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How Does Self-Control Moderate Shopping Enjoyment and Impulse Buying Among Generation Z Online Gamers?

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ABSTRACT

In today's technological age, access to the Internet is required in various fields, ranging from the essentials (clothing, food, and shelter) to recreation. As a result, people are willing to part with their money for the thrill of playing video games, which frequently leads to impulsive buying. Given this trend, the research examined why male and female gamers in Indonesia made impulsive purchases. The research employed quantitative sampling with a purposive sample type, specifically probability sampling. It looked at 220 Indonesian online Generation Z gamers who bought virtual goods in-game using the Partial Least Squares-Structural Equation Modeling (PLS-SEM) model. From the results, three distinct phenomena are found. Firstly, evidence exists for the significant impact of shopping enjoyment on impulsive buying. Secondly, self-control has an insignificant role in preventing impulse buying. Lastly, the research offers insight into the insignificant role of self-control in moderating the relationship between shopping enjoyment and impulse buying. Among the three dimensions of self-control, cognitive control is the only dimension that has a significant effect on reducing the tendency of impulse buying among Generation Z online gamers. Additional research should assess the insignificant relationship between self-control and impulse buying, which may corroborate or contradict the research findings. Further investigation of potential intermediate variables (e.g., customer loyalty and brand relation) that connect self-control and impulse buying is also needed.

Keywords: self-control, shopping enjoyment, impulse buying, Generation Z, online gamers

INTRODUCTION

The Internet is currently one of the things that connects human life. According to the Digital 2023 Global Overview Report, there were 5.16 billion Internet users worldwide (equivalent to 64.4% of the total population), with spending time (in average) 6 hours and 37 minutes per day. Furthermore, of the 5.16 billion people, 92.3% of them accessed it through mobile device. In short, many Internet users demonstrate the ease of Internet access, with one using it for online gaming (Kemp, 2023).

In recent decades, online gaming has become one of the world's fastest-growing industries. Globally, 32.2% of people used the Internet for gaming as of January 2021, with 74.9% playing online games on smartphones, 44.4% on PCs (laptops or desktops), 25.1% on game consoles, and 19.6% on tablet devices (Kemp, 2021). With 52 million gamers, Indonesia ranks 17th in the world and the largest in Southeast Asia. According to Newzoo data, Indonesia earned USD1.74 billion (approximately Rp25.1 trillion) in 2020, an increase of 32.7% year on year (Kurniawan, 2021). Additionally, the top 10 popular mobile game applications in Indonesia based on monthly active users as of January 2021, sequentially, were Mobile Legends Bang Bang, Worm Zone IO, PUBG Mobile, Among Us, Hago, Free Fire, Call of Duty: Mobile, Minecraft Pocket Edition, Clash of Clans, and Candy Crush Saga (We Are Social & Hootsuit (2021) cited by Bayu, 2021).

According to Let's Play, Indonesia! report, 76%

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of respondents are heavy users of paid subscription services as esports viewers, and 69% are video gamers (Deloitte, 2023). The esports ecosystem encourages investment from many parties, both local and international. Sponsorship, ticket sales, and broadcasting rights also become sources of income not only for companies that are involved but also for the government. Despite its beneficial side, the existence of online games and esports can also cause negative effects on its users.

For example, in Mobile Legends Bang Bang game, players can obtain or purchase heroes based on their respective roles: assassin, marksman, fighter, tank, mage, and support. Furthermore, the hero is given a wide range of skins that can be purchased at any time or only during specific seasons. Virtual items are digital goods or services that can be traded or exchanged with real money. Virtual items in online games refer to virtual objects, such as character equipment (weapon or armor), skin, currency, tools, and monthly pass subscriptions. Most downloadable games employ a free-to-play model or adopt a "freemium" business model. In the "freemium" model, the value creation of augmenting products is created through interplay configuration between free core service and premium products within the game (Hamari et al., 2020). Thus, there will be certain conditions when the people who only use free services feel burdensome because of limitations in the in-game experience.

From those conditions, to reach enjoyment or achieve a certain goal, the players are willing to use their allowance to obtain these items, whether at high or low spending. In Japan, for example, junior high school students will spend money on in-game items that may be equal to or greater than their monthly allowance (Shinkawa et al., 2021). Adolescents also tend to spend more money to win 'rare' items with a low probability of being obtained. These 'rare' items are typically obtained using a loot box, a game reward system that can be purchased repeatedly to obtain a random selection of virtual items.

Based on the explanation, the research sheds light on the new questions of how self-control suppresses impulse buying among Generation Z online gamers and how it acts as a moderator that weakens the relationship between shopping enjoyment and impulse buying. That purchase activity is not merely because the players want to enhance their game performance, but it can be because of the social value that they will get. For gamers, their desire to be a part of a particular community will keep them playing the game (Ghazali et al., 2019). Through purchasing virtual items, the new users can socialize with other players. Meanwhile, for the returning users, they can interact with the virtual world (Wang et al., 2019). According to Hamari et al. (2020), social value has a positive effect on premium purchases. These social values can refer to social experience (i.e., they can play with other people) or show the self-extended version in the virtual world (i.e., perception of self-image, status symbols, or social standing in the game community). These in-game purchases can get worse if the players want to create a more unique version of themselves (Cai et al., 2019). In the end, this social value becomes the driver of utilitarian purchasing motivation among the players (Afif et al., 2022).

These situations can lead someone into impulse buying or unplanned buying behaviour. This impulsiveness happens when someone makes purchases on the spur of the moment without giving much thought to his/her needs or wants. Hence, that person does not conduct extensive research on the purchased product or service. This sudden unbearable desire usually cannot be resisted by the person because it can help the consumer to gain emotional and physical satisfaction (Ata & Sezer, 2021). According to Stern (1962), there are several distinct types of impulsive purchases. First, pure impulse buying means when a customer purchases on pure impulse, they do not budget for it at all. Second, in reminder impulse buying, consumers are reminded of their demands for a product. They are more likely to purchase it on the spur of the moment. It can be due to the influence of advertisements or word-of-mouth among consumers. Third, there is a suggestion of impulse buying. Consumers are prompted to make impulsive purchases due to the company's advertising. Last, planned impulse buying is when consumers' purchases are motivated by the product's price or brand name.

Furthermore, those who take pleasure in shopping are more likely to make impulse buying and experience positive emotional effects as a result of their purchases. Thus, this situation can relate further to the potentiality of shopping enjoyment. Shopping enjoyment is measured along three dimensions in the research, all of which are borrowed from the enjoyment dimension proposed by Lin et al. (2008): (1) participation in a task (when paying close attention to several different things at once, with a greater investment in each activity, resulted in greater satisfaction), (2) effects that are uplifting or positive, evidenced by a range of positive feelings such as pleasure, happiness, and satisfaction, and (3) fulfillment/sense of accomplishment relates to the satisfaction of a need, even if that need has never been met before. Previous studies have found that when people report high levels of shopping enjoyment, they are more likely to make impulsive purchases (Putra & Adam, 2020; Atulkar & Kesari, 2018). Hence, the first hypothesis is as follows.

H1: Shopping enjoyment affects impulse buying.

To suppress impulse buying, someone needs to have self-control. Self-control can be defined as the ability to regulate one's actions and suppress impulses or a person's ability to make the right decisions to avoid consumptive and impulsive attitudes. Self-control can also be understood as the capacity to regulate the temptation and discipline themselves not to buy items impulsively that are likely to be regretted

in the future (Moayery et al., 2019). Self-control is not only facilitated solely by the "willpower", but it entails the strategy (mental and behavioural strategies) that works best for certain individual at certain time. Mental strategies rely on changing the way people focusing on and mentally representing tempting stimuli. Meanwhile, behavioural strategies rely on manipulating or exploiting the trait of situation (Fujita et al., 2020). Those strategy considered as a key to enhancing self-control that assists people in resisting immediate temptation.

There are three aspects of Averill's self-control. First, behavioral control is the readiness to provide a response that can directly influence or modify an unpleasant situation. Second, cognitive control is an individual's ability to process unwanted information by interpreting, assessing, or connecting an event in a cognitive framework as a psychological adaptation or reducing stress. Third, decision control is a person's ability to choose an outcome or an action based on something she/he believes or agrees with (Ghufron & Suminta, 2010). Controlling one's impulses has been demonstrated to help cut down on unnecessary spending. In game online, if the player has good self-control, it is less likely they will impulsively make in-game purchases (Yanti et al., 2023). So, the following hypothesis is proposed.

H2: One's ability to exercise self-control affects one's propensity to buy on impulse.

Moreover, understanding the role of self-control is crucial to preventing harmful consequences (e.g., debt or addiction) from repeated indulgences (Laran, 2020). According to Gulfraz et al. (2022), Online Customers' Shopping Experience (OCSE) is proven to increase customers' online impulse buying. OCSE is formed by two components, namely psychological dimension (enjoyment, convenience, and trust) and functional dimension (interactivity, visual engagement, informativeness, navigation, and search). In that situation, the existence of self-control becomes crucial to prevent the stimuli of OCSE toward impulse buying. It is because customers with better self-control are more deliberate in their purchase activity, which makes them become less easily influenced by the stimuli from OCSE. Hence, the third hypothesis is as follows.

H3: One's ability to exert self-control in the face of temptation while shopping is related to one's level of enjoyment throughout the shopping experience.

METHODS

The research applies a quantitative approach to investigate the relationship between shopping enjoyment, self-control, and impulse buying. Along with the purpose of the research, people from Generation Z (born between 1997 and 2012) in Indonesia are approached. Generation Z should be the ones who actively play video games and buy in-game items. In the research, a research instrument (questionnaire) is developed to collect primary data. This questionnaire is online distributed. The questionnaire contains 22 questions representing three variables. The first variable, shopping enjoyment, has seven items that represent engagement (SE1 and SE2), positive effects (SE3 and SE4), and fulfillment (SE5, SE6, and SE7). Self-control is the second variable, with seven items representing behavior control (SC1, SC2, and SC3), cognitive control (SC4 and SC5), and decision control (SC6 and SC7). The third variable contains eight items representing pure impulse buying (IB1 and IB2), reminder impulse buying (IB3 and IB4), suggestion impulse buying (IB 5 and IB6), and planned impulse buying (IB7 and IB8). All items are graded on a Likert scale ranging from 1-strongly disagree to 6-strongly agree.

The questionnaire is completed by 273 people, but only 220 of them (127 male and 93 female) are used for further analysis. The other 53 respondents never purchase an in-game item, receive a free item, or are not born between 1997 and 2012. Then, SmartPLS version 3.0 is used to examine the data.

RESULTS AND DISCUSSIONS

The respondents' behavioral characteristics for online gaming can be seen in Table 1 (see Appendices). The gender distribution of the respondents is 57.73% males and 42.27% females. The female respondents mostly play online game if the game is fun. Slightly different with the female players, the male players do not only play a game because the game is fun. Another factor is that they can play it with their friend or not. Interestingly, most of respondents (both male and female) are college students that are mostly willing to spend their money for game up to Rp250,000 for one until two purchases per month. Then, most of them (89.55%) feel happy after spending their money for game.

The hypotheses are tested using the Partial Least Square (PLS) method based on Structural Equation Modelling (SEM). The analyses in PLS-SEM are classified into two types: measurement (outer) model assessment and structural (inner) model assessment. The indicator loading, reliability, and validity tests become the primary concern during the assessment of the outer model. For internal consistency reliability, the loading above 0.7 are recommended (but outer loading between 0.4-0.7 still acceptable with certain condition), and the value of composite reliability should be at leas at the range of 0.60-0.70 to considered as "acceptable" in exploratory research (Hair et al., 2011).

Meanwhile, the validity can be evaluated by looking at convergent and discriminant validity. The research determines convergent validity by observing the Average Variance Extracted (AVE) with

a minimum value of 0.5. In contrast, discriminant validity is determined by the Heterotrait-Monotrait correlation ratio (HTMT). However, before assessing the construct's reliability and validity, the outer loading of each item should be checked. The outer loading should be greater than 0.4 (Hair et al., 2011).

In the research, all items have outer loadings greater than 0.4. Meanwhile, because variable self-control has an AVE score of 0.459 (<0.5), the researchers eliminate the indicator with an outer loading of 0.4–0.7 to enhance the AVE score. At the end, the researchers only eliminate one indicator namely SC7 ("I have bought things I want but do not need, but only on occasion") because its outer loading value is only 0.578. The construct's AVE score exceeds the cutoff, following the elimination. Figure 1 (see Appendices) and Table 2 (see Appendices) show the outer loading detail for all items, as well as the score of convergent validity, composite reliability, and Cronbach's alpha for each construct.

According to Hair et al. (2019), HTMT is defined as the mean value of the item correlations across constructs relative to the (geometric) mean of the average correlations for the items measuring the same construct. Moreover, the threshold value of HTMT should be below 0.90 (Henseler et al., 2015). Based on those definition and rules, the result indicates that discriminant validity for all constructs has been established show in Table 3 (see Appendices).

The structural model is then evaluated, which includes R-square (R^2) and path coefficient evaluation. The value of R^2 ranges from 0 to 1. R^2 values of 0.75, 0.5, and 0.25 are considered significant, moderate, and weak, respectively (Hair et al., 2011). The results show that the adjusted R^2 from impulse buying is 0.339, putting it in the moderate category. Table 4 (see Appendices) shows the path coefficient assessment (hypotheses testing) result. The results of the hypotheses testing show that shopping enjoyment positively affects impulse buying (β: 0.581, $p<0.05$), indicating that H1 is supported. Meanwhile, the effect of self-control on impulse buying is shown to be negative (β = -0.004), but it is not significant ($p>0.05$), so H2 is not supported. In addition to these findings, H3, which examines the moderating effect of self-control on the relationship between shopping enjoyment and impulse buying, is not supported (β: 0.092, $p>0.05$).

The research demonstrates impulse purchases must be reined in. People with good self-control are more likely to save money, have better overall financial behavior, be less anxious about financial matters, and feel more secure about their current and future financial situation.

Unfortunately, not everyone has strong self-control. In this case, people with low self-control require greater financial literacy to affect their saving habits than those with high self-control. Generation Z is the first to have grown up with high technology, giving them unparalleled financial literacy because of their access to a wealth of information at their fingertips at any time and from any location. This information, combined with the rapid environmental change, forces them to comprehend and adapt to the situation. Regarding their financial competence and decision-making ability, Generation Z is considered the most self-sufficient generation yet (Uzelac & Lučić, 2020). However, this habit relies on financial education given by their parents, as found in the previous study (Antoni et al., 2019; LeBaron et al., 2020).

The financial behavior that is practiced by children when growing up is linked with financial education and monitoring from their parents during childhood. The most frequent topic discussed by parents with their children, according to Charles Schwab (2011), is the cost of college (65%), followed by smart money management (46%) and the economic recession (32%). However, these children see how to invest money (44%), establish good credit (42%), their career aspirations (34%), and budget money (33%) as topics they want to learn more about from their parents. Parental instruction is not the only factor that influences children's financial literacy. Other factors such as age, gender, and major of study also play a role in influencing their saving decisions later (Pangestu & Karnadi, 2020).

The preceding scenario explains why, in the research, self-control is unable to reduce impulse buying among Generation Z online gamers (H2 is rejected) and weaken the effect of shopping enjoyment toward impulse buying (H3 is rejected). In Indonesia, early adolescents may have low self-control while unaware of financial literacy. If they are already aware, they will know the importance of money management, how to spend it, and for what purposes. Without proper self-control, Generation Z will overspend and make unplanned purchases of video games. If they enjoy the process of in-game shopping to get the virtual item, the situation may worsen.

The existence of self-control becomes a solution to cope with impulse buying. However, self-control may fail to prevent someone's impulse buying due to goal conflict existence, lack of behavior monitoring, or absence of ability to change (Romagnoli, 2021). Thus, the "preparation" stage needs to be created. According to Sermboonsang et al. (2020), mindfulness or mindful consumption in boosting a person's self-control should be evaluated so they can overcome impulse buying and improve their decision-making skills (i.e., thinking consciously before buying). Another technique for reducing impulse buying is applying postponement activity. According to Moser (2020), the need for postponement in buying activity is emphasized, including two main forms: (1) long enough to provide enough time for natural distraction in cooling down the impulse to buy something, or (2) short but focusing on something distracting, but not distracted toward additional impulse purchases browsing activity.

Nevertheless, the research aims to investigate the specific component of self-control that may have a more pronounced interaction with shopping enjoyment

about impulsive buying among Generation Z gamers in Indonesia. The research seeks to highlight the distinctiveness of its approach compared to previous studies. Hence, the researchers utilize regression analysis to examine the three primary components of the self-control dimension, as defined by Fattah et al. in Ramadhani (2019), namely decision control, behavior control, and cognitive control. Table 5 (see Appendices) displays the outcome of a regression analysis, with impulse purchase as the dependent variable.

The significance of shopping enjoyment varies significantly at the 1% level in Model [1], [2], and [3]. In the regression analysis, only the cognitive control dimension (-0.3473; p-value 0.0979) is significant at the 10% level in Model [3]. It implies that a 1% rise in cognitive control leads to a reduction in Generation Z gamer's impulse buying tendency by more than 30% (34.73%). Constants play an essential part in all models, with the most significant level of sensitivity found in Model [3] at a significance level of 10% (5.0154; p-value 0.0784).

CONCLUSIONS

The purpose of the research is to look into the reasons for impulsive purchases made by Generation Z gamers in Indonesia, with a focus on three distinct phenomena: (1) the effect of shopping pleasure on impulsive purchases; (2) the role of self-control in avoiding unplanned purchases; and (3) the moderating effect of self-control in the relationship between shopping pleasure and impulsive purchases. The research findings confirm the presence of a relationship between the effect of shopping pleasure and impulsive purchasing. However, among the three dimensions of self-control, cognitive control is the only dimension that can lead to impulse buying reduction among Generation Z gamers. This situation implies that the rules set by Generation Z gamers to limit their spending become the best barrier to prevent unwanted or sudden buying. Based on that condition, self-control demonstrates a slightly weak influence in how it affects the relations between shopping enjoyment and impulse buying, resulting in a failed effort to support the existence of a relationship between the role of self-control in managing Generation Z gamers' tendency to make impulsive purchases.

The research findings may be related to Generation Z's economic behavior, which differs significantly from the preceding generations. For example, Generation Z frequently prioritizes spending on consumable items, such as food, entertainment, and video games. However, through self-control, it is believed that Generation Z, highly tech-savvy and exposed to a wide range of information, including financial and economic topics, will be more financially aware of the significance of managing their expenditures.

Unfortunately, the research demonstrates the opposite, shedding light on the self-control of Generation Z even though they may be anticipated to be financially knowledgeable. Nonetheless, it does not discourage their impulsiveness from purchasing desired products, particularly those they enjoy. In the meantime, the research suggests that the gaming industry can develop a perfect plan to attract the impulse buying tendency of Generation Z gamers by adding more factors that may increase their enjoyment of shopping. These determinant factors include a top promotional strategy, simpler access to payment methods, premium products, and others.

Furthermore, for theoretical implications, the research contributes to the body of knowledge in the field of consumer behavior, particularly the concept of impulse buying within Generation Z. The research also points out the economic behaviorism that is specifically adopted by Generation Z, who tends to be more impulsive and somewhat distinct than their predecessors (Generation X, Generation Y, and Baby Boomers). Finally, the research contributes to the behavioral theory of Generation Z, who has a specific tendency to be prone to modern influence with their eagerness to embed the concept of tech-savvy within their everyday lives on an extensive basis, compared to their predecessors (Generation X, Generation Y, and Baby Boomers). Thus, they are vulnerable to several varieties of digital technology risks that may circulate and threaten individuals.

Meanwhile, for practical implications, the research highlights different viewpoints that may assist online game industries with information on how to enhance the impulse buying of virtual goods, particularly pertinent to the Generation Z clientele. The gaming industries may explore these opportunities by using a number of methods while taking into consideration the impact of different cultural settings on Generation Z as a means of increasing impulse buying to penetrate further into the gaming market, such as the shopping enjoyment strategy.

Although the research findings are encouraging, they have several limitations. First, the disparity in datasets between female and male participants is quite apparent (the number of females is 93, whereas male participants are 127). The delta variations are indeed quite significant (36.5%). So, several variations should be addressed further in the subsequent study. Second, the participants vary widely (particularly among university college students, fresh graduates, and working employees). Therefore, these high disbalance rates between participant samples that serve as limitations should be addressed in future research. Third, the research findings strongly suggest that the level of enjoyment influences impulsive purchases. However, it does not prove the influence of enjoyment in the shopping experience on one's ability to exercise self-control with one's propensity to buy on impulse. The lack of insignificant relationships between self-control and impulse buying in Generation Z is quite significant. Last, even throughout the mediation of shopping experiences, the evidence is still lacking

in number. In addition, this situation paves the way for investigating yet another intermediation variable between self-control and impulse buying distinct from customer experiences. Some examples of such variables include customer loyalty and brand relations. As a result, based on the above description, additional studies should assess the insignificant relationship between those variables, which may corroborate or contradict the research findings.

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APPENDICES

Table 1 Respondents' Behavioural Characteristics for Online Gaming

	Male	Female	Total
	(N = 127)	(N = 93)	(N = 220)
	N (%)	N (%)	N (%)
Occupation Status			
Elementary/middle/high school student	20 (15.75%)	19 (20.4%)	39 (17.72%)
College student	101 (79.53%)	72 (77.4%)	173 (78.64%)
Fresh graduate	2 (1.57%)	0 (0.0%)	2 (0.91%)
Working	4 (3.15%)	2 (2.2%)	6 (2.73%)
Buying Frequency on Online Game/Month in Average			
1–2 times	76 (59.84%)	67 (72.0%)	143 (65%)
3–5 times	31 (24.41%)	17 (18.3%)	48 (21.82%)
6–10 times	5 (3.94%)	5 (5.4%)	10 (4.54%)
> 10 times	15 (11.81%)	4 (4.3%)	19 (8.64%)
Money Spent for Online Game/Month (Rp) in Average			
< 250,000	92 (72.44%)	73 (78.5%)	165 (75%)
250,000–500,000	26 (20.47%)	17 (18.3%)	43 (19.55%)
> 500,000	9 (7.09%)	3 (3.2%)	12 (5.45%)
Reason for Gaming Online			
Fun game	51 (40.2%)	39 (41.94%)	90 (40.91%)
A game that can be played with a friend	53 (41.7%)	29 (31.18%)	82 (37.27%)
The characters in the game	10 (7.9%)	14 (15.05%)	24 (10.91%)
The type of the game	5 (3.9%)	0 (0.0%)	5 (2.27%)
Hit game	3 (2.4%)	6 (6.45%)	9 (4.09%)
The game that sells many items	2 (1.5%)	3 (3.22%)	5 (2.27%)
Having spare time	2 (1.6%)	1 (1.08%)	3 (1.37%)
Maintaining the ranking	1 (0.8%)	1 (1.08%)	2 (0.91%)
Feeling After Buying in Online Game			
Positive feeling	111 (87.40%)	86 (92.47%)	197 (89.55%)
Negative feeling	10 (7.88%)	3 (3.23%)	13 (5.91%)
Mixed feeling	3 (2.36%)	2 (2.15%)	5 (2.27%)
Neutral	3 (2.36%)	2 (2.15%)	5 (2.27%)

Table 2 The Results of Convergent Validity, Composite Reliability, and Cronbach's Alpha for Each Construct

Notation	Question	Outer Loading
Shopping Enjoyment (AVE= 0.538; CR=0.890; Cronbach's Alpha= 0.856)		
SE1	I feel happy when browsing purchase pages in an online game	0.798
SE2	When I visit the purchase page of an online game, my attention focuses on the purchase page	0.746
SE3	I feel satisfied when I can buy items in online games	0.765
SE4	I feel happy when I can buy items in online games	0.765
SE5	Purchasing items in online games is a form of fulfillment of needs	0.671
SE6	Purchasing items in online games is a form of fulfillment of desires	0.700
SE7	Purchasing items in online games is a form of self-respect	0.679
Self-Control (AVE= 0.535; CR=0.872; Cronbach's Alpha= 0.834)		
SC1	In everyday life, I always make a shopping list	0.814
SC2	In everyday life, I always make a record of expenses	0.787
SC3	In everyday life, I always make a shopping schedule	0.855
SC4	In my daily life, I have a limit on money spent on shopping	0.619
SC5	I always obey the rules of the limit on spending money that I have set	0.659
SC6	I always buy only what I need	0.618
Impulse Buying (AVE= 0.585; CR=0.918; Cronbach's Alpha= 0.898)		
IB1	I often make purchases of items in online games spontaneously/ impulsively because of a sudden urge to buy	0.802
IB2	I often make purchases of items in online games spontaneously/ impulsively without any special reason	0.695
IB3	I often make purchases of items in online games spontaneously/ impulsively because I see advertisements	0.729
IB4	I often make purchases of items in online games spontaneously/impulsively because I remember other people's recommendations	0.800
IB5	I often make purchases spontaneously/impulsively when I see a newly offered item	0.828
IB6	I often make purchases spontaneously/impulsively when I see a special item (has a purchase time limit) offered	0.789
IB7	I often make spontaneous/impulsive purchases in online games because of the special prices offered	0.719
IB8	I often make purchases of items in online games spontaneously/ impulsively because of the special coupons offered	0.746

Table 3 The Results of Discriminant Validity

Heterotrait-Monotrait (HTMT)				
	IB	**SC**	**ME**	**SE**
IB				
SC	0.207			
ME	0.119	0.147		
SE	0.658	0.420	0.060	

Note: Shopping Enjoyment (SC), Self-Control (SC), Moderating Effect (ME), and Impulse Buying (IB).

Table 4 Partial Least Square-Structural Equation Modelling (PLS-SEM) Results (Hypotheses Test)

Relationship	Path Coefficient	STDEV	T-Value	P-Values	Result
Shopping enjoyment → Impulse buying	0.581	0.063	9.274	0.000	H1 is accepted
Self-control → Impulse buying	-0.004	0.061	0.069	0.945	H2 is not accepted
Moderating effect → Impulse buying	0.092	0.058	1.584	0.113	H3 is not accepted

Table 5 Regression Results

Variable(s)	[1]	[2]	[3]
DV: Impulse Buying			
Shopping Enjoyment	0.8409***	0.8794***	0.9149***
	(0.0000)	(0.0000)	(0.0000)
Self-Control - Decision	0.0055		
	(0.6645)		
Self-Control - Behavior		-0.0172	
		(0.8912)	
Self-Control - Cognitive			-0.3473*
			(0.0979)
Cons.	3.5916	3.3352	5.0154*
	(0.2006)	(0.2245)	(0.0784)
Number of observation(s)	220	220	220
F-stat.	55	55	57
Prob > chi2	0.0000	0.0000	0.0000
R-square	0.3381	0.3376	0.3459
Adjusted R-square	0.3320	0.3315	0.3398

Notes. * p < 0.1; ** p < 0.05; and *** p < 0.01.

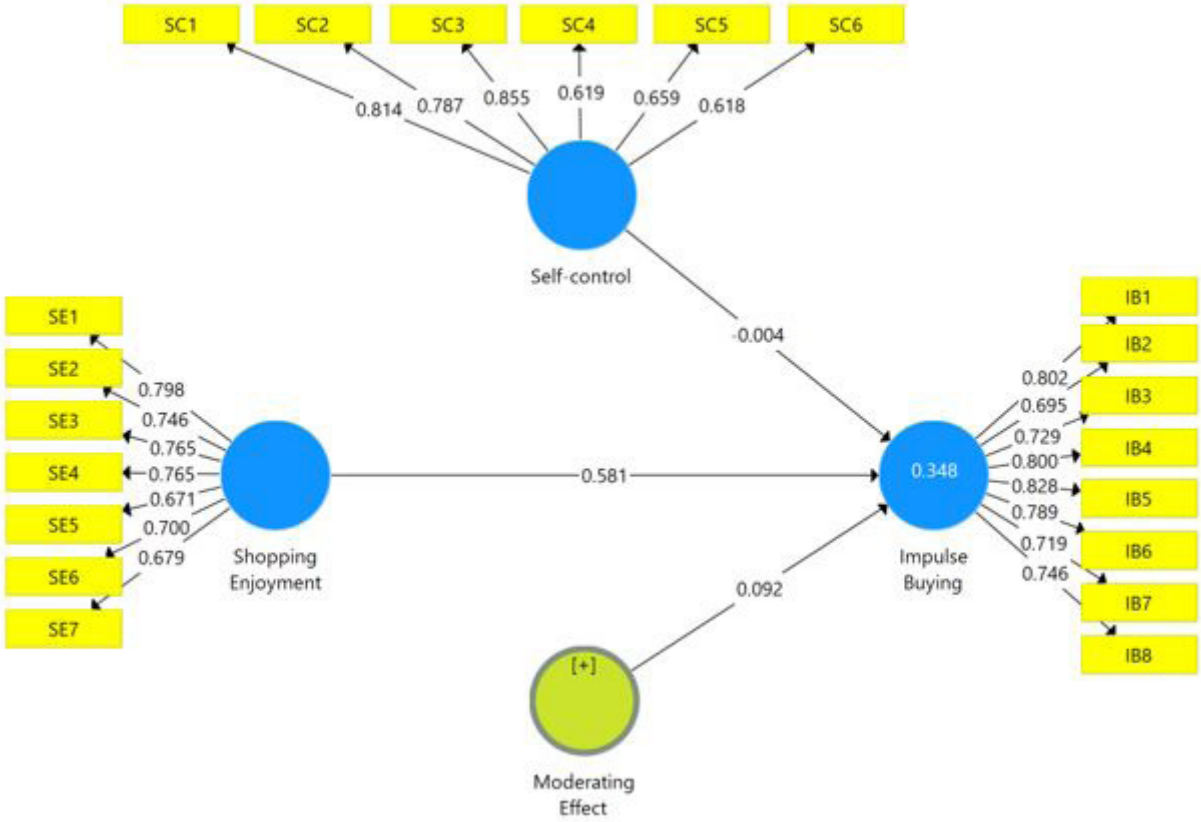

Figure 1 Partial Least Square (PLS) Algorithm Results