

# The Roles of Unobstructed Play and Motivation to Compete in Influencing In-Game Virtual Goods Purchase: A Preliminary Study

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*Abstract:* - The purchase of virtual goods during game playing has become a key factor in the market of mobile game. Yet, the motivation of game players to buy those digital items is still relatively unknown in this young and lucrative industry. Therefore, the aim of this research is to determine the effect of unobstructed play and motivation to compete towards in-game purchase intention. To test the proposed research model, we collected data using a questionnaire survey from game players in Jakarta area. The method used to do the analysis is by using a multilinear regression. The preliminary results reveal that unobstructed play and competition motive had significant impacts to influence in-game purchase intention

*Key-Words:* - In-Game Purchase Intention, Motivation to Compete, Online Games, Unobstructed Play, Virtual Goods

## 1 Introduction

More recently, we have seen the rise of games from fringe to prominence [1]. The reviews and ratings of games have an impact on better information to the gaming society in selecting games from an extensive large collection [2]. These reports from the professionals and authorities are giving the players a hint on what they need to expect from the game before making a purchase [3]. A well-received game can generate hype, which in turn could be used to influence or predict the sales [2]. Therefore, the commercial success of games is dependent to the potential buyers and game developers.

Different with other products, games provide entertainment experiences that a shift in audience and play style can be seen vividly [1]. Previously linear, repetitive, and restricted to pricing, now many firms have the choice of content (selling the price), information (selling data), and advertising display as the revenue models [4, 39]. As people's entertainment need is growing, game publishers are pushing to cash in real revenues from digital goods consumption by gamers virtually [5]. Already one of the popular games in Asia, Mobile Legends Bang Bang (MLBB) has successfully attracted the attention

of public of gamers in Indonesia [6]. MLBB has recorded the data of 50 million of active players across Indonesia or 29.4% of 170 million active players all around the world [7].

According to previous studies, it was found that willingness to purchase virtual goods while playing mobile games is affected by game enjoyment, meaning that gamers want to continue playing but reluctant (after going through digital hurdles) are more eager to buy the items [8, 9]. The free-to-play design of the game by the publishers prevent players from finishing the games, except they use actual money [10]. Hamari et al.'s study found that players are willing to spend more cash on game items to avoid play interruption, e.g. loss of rewards or speeding timers [5].

In their study, Hamari et al. mentioned that the competition factor has not been thoroughly researched as a precursor of digital item purchases in previous quantitative studies [10]. Yet, the motive to compete prevails in the free-to-play business model for the reason that players "unlock, earn and win" virtual achievements in games and they want to show them off to friends [11]. While there were past studies that defined the connection between purchases of in-

game content and virtual goods, there was minimal research that addressed the motivations that addressed competition and unobstructed play in their relationship [3, 9, 12]. This leads to the importance of unobstructed play and competition factors to be included in this research. Thus, there is a paucity of research on the effects of motivations on in-game purchase intention amplified by unobstructed play and competition. To address this gap, this research examines the role of unobstructed play and competition on the gamers' intention to purchase in-game virtual goods.

## 2 Literature Review

Literature review has shown that several studies have been written based on various elements that influence in-game purchase intention.

### 2.1 The Concept of Free-To-Play

The concept of free-to-play (F2P) comes from the idea of reduced friction and openness for everyone and it has become a viable and profitable model for new game developers working on new intellectual property [13]. F2P model, known as "freemium" (free and premium), is where the game requires zero payment from players, completely free of charge. Within the game, users may choose to purchase in-game content and virtual goods, which means potential revenues for the game developer [14].

Many F2P games feature dual currencies: soft currency and hard currency. Soft currency can be earned when game players complete a task, which they can use to buy basic in-game items, while hard currency can be converted to soft or to give access to premium content [11].

Just because the market is going without an upfront payment, it does not mean that F2P is without its challenges. The design inevitably affects the game experience which turns into a dilemma for game developers whether to go for faster revenue or take advantage of players [3].

### 2.2 Study Context: Mobile Legends – Bang-Bang!

The scope of this paper is to assess virtual goods purchasing behavior in the scope of Mobile Legends – Bang-Bang! (MLBB), developed by a Shanghai-based video game developer, Moonton. Competitive cellular digital games have never reached the same level of public interest compared to MLBB in Indonesia. The genre of MLBB is commonly called MOBA, or Multiplayer Online Battle Arena, which one of the goals is to destroy the main building of the opposing team's headquarters. This task may need

the help of several soldiers who are controlled by the system periodically, while each hero has different roles and abilities and can be used to contribute to the team in winning the game. This e-sport game features a 5-vs-5 battle mode, a classic 3-lane battle, and country-to-country match [32].

The most popular digital game in Indonesia, MLBB dominates a significant mobile game market and accounts for half of the total Southeast Asian market revenue [33, 34]. Gamers in Indonesia have a preference for real-time strategies (MOBA is part of the real-time strategy) and MLBB players in this country reaches 70 million, or about 1/3 of the total player population [35].

One factor contributing to the popularity of MLBB is the low technical requirements because it can be accessed by lower-class smart mobile devices [32]. Her study found that players are willing to spend as much as USD 500 to buy virtual goods, e.g. crystals, battle points, and emblems. The willingness to purchase made the players' game to be more uplifting, and the most entertaining value is to show off the digital items to other players.

### 2.3 Virtual Goods

According to Lehdonvirta, digital goods are items that can be expressed in bits, so they have neither material element nor a physical material form [15]. These digital goods are utilized in the digital transaction environment, and vice versa, virtual items that only appear on an individual's computer or that disappear after the machine is turned off are not digital goods [8].

Game players purchase digital goods and gratuities to escalate their hopes of in-game victory by increasing the power of a character (offensively or defensively) or meeting the necessities of missions or tasks [16, 17]. Hamari pointed out in his study that virtual goods are digital in-game objects that are consumed and exchanged exclusively in the digital environment [8]. According to Shang et al.'s study, virtual goods are divided into functional (e.g. tools, treasures, and talismans) to accomplish tasks, and non-functional or decorative goods to get their avatars dressed up or their houses decorated [18]. On the other hand, hedonic-oriented virtual goods may provide aesthetic pleasure, while utilitarian-oriented virtual goods bring functional or performance benefits [19, 20]. As described in the study by Guo and Barnes, the motives to pursue virtual goods are perceived playfulness (the game user's engagement), character competency (the skills of the game player), and the task or mission of the game (the items a user's character needs to participate in a game quest) [17]. Virtual goods are categorized into functional (i.e.

performance and functionality) and emotional/social qualities (i.e. presence, source, rarity, and capability to be customized) [20].

## 2.4 Intention to Purchase

To measure the determinants of consumer online purchasing behavior, several theories have been used. In the Theory of Reasoned Action, the intention of an individual is predicted by two factors, attitude towards the behavior and subjective norms [30]. Ajzen added a new construct in perceived behavioral control to extend TRA into The Theory of Planned Behavior [31]. Adapting the TRA, Davis explained that perceived usefulness and perceived ease of use are the beliefs that influence a person's intention towards using new technologies [36]. By reviewing TPB and TAM, Venkatesh et al. proposed UTAUT that comprises three constructs in performance expectancy, effort expectancy, and social influence [37]. However, Sheth et al. believed that consumers purchase their products due to functional, emotional, social, epistemic, and conditional consumption values [38].

## 2.5 Hypothesis Development

As described by Hamari et al., unobstructed play includes purchase motivations related to being able to continue playing without interruptions or distractions, e.g. speeding timers, escaping repetition, reaching the end of the game, continuing play, and protecting accomplishments [5]. The business model of selling in-game goods is determined by how the game is modeled and by the guidelines that manage how the items function in relation to the game's rules [21]. Thus, game developers can be seen to create value for the virtual goods between the game and the products sold in games through a series of artificial limitations which has been gathered during the game playing ([10], [22]). Thus, based on the previous discussion, we propose this hypothesis to be tested:

H1: Unobstructed play motivation has a positive influence on in-game purchase intention.

According to Koivisto and Hamari, extensive gaming can have adverse impacts on physical and mental health [23]. For instance, even though gamifications are often implemented in order to create positive impact, they may increase the sense of competition, even if creating this type of experiences was not the actual objective [24]. A competitive environment may prevent potential long-term players, and thus have disadvantageous effects on the activity that the gamification originally aimed to support [25, 26, 27]. In Hamari et al.'s study, the competition factor includes purchase motivations related to competition, becoming the best player and showing it to others:

becoming the best, showing off achievements, and showing off to friends [21]. Therefore, we propose this hypothesis:

H2: Motivation to compete has a positive influence on in-game purchase intention.

## 3 Methodology

The method conducted in this research is a descriptive study using a convenience sampling method. The questionnaire distribution started in December 2019 for the next two months, which was administered by utilizing online questionnaire platform comprises of set of questions in Likert scale measurement.

This research targeted the users of the online game Mobile Legends: Bang Bang (MLBB) in Jakarta (Indonesia). The object of this study was chosen due to the fact that MLBB was one of the most popular and best-selling games in the Google Play Store in Indonesian market [6].

From the sample data, 92% of the respondents were male, most respondents were between 18 and 24 years of age, most respondents spent (approximately) USD 100 for their monthly spending, 55% of the respondents played between 4 and 8 hours a week, and 87.5% had at least one year of experience playing mobile games. All of the respondents had purchased at least one virtual good while playing the game. Table 1 summarizes the demographics of the respondents.

Table 1 Profile of Respondents

Measure	Items	Freq.	%
Gender	Male	37	92.50
	Female	3	7.50
Age (years)	Less than 18	7	17.50
	18-24	30	75.00
	25 or older	3	7.50
Monthly Spending	< USD 100	19	47.50
	USD 100 - 150	13	32.50

	USD 151 - 200	3	7.50
	> USD 200	5	12.50
Playing Frequency	Less than 1 hour/week	5	12.50
	1 - 3 hours/week	11	27.50
	4 - 8 hours/week	11	27.50
	9 - 12 hours/week	7	17.50
	More than 12 hours/week	6	15.00
Playing Experience	More than 1 year	35	87.50
	Less than 1 year	5	12.50

The questionnaire contained two sections: demographic profile and construct items. The items used to operationalize the constructs included in the model were adapted from relevant prior studies and were slightly modified to fit the target context.

Items for measuring in-app purchase intention were adapted from [28] and [29]. Survey items for measuring unobstructed play and motivation to compete were adapted from the works of Hamari et al. [21]. The factor unobstructed play includes the motivations of players to purchase in order to be able to continue play the game without any interruptions: timers, keeping away from repeating, finishing the game, continuing play, and maintaining prizes. The motivation to compete factor includes to be number one in the game, showcasing prizes and displaying to friends (see Table 2).

It is notable that this paper builds on selected aspects of a previous study [21]. However, exemptions were made to two other factors (social interaction and economic rationale) from the study. Social interaction was excluded due to its similarity to the motivation to compete factor, while economic rationale resembles purchase intention.

For questions related to unobstructed play, four items associated with avoid repetition, reaching completion, continuing play, and protecting achievements were used. The survey components of

motivation to compete contains items related with becoming the best, showing off achievements, and showing off to friends.

Table 2 Survey Constructs and Dimensions.

Construct	Dimension	Range
Unobstructed Play	To avoid repetition	1-4
	To reach completion	1-4
	To continue play	1-4
	To protect achievements	1-4
Motivation to Compete	To be number one	1-4
	To display achievements	1-4
	To showcase to peers	1-4
In-Game Purchase Intention	Effort expectancy	1-4
	Attitude towards virtual goods	1-4
	Social presence	1-4

All items were measured using a 4-point Likert scale, ranging from “strongly disagree” (1) to “strongly agree” (4). In order to modify ambiguous expressions, the wording of the scales, and the length of the instrument, a pretest was performed with 3 experts in playing online games. Practical problems with implementation were identified via a pilot test administered to 30 respondents selected from a population of mobile game players. The results of the pilot tests showed acceptable reliability and validity of the measurements. From 65 distributed questionnaires using Google Form link, only 40 responses are valid resulting in a response rate of 80%. The original items were in English and were

translated into Indonesian. The proposed structural model can be seen in Figure 1.

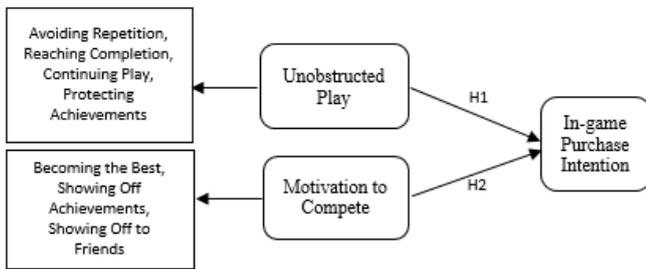


Fig 1 Research Model

### 4 Results and Discussion

The multiple R (R) from the regression test (Table 3) describes the strength of the overall linear relationship. Since the result of the coefficient of determination is close to 0.5, it means that the linear relationship is strong. The model summary also shows the R Square, measuring the proportion of variation in dependent variable towards the independent variable, is 0.306, which illustrates that 30.6% of in-game purchase intention can be described through the motivations of unobstructed play and competition.

Table 3 Regression Test

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0.454	0.306	0.195	2.191

In Table 4, the t-test result of H1 signifies that the p-value of UOP is 0.003 which is lower than  $\alpha$  of 0.05, then it can be concluded that the variable is significant. The value of t-test is 4.606 and the t-table is 2.021. The value of t-test is higher than the t-table, which indicates that the null hypothesis (H0) is rejected. Therefore, it can be implied that unobstructed play (UOP) has a positive influence on in-game purchase intention. The result of H2 signifies that the p-value of COM is 0.001 which is lower than  $\alpha$  of 0.05, then it can be concluded that the variable is significant. The value of t-test is 2.297 and the t-table is 2.021. The value of t-test is higher than the t-table, which indicates that the null hypothesis (H0) is rejected. Therefore, it can be implied that competition as a motivation has a positive influence on in-game purchase intention.

Table 4 Coefficients

Model	Coefficients	t	Sig.
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	B	Error	Beta		
(Constant)	1.094	0.426		8.403	0.000
UOP	0.129	0.070	0.105	4.606	0.003
COM	0.214	0.066	0.396	2.297	0.001

### 5 Conclusion

Currently, people are experiencing a digital self-extension by playing and competing in virtual games [12]. Empirically, this paper examined how unobstructed play and motivation to compete influence the players' intention to purchase virtual goods while playing online games. Adapting from the works of previous study, we specified a research model to predict how uninterrupted game play and competition motive affect in-game purchase intention.

The main conclusion of this study is that unobstructed play and motivation to compete are important antecedents of in-game purchase intention. By embracing a free-to-play philosophy, a few commercial strategies can be applied to these games. Our findings show that online games do provide experiences for their players. However, since people aim for internal consistency, the revenue model of free-to-play create limitations and playability issues due to conflicting missions between the game designer and the player. The unobstructed play factor may teach young players that limitations or hindrances can be skipped with a micropayment [14].

From the result, we can also learn that mediocre games can still make revenues on the retail side, whereas compared to F2P the games have to be good to bring the money in. The results of current study also supported our hypothesis concerning the relations between motivation to compete and intention to purchase in-game content. In addition to those, the results suggest that only informations play an important role to influence players' buying intention to purchase virtual goods. Game experts may want to consider this as an opportunity for free consultation which can later influence more purchase decisions.

Based on previous study, competition has not been investigated as a determinant of in-game item purchases in prior quantitative studies [21]. One limitation of current study is that the respondents were mostly young male game users. For future

endeavors, it is recommended to explore female game users as well as older game users. Our small research contribution hopefully can provide inspiration for further explorations on the world of online games.

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