Yee, 2006), supported by a plethora of discussion amidst game developers during the last eight years. The resulting list was further discussed, evaluated and edited in collaboration with an industry specialist who is in charge of monetization strategies in a major free-to-play games company. The final list of 19 motivations was included in a survey (See Table 1).

In the survey, the respondents were instructed to consider all the occasions of using money on in-game content and asked to rate how important the following reasons had been when making in-game purchases on a 7-point Likert scale (1 = Not at all important, 7 = Extremely important).

3. Data

The data was gathered by an online survey through websites and social media pages of three major Finnish games-related magazines. The link to the survey was posted on the websites and in some cases also on the Facebook pages of the magazines. In all cases, the link was accompanied by a short introduction and invitation to participate in the study. The survey was active for 17 days. All the respondents who entered their contact information at the end of the survey were entered in a prize raffle of three video games and eight movie tickets. During the timeframe of the survey, 1159 responses were collected.

From the collected sample of 1159, 70 cases reported not to have played free-to-play games, and were therefore removed. For the remaining responses, analyses were conducted for detecting outliers. For the purposes of this study, only the respondents that had bought in-game content were retained in the final data set as only they were able to respond to the respective questions concerning purchase reasons. This resulted in a sample of 519 respondents.

Table 2 outlines the demographic details of the respondents. The gender distribution of the data is unequal with male respondents representing over 91% of the sample. Regarding age, most respondents, specifically 94.8%, are under 40 years of age. Of the under 40-year-olds, the 20 to 29-year-olds are most heavily represented. The gender and age division most likely reflect the readership of the channels for recruiting the respondents, the Finnish gaming magazines. The respondents reported to be mostly students. The highest completed level of education reveals that most respondents reported to have either a secondary level or a higher education. Moreover, given the high percentage of students in the sample, the heavy representation of respondents reporting their yearly household income to be below 19 999 € is reasonable.

3.1. Descriptive statistics

A descriptive analysis (Table 3) of the purchase motivations revealed that *unlocking content* ($M = 4.963$) was reported as the most important reason on average, followed by *supporting a good game* ($M = 4.765$), *reasonable pricing* ($M = 4.127$), *special offers* ($M = 3.809$), and *investing in a hobby* ($M = 3.441$). These top

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