



# The Effect of Self-Control on Impulsive Buying of In-Game Virtual Goods among Mobile Legends Bang Bang Players

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**Abstract.** Playing online games is means of entertainment for young people today. One of the most popular games in Indonesia is Mobile Legends Bang Bang which not only offers mobile multiplayer online battle games, but also sells virtual goods, such as heroes, skins, and virtual money (diamonds). There is a tendency for some young people to buy virtual goods impulsively so that purchases become unreasonable and cause regret. One of the factors that influence impulsive buying is self-control. The purpose of this study was to determine the effect of self-control on impulsive buying of in-game virtual goods among Mobile Legends players. The sample of this research was 200 players aged 16-32 years who were obtained by purposive sampling. Respondents were accessed via social media and player community groups. Data were collected using self-control scale and in-game virtual goods impulsive buying scale, then analyzed using Simple Linear Regression Analysis. The results showed that self-control is statistically significant influencing the impulsive buying of in-game virtual goods ( $R = -.271$ ,  $R^2 = .073$ ,  $F(1,198) = 15.668$ ,  $p < 0.05$ ). The better the player's self-control, the less likely they are to make impulsive purchases of in-game virtual goods. However, the effective contribution of the independent variable to the dependent variable is relatively small, only 7.3%. It was discussed that 92.7% of impulsive buying is probably influenced by other factors, such as age, gender, mood influences, and materialism. These findings suggest that game players should not make impulsive purchases by controlling themselves. They also need to consider finances and needs more when making a decision to buy in-game virtual goods.

**Keywords:** self-control, impulsive buying, in-game virtual goods, Mobile Legends Bang Bang, online gaming, virtual consumerism.

## 1 Introduction

Playing online games has become entertainment for some people when they have spare time. In Indonesia, the number of game players in 2020 reached 54.7 million people [1]. [2] reports that there are 202.6 million internet users in Indonesia as of January 2021, where the majority of internet users (60.2%) use their smartphone to play games

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[3]. Currently, access to online game play is easier because it is supported by game applications that can now be played via smartphones. In addition, smartphone prices are more affordable than computers and video game consoles [3]. On the other hand, there is also increasing concern about health problems among game players due to timeless gaming behaviour, physical disorders such as carpal tunnel syndrome, sleep disorders, and messy eating patterns [4]; mental health problems caused by online game addiction [5], and financial problems due to uncontrolled or impulsive online game consumer behavior [6].

There are several popular online games played by Indonesian people, but there is one that attracts many players, namely Mobile Legends Bang Bang. This game was developed by the developer company Moonton [2] and has millions of players around the world as evidenced by the number of downloads that have reached more than 100 million since this game was launched globally on the Android platform in 2016. This game player has been used by in various groups of people ranging from children, adolescents, to adults [7]. Not only providing entertainment through multiplayer online battle arena (MOBA) games, but this game also provides virtual goods that can be purchased by players. Virtual goods are non-physical goods purchased by the online gaming community to make the environment in the virtual world more attractive and improve the quality of the game. These virtual goods can be purchased in-game, so they are often referred to as in-game virtual goods in the form of clothes (skins), currency, hero characters and tokens that are only found in a virtual environment. This virtual item also has a social function because it can be gifted to other players, so it is very popular and becomes a necessary item that is consumed by players in the online gaming community [8].

Players can get virtual goods by first buying diamonds, which are real money conversion tools used in the game to buy necessities in the Mobile Legends game. In general, players use diamonds to buy hero skins so that the hero looks more attractive, stands out, and gives certain effects in the game [7]. To understand the shopping behaviour of youth players, researchers conducted a preliminary study of 40 adolescents and adults and found that in-game virtual goods purchases are relatively frequent, between one and five times a month. The money spent to buy in-game virtual goods reaches IDR 100,000-450,000.00 or around 6.6-29.71 USD. The money used to buy virtual goods generally comes from working income or asking parents of younger buyers. These virtual goods are sometimes bought out of control because of a strong feeling and desire to own them, without thinking about the financial consequences. This problem shows the phenomenon of impulsive buying among game players.

Impulse buying occurs suddenly, full of force, and a strong urge to buy something immediately without forethought and planning, or intention to buy [9]. On the cognitive aspect, impulsive buying is characterized by a lack of planning (purchases are made spontaneously and unexpectedly), a lack of consideration in purchasing, for example in the suitability between price and product benefits, lack of judgment based on consideration of the product to be purchased with other products that may be more useful, and lack of concern for negative consequences after purchase [10]; [11]. Meanwhile, on the affective aspect, impulsive buying begins with an urgent desire to make purchases

based on the desire of the heart to get pleasure or satisfaction. However, it ends with feelings of disappointment and regret for spending money uncontrollably [11] ; [10].

Previous research has shown that impulsive purchases in online games have a significant impact on spending expenses, extravagant lifestyles, feelings of regret, and disappointment due to excessive buying of products [12] ; [6] . Impulse purchases can occur due to the influence of two factors, namely individual internal factors such as mood and emotional state when shopping. Second, are external factors that come from the attributes of the products being sold and promoted [13] . [14] Stated that impulsive buying is influenced by self-control where the lack of self-control will lead to a higher tendency to make impulsive purchases. Therefore, self-control is the most important factor to restrain impulse buying. Self-control is the ability to control impulses when a person is faced with challenges and temptations so that the desired results are obtained and avoid unwanted consequences [15] . Self-control is related to the ability to control emotions and impulses within oneself, so that it can be a problem solving when someone decides to make a purchase selfishly or irrationally. With strong self-control, purchases are made consciously with more rational considerations regarding the desired item [16].

There is a lot of research on impulse buying and self-control, but not much has been done in the context of buying in-game virtual goods because this is a relatively new issue in the study of consumer behavior. Based on these considerations, this study aims to determine the effect of self-control on impulsive purchases of in-game virtual goods, especially for Mobile Legends Bang-Bang game players. The scope of research is limited to certain online game consumers because each online game sells virtual goods with different functions and forms. This study has a hypothesis that the stronger self-control of game players contributes to a decrease in the tendency to buy impulsive in-game virtual goods. The results of this research can enrich the literature in the field of consumer psychology, especially on the topic of virtual consumerism, and can be the basis for developing intervention strategies so that game players are not trapped in impulsive purchases.

## 2 Method

This study used a quantitative survey design and was conducted on N = 200 Mobile Legends Bang-Bang online game players. Participants were obtained using convenient sampling with reference to the criteria: aged 16-34 years, have been playing actively for at least one year, and have purchased virtual goods at least once in the past month. The age limit is set based on the results of a decision lab [17]. that the average online game player is 16-34 years old. Determining the subject's age range aims to obtain a large enough variation in impulsive behavior among participants. Meanwhile, the minimum playing experience limit of one year is set based on the consideration that within that time, players have understood in-game menus, how to play, and what settings are contained in the game.

The research data was collected using a psychological scale. Online game players' self-control was collected using the Self-Control Scale which was developed based on

three aspects of self-control, namely: resisting temptation, deliberate non-impulsiveness, and consistency of buying behavior (reliability) [18]. This scale consists of 27 items presented in a five-point Likert response format where 1 = very inappropriate to 5 = very suitable. The results of the reliability test showed the Cronbach's Alpha coefficient = .938. Items on this scale are for example: "When shopping online, I am able to distinguish between wants and needs," "I pay attention to the usefulness of the items to be purchased," and "When shopping, I take care not to have bigger pegs than poles."

Meanwhile, the tendency to buy impulsive in-game virtual goods is measured using the Impulsive Buying Scale which was developed based on two aspects, namely: cognitive and affective [10]. This scale consists of 32 items presented in a five-point Likert response format where 1 = very inappropriate to 5 = very suitable. The results of the reliability test showed the Cronbach's Alpha coefficient = .961. Items of this scale are for example: "When I find out that there is a new virtual item, I immediately buy it," "It doesn't matter if I have to spend money to buy virtual goods," and "I force myself to borrow money from friends to buy virtual items."

Both scales are presented using an online form that is disseminated online through communities or social media game players on WhatsApp and Facebook. Before collecting data, the researcher explained in advance about this research. Research participants first gave consent willing to become respondents by providing informed consent. In this study, the personal data provided by the participants was kept confidential and only used for research purposes, while the identity of the respondents was completely anonymous. The collected data were analyzed using Simple Linear Regression Analysis assisted by SPSS version 23 software.

### 3 Results and Discussion

#### 3.1 Results

Respondents from the study were players of the Mobile Legends Bang-Bang game who had purchased virtual goods, totaling N = 200 people. The majority of respondents are male (92.5%) and have Javanese race (53%). The status of the respondents are workers (58%), students (16%), and students at the undergraduate level (15%). Then the number of Mobile Legend Bang-Bang game players is 100% with 200 respondents. The average respondent has played the Mobile Legend Bang Bang game for three years by 41.5% with details as in Table 1.

**Table 1.** Participant

Variable	Total	%
Gender		
Woman	15	7.5
Man	185	92.5
Age		
Teenager (16-22 yo)	84	42
Adult (23-32 yo)	116	58

Variable	Total	%
Occupation		
Student	32	16
Student at the undergraduate level	30	15
Unemployment	20	10
Entrepreneur	30	15
Freelance	16	8
Worker	44	22
Game player	22	11
Driver	4	2
Athlete	2	1
Region		
Java	106	53
Non-Java	94	47
Duration of using mobile legends game		
1 year	21	10.5
2 years	21	10.5
3 years	83	41.5
4 years	45	22.5
5 years	18	9
>5 years	12	6

The results of descriptive statistical analysis of self-control and impulsive buying of virtual goods show that the average value of self-control is 89.3 with a standard deviation of 10.47, while the average value of impulsive buying is 106.44 with a standard deviation of 8.58. Before testing the hypothesis, the researcher conducted a normality test with the Kolmogorov-Smirnov test and a linearity test. The result shows that the data meets the normality and linear assumptions.

Hypothesis testing was carried out using Simple Linear Regression Analysis. The results show that the effect of self-control is statistically significant in influencing impulsive purchases of in-game virtual goods for online game players Mobile Legends Bang Bang with  $R = -.271$ ,  $R^2 = .073$ ,  $\beta = F(1.198) = 15.668$ , and  $p < .05$ . The relationship between self-control and impulsive buying shows a negative value, which means that the stronger the player's self-control, the lower the tendency to buy impulsively. It was concluded that increased self-control can reduce impulsive purchases of in-game virtual goods online game players with the regression equation  $Y = 126.263 - 222 * X$ .

However, the effect of self-control on impulsive buying is relatively very weak where the contribution of self-control to reducing impulsive buying is only 7.3%. That is, 92.7% of the tendency to buy impulsive in-game virtual goods is influenced by other variables.

### 3.2 Discussion

This study proves the hypothesis that self-control influences impulsive purchases of in-game virtual goods by online game players Mobile Legends Bang Bang. Analysis of the effect of the independent variables on the dependent variable shows that there is a negative and significant relationship between self-control and impulsive buying. This means that the higher the self-control, the lower the level of impulsive buying. This supports previous findings that self-control is a factor influencing impulsive buying [14]. However, the contribution value of self-control to impulsive buying was found to be relatively very low, namely only 7.3%. This finding is consistent with the findings of several previous studies [19]; [20].

The low contribution of self-control variables to this impulsive purchase can be caused by several factors. One of the factors is consumer characteristics such as demographic factors, including: gender, age, social class, economy, marital status, employment, and education [21]. Age is a determining factor in predicting impulse buying where younger people will tend to have less incentive to spend money. The tendency to buy impulsively is relatively higher in individuals aged 18 to 39 years and women than men [22]; [23]. [24] stated that women have a higher tendency to make impulse purchases because they are more influenced by emotions and moods. In this study, the majority of respondents were male adolescents and early adults. Another factor that should be considered is the value of materialism in which someone who is materialistic will tend to behave more impulsively than someone who is not [23].

[25] mentions that there are several things that make self-control difficult. The first is the standard factor, regarding whether a person knows what is the priority in his needs. People who know their priorities are less likely to behave impulsively, whereas someone who does not know will be more easily and prone to behaving impulsively. The second is the factor of self-monitoring, for example of one's financial condition. People who monitor and manage their spending in a considerate way are less likely to make impulse purchases. The third is ego depletion. People who feel ego depleted have a harder time resisting temptation and will make impulse purchases. They are less able to control their behavior toward long-term goals, such as saving money, and tend to buy things that provide temporary satisfaction. Someone who is unable to control their emotions has the potential to make impulse purchases.

This study has several limitations, namely: (1) subjects have unbalanced criteria based on age and sex, where the majority are 22 and 23 years old, and are male, and (2) gender imbalance is caused by researchers not having access to the female sample. By considering the role of demographic factors, it is suggested that future studies on this topic enlarge the sample in older players and balance the proportion of players according to gender.

## 4 Conclusion

This study investigates the effect of self-control on the tendency to buy impulsive in-game virtual goods in online game players Mobile Legends Bang Bang as a sample. A statistically significant effect was found, proving the role of self-control as an important

variable. Increased self-control contributes to reducing players' impulsive buying tendencies. Individual self-control can be a solution when individuals make decisions to make purchases irrationally so that purchases do not occur excessively. However, the contribution of self-control to impulsive buying is relatively very low, namely only 7.3%. Considering the limitations of this study, it is suggested that subsequent studies examine the influence of other factors, such as demographic factors and players' materialistic value orientation.

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