"Business models and Pricing Strategies in videogames industry"

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Introduction

Video games Business Models: Theoretical framework

- Pay-once/Fire and forget model
- In-Game advertising
- Advergames
- User Generated Content (UGC)
- Sponsored Games/Donationware
- Player to player wagering
- Skill-based progressive jackpot

Introduction

Video games Business Models: Theoretical framework

- Crowdfunding model

- Subscription model

- Pay per play / pay as you go / pay per time model

- Bitcoin mining as a means of payment model

- Microtransactions

Virtual items transactions in business models

Business models	Virtual items transactions in revenue streams
Pay-once/Fire and forget	-
In-Game advertising	-
Advergames	-
User Generated Content	☑ (possible) (Di Gangi & Wasko, 2009)
Player to Player Wagering	☑ (possible) (Perry & DeMaria, 2009)
Skill-Based Progressive Jackpot	☑ (Perry & DeMaria, 2009)
Sponsored Games / Donationware	☑ (possible) (Perry & DeMaria, 2009; Mehdi et al., 2009)
Crowdfunding	☑ (Hemer, 2011; Agrawal et al., 2013)
Subscription	-
Pay per play / Pay as you go / Pay per time	-
Bitcoin mining as a means of payment	☑ (Farivar, 2012)
Microtransactions	☑ (Hamari & Lehdonvirta, 2010)

Literature review

- Online games are virtual worlds that allow interaction among multiple players (Curtis, 1992).

- Guo & Barnes (2007) were the first who developed a theoretical model that defined the purchase behavior in virtual worlds.

- Players' purchase behavior intention (PBI)

  Effort expectancy, performance expectancy and social influence (Guo & Barnes, 2007)

Literature review

- Yee (2005) proposed that the main reasons that lead a player to seek more and more advanced items in online games are the customization choices and the sense of achievement.

- These two elements were also proposed by Oh and Ryu (2007) in their research about the item-selling based payment model in Korean online games.

- Lin and Sun (2007) further clarified these two elements by categorizing virtual items in two categories: functional and decorative in their research about free-to-play multiplayer online game worlds.

- Guo & Barnes (2009) also underlined the importance of functional and decorative attributes along with the perceived enjoyment but they added that there should be a link between the enjoyment of using virtual items and the participation of the players.

Literature review

- Heijden (2004) proposed that IS acceptance models can offer instrumental or hedonic value.

- For online games Guo and Barnes (2009) also distinguished the difference between these two values (hedonic and instrumental) and they emphasized on the importance of the instrumental attribute.

Literature review

- According to the theory of consumption values of Sheth, Newman and Gross (1991), there are five consumption values: functional, emotional, social, epistemic and conditional

- However, in online games the following three consumption values are proven to affect the PBI: the functional, the emotional and the social value (Ho & Wu, 2012).

Literature review

- **Martineau (1958) showed that the shopping behavior is influenced by the social status.**

- **In online games the perceived social status is related to the acquisition of virtual items. Lehdonvirta (2009) proposed the social quality that virtual items may carry, as a factor that triggers the PBI.**

- **By using virtual items and achieving their goals, players gain reputation and change their social status. The construct, Prestige, captures the influence that virtual items have on players' desire for recognition by obtaining more advanced virtual items (Lehdonvirta, 2009)**

Literature review

- Castranova (2001) examined the virtual world Norrath and showed that users use virtual items in virtual worlds in order to gain reputation and increase their competence. He also noted that users spend a lot of money in order to make such progress.

- In online persistent world games, players also spend a lot of money in order to become powerful and prestigious. The more money players spend on a specific game, the more they are locked in that game. This occurs because the switching costs are high (Castranova , 2001) .

- It is more likely that they keep spending their money on purchasing virtual items for the game they already play in order to maintain their status or further advancement (Guo and Barnes, 2012).

Literature review

- In real world, the perceived value describes the difference between the perceived utility of the item and the perceived effort that is required in order to obtain it (Zeithaml, 1988)

- Particularly for virtual worlds, Guo and Barnes (2012) redefined the framework of the perceived value of virtual items. The perceived value of virtual items depicts the players' cost-benefit valuation regarding the use of virtual stores.
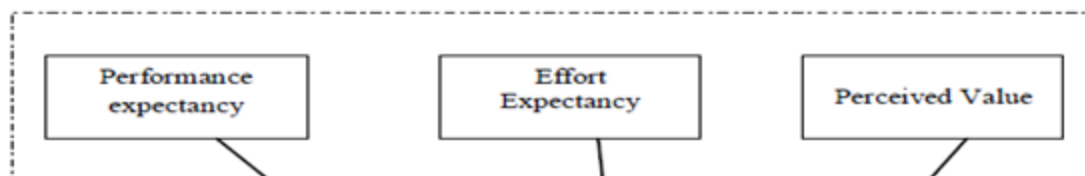
Methodology

- Case study analysis

- Online Survey

- PLS-SEM

The Research model
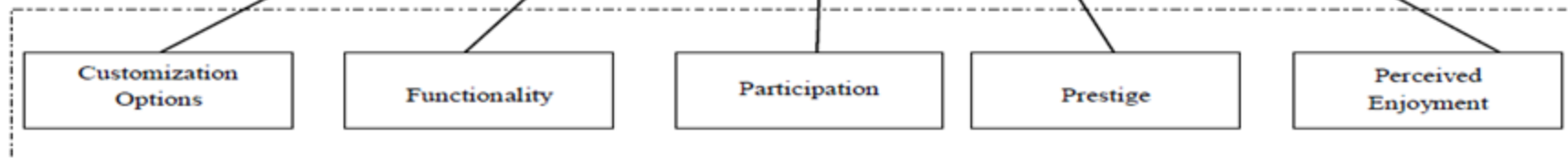
Results

		Hypothesis testing results		
Hypothesis	Path	Path coefficient	t value	Results
H1	PE->IB	0.38**	7.68	support
H2	EE->IB	0.26**	6.83	support
H3	PV->IB	0.23**	3.09	support
H4	CO->IB	0.53**	13.8	support
H5	FU -> IB	0.29**	6.83	support
H6	PON -> IB	0.11*	0.75	Marginally support
H7	PRE -> IB	0.18**	3.55	Support
H8	PE -> IB	0.17*	1.83	Marginally support

* $p < 0.1$, ** $p < 0.01$

Results

IS centric constructs

Performance expectancy — 0,38**
Effort Expectancy — 0,26**
Perceived Value — 0,23**

Intention to buy virtual items

R² = 61%

Customization Options — 0,53**
Functionality — 0,29**
Participation — 0,11*
Prestige — 0,18**
Perceived Enjoyment — 0,17*

Game centric constructs
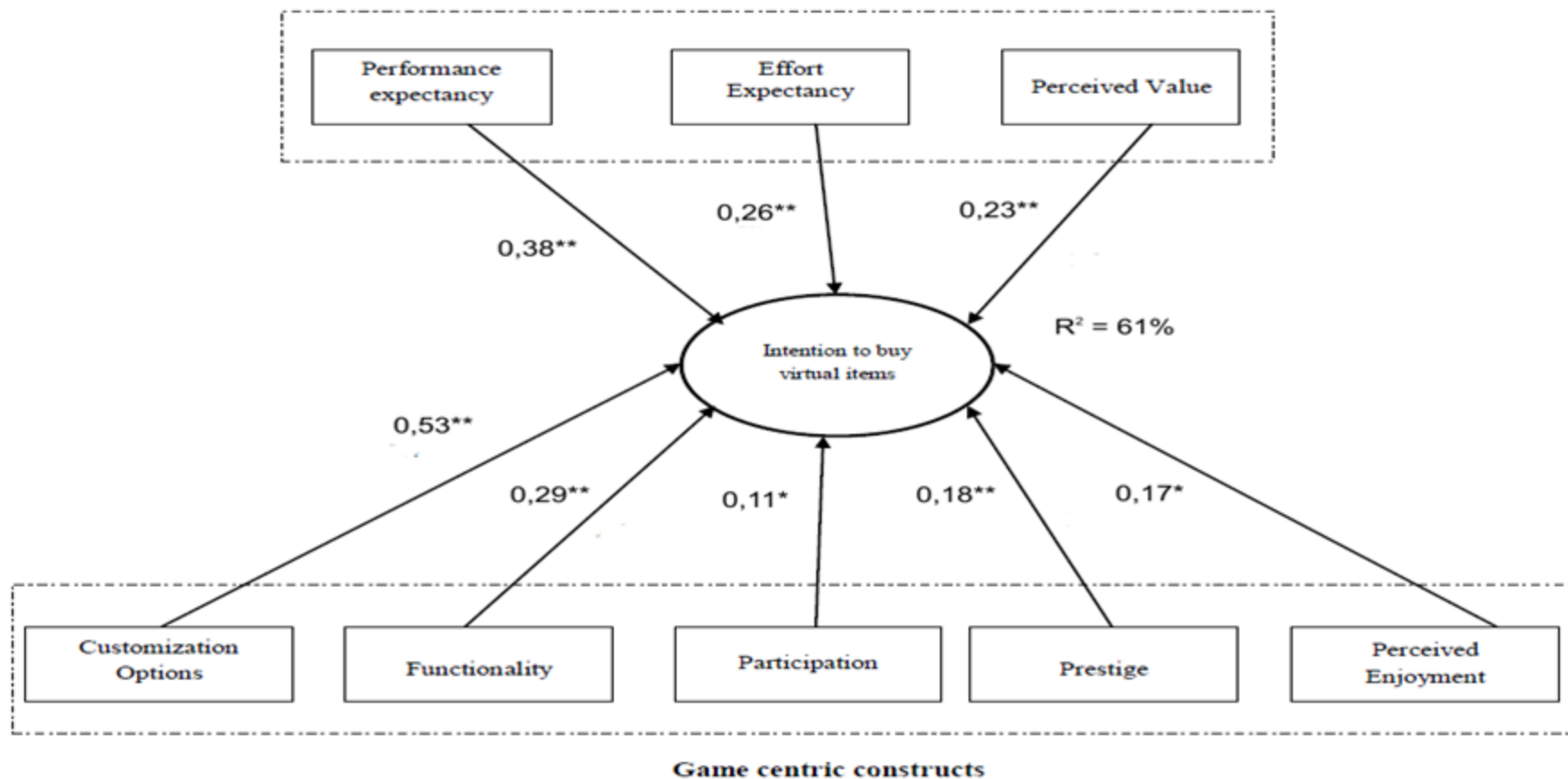
Empirical conclusions

- According, to our survey items, players are more likely to spend their money on aesthetics and in-game effective virtual items, rather than on virtual items that are pertinent to their relationships with other players.

- In contrast to Game-centric constructs, all IS-centric constructs have a strong influence on players' purchase intention.

- Game mechanics should adapt to and emphasize on promoting in-game virtual items that offer the player customization options and in-game effectiveness.

- Virtual stores should help player to find his/her desired virtual items and search process should be easy. Virtual stores should also offer virtual items with high perceived value.

Limitations

- We do not take into account other possible virtual item drivers such as cultural references or provenance (Lehdonvirta, 2009).

- We do not examine the habit as a possible virtual item driver because habit has an effect on the actual purchase behavior and not on intention (Guo & Barnes 2009).

- We do not take into account constructs related to intention to play online games such as flow or critical mass (Hsu and Lu, 2004).

- We prefer Perceived Value to Price Utility because Perceived Value includes both monetary and non monetary value of the virtual items available at virtual stores (Ho & Wu, 2012).

- No game type (Ho & Wu, 2012).

Implications

- Previous studies (Guo and Barnes, 2012) also found that (PE), (EE), (CO), (PRE), Perceived Enjoyment(PE) and Perceived Value (PV) have a positive effect. However, Guo and Barnes (2012) found that Participation (PON) does not affect positively players' purchase behavior.

- Ho and Wu (2012) found that indeed, Participation (PON) affects positively players' intention to buy virtual items. Ho and Wu (2012) also found that Customization Options (CO) and Prestige (PRE) affect positively players' purchase behavior. On the other hand, we have different results with Ho and Wu (2012) because Ho and Wu (2012) found that Functionality (FU) does not affect positively players' purchase behavior.

Implications

- The results of our survey may be useful to video game companies that follow business models that include virtual items transactions in their revenue streams.

- Video game companies that follow these business models and have their own virtual store may take into account the strong effects of IS-centric constructs (Performance Expectancy (PE), Effort Expectancy (EE), Perceived Value (PV) in order to enhance their virtual stores' efficiency.

- Virtual stores should offer: comparison tools, advanced search capabilities and virtual items with high perceived value. (according to game audience attributes)

Implications

- Video game companies may take into account the effects of Game-centric constructs (Customization Options (CO), Functionality (FU), Prestige (PRE))

- Our results may help them to set game design priorities.

  In order to create virtual items with high selling value, video game companies should take into the most strong effects, Customization Options (CO) and Functionality (FU).

- Video game companies should focus on offering virtual items related to in-game effectiveness and customization options. For example a video game company can focus on creating damage proof items, alternative costumes or background themes.

Implications

- Video game companies that follow user generated content model should promote the creation of virtual items related to in-game effectiveness and customization options. Players that take part in this business model may also find our results useful in order to trade their content more effectively.

- Video game enterprises can offer virtual items related to Prestige (PRE). Such virtual items may show off player's progress or status. For example in videogames betting models such virtual items are virtual special badges that depict players' consecutive wins.

- Video game companies may offer virtual items related, to Participation (PON), if there are strong social bonds in the communities of a video game, For example such virtual items are special rings that allow player to communicate with his/her gaming group but only if they hold the same type.

- However, we have to note that Participation (PON) and Perceived Enjoyment (PE) require further research.

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