

# The Role of Threshold of Free Shipping Promotion and Product Type on Impulsive Buying Behaviour in E-Commerce Platform

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**Abstract** - The research proposed new insight on how the threshold of free shipping (TFS) promotion type and product type could affect consumers to buy impulsively through emotional consumer reaction of hedonic motivation and positive affect, using the S-O-R model. The data was analyzed using 188 responses who had completed questionnaires. Data was collected using the purposive sampling method with a minimum sample size of 138 from GPower calculation. The research uses ANOVA and Regression Analysis to assess the model and utilizes SPSS. The result clearly illustrates that the maximum threshold of free shipping type with the hedonic product would lead more to consumer hedonic motivation. At the same time, the minimum threshold of free shipping type will induce too when combined with utilitarian products. Furthermore, consumer feelings of hedonic motivation and positive affect play an essential role in determining consumers' impulsive buying behavior. The research would benefit stakeholders in using and maximizing the free shipping promotion program.

**Keywords:** threshold of free shipping, hedonic shopping motivation, positive affect, impulsive buying behavior, experimental research

## I. INTRODUCTION

Nowadays, e-commerce offers organizations an easier reach for customers than consumer exposure to the business, which is more achievable by reducing administrative costs, travel costs, and business process cycle times (Xing, 2018). Especially in the COVID-19 outbreak, consumer preference toward online shopping has increased since closed brick-and-mortar shops. The Asia Pacific dominated the market

for e-commerce with a share of 55,3% in 2019 and is expected to witness the fastest growth compared to other regions from 2020 to 2027 (Grand View Research, 2020). E-commerce in Indonesia is growing with increasing active buyers through the Internet. It is forecasted to add 60 million new e-commerce users between 2020 and 2024, from almost 130 million users in 2020 to approximately 190 million users in 2024 ("Number of e-commerce", 2020). There are five most popular e-commerce in Indonesia including, Tokopedia, Shopee, Lazada, Bukalapak, and OLX in 2021. Each e-commerce has a significant proportion of the market share in Indonesia ("Top sites ranking", 2021). Specifically, Shopee is one of the e-commerce platforms of the latest development in the digital business, with an average of 137 million visitors in late 2021. This platform is one of the most popular pioneers in conducting free shipping promotions in Indonesia.

Fortunately, in the competitive business environment, consumer impulse buying has become an important source of revenue for online retailers. According to Amos, Holmes, and Keneson (2014), depending on product category, a study shows that products bought on impulse could account for 40% - 80% of purchases. Moreover, research suggests that the ease of searching and buying online, along with the lack of social pressures and absence of delivery efforts, could increase consumers' tendencies to act impulsively (Chan, Cheung, & Lee, 2017; Wu et al., 2020). In the process of impulse buying, this behavior often arises from high positive emotions. According to Chan, Cheung, and Lee (2017), consumers often experience positive emotional reactions in the process of impulse buying while reducing reactions when processing cognitive information. Research on impulsive buying has attracted much research interest over the years

because of its prevalence and complexity (Chan et al., 2017). However, according to Amos et al. (2014), there is no clear theoretical framework explaining impulse buying as further research is still called for. Furthermore, in this competitive era, understanding impulsive buying behavior is particularly important for business purposes, especially for e-commerce. This is because impulsive buying on internet shoppers is relatively more inclined than in offline retailing (Wu et al., 2020).

Impulse buying is often defined as an unplanned purchase and taking ownership of the product—goods or services—without any deeper thinking (Wu, Chiu, & Chen, 2020). Today, marketers must know consumers' need and want because they can change easily. Some studies found that several factors, including sales promotion, can trigger consumer impulsive buying behavior. Some sales promotion indicators can affect impulsive buying, for instance price discount and bonus pack (Xu & Huang, 2014). Meanwhile, Dawson and Kim (2010) categorizes free shipping as a promotion category. Besides, Iyer et al. (2020) reveal that promotion as the marketing stimuli affects impulsive buying behavior through the positive mood of consumer reaction.

Interestingly, free shipping in e-commerce to attract consumers' online buying decisions is important. According to Saleh (2021), 9 out of 10 consumers prefer online shopping with free shipping, while the sellers reveal that the orders increased by 30% with free shipping offers. However, in general, TFS is set in e-commerce to attract and retain the consumer (Huang, Shen, & Liang, 2019). More than half, or 58% of consumers, add more items to the cart to qualify for free shipping (Saleh, 2021). In addition, the purchase decision in e-commerce is mostly affected by the free shipping policy. In France, almost three-fourths of shoppers note that free shipping considerably impacts purchase decisions, followed by the US, in which 72% of consumers feel the same in 2019 (Koch, 2019).

The characteristic of customer behavior in online marketing is different from offline marketing since they search for low-cost alternatives. Hence, the issue of customer behavior in online shopping is more difficult than in offline one. Besides, the e-commerce company must set a more attractive attribute to get and maintain their consumer. Chan, Cheung, and Lee (2017) reveal that impulse buying is one of the effective ways of selling products that can be affected by both internal and external stimuli, including promotions like free shipping, etc. Therefore, offering free shipping promotions could affect consumer buying behavior in e-commerce. However, the effectiveness of threshold of free shipping (TFS) in e-commerce remains unclear. In addition, the role of hedonic motivation and positive affect could also influence impulse buying behavior through its promotion. Although adequate works of literature explain the purchase buying behavior of consumers in e-commerce. However, there is only limited research examining the relationship between threshold of free shipping promotion on e-commerce

impulsive buying behavior. The research aims to explore the impact of the threshold of free shipping type and product type on consumer hedonic motivation and positive affect, which then affects consumer impulsive buying behavior by adopting the S-O-R model in the e-commerce context (Shopee Consumer). The S-O-R model is used to see consumer reactions and responses from the threshold of free shipping type and product type stimulus in the experiment.

The application of the S-O-R model in consumer behavior research has become prominent. Chan, Cheung and Lee (2017) explain that the S-O-R framework is the popular theoretical approach to studying impulse buying behavior by examining the relationship between the environmental cue, consumer cognitive and affective reactions, and the resulting behavior. For example, the S-O-R model has been applied in research on impulse buying behavior by Chen and Yao (2018). The research finds that discounted price is an important precursor (stimulus) of personality factors, consisting of positive affect (organism), which in turn are the determinant of impulse buying (response) in the mobile auction.

According to Dawson and Kim (2010), free shipping or shipping discount is one of the sales promotion tools in marketing tactics or external cues, while sales promotion was the main factor affecting online impulse shoppers. Promotion is considered as marketing stimuli used by marketers to attract consumers to purchase (Chan et al., 2017). Thus, many retailers use this method to increase their sales and reduce inventory respectively (Xu & Huang, 2014). One of the common methods for sales promotion used by online retailers recently is the threshold of free shipping promotion. It is an effective way to attract consumers because, for example, consumers are generally objected to paying a delivery surcharge with an extra payment with a shipping fee. In contrast, by the threshold of free shipping promotion, consumers' sacrifice of spending money is decreased. Menon and Sigurdsson (2016) show that shipping fees, price, and guarantees are the most important stimulus for the consumer in an online shopping environment.

Furthermore, Iyer et al. (2020) show that marketing stimuli of advertising and promotion positively affect consumers' positive moods instead of negative ones. Meanwhile, in the offline environment, sales promotion becomes the factor for consumer hedonic shopping motivation (Mamuaya & Pandowo, 2018). However, the impact of specific marketing stimuli of the threshold of free shipping promotion have not been examined on consumer reaction of positive affect and hedonic shopping motivation particularly. Although consumers' preference to buy online is higher in the digital era, they are vulnerable to being attracted to buy impulsively. Hence, the hypothesis is formulated:

H<sub>1</sub>: The threshold of free shipping promotion will influence consumer hedonic motivation and positive affect.

According to Zhu and Lin (2019), from its perspective, the product type is divided into utilitarian and hedonic. A utilitarian product stresses utility, function, and performance to assist people in achieving their objectives and completing their responsibilities. Examples of utilitarian products are computers, microwave ovens, electric fans and razors, as these products are emphasized in those criteria. Moreover, People can get emotional and sensory pleasure from hedonic items, emphasizing experience, pleasure, stimulation, and self-expression like fashion, cosmetics, and watches. Research regarding the impact of product type on consumer hedonic motivation and positive affect is considered limited.

In contrast, some research have found that the product type significantly influences referral likelihood (Zhu & Lin, 2019) and purchase intention (Loebnitz & Grunert, 2018), etc. It is expected the product type of utilitarian and hedonic to influence consumer feelings. Hence, the hypothesis arises.

H<sub>2</sub>: Product type will influence consumer hedonic motivation and positive affect.

The research also predicts the impact of the threshold of free shipping promotion on consumer reaction of hedonic motivation and positive affect depending on product type, whether the product is hedonic or utilitarian. Zhao & Liang (2019) reveal that the product type could affect consumer impulsive buying behavior. The research shows that low involvement product would lead to a higher impulsive response than the high involvement product. In addition, to create impulsive behavior online, the promotional offer of discount price is more effective when the product type is utilitarian, while the hedonic product is more attractive using a bonus pack (Xu & Huang, 2014). Meanwhile, in this study, we expect that maximum TFS would be more effective for the utilitarian product while minimum TFS would be attractive for the hedonic product in gaining consumers' good feeling. Thus we propose the following hypothesis:

H<sub>3a</sub>: Free shipping promotion with minimum TFS will trigger a greater hedonic motivation to purchase when the product type is hedonic, whereas free shipping promotion with maximum TFS will trigger a greater hedonic motivation to purchase when the product type is utilitarian.

H<sub>3b</sub>: Free shipping promotion with minimum TFS will trigger a greater positive affect while purchasing when the product type is utilitarian, whereas free shipping promotion with maximum TFS will trigger a greater positive affect while purchasing when the product type is hedonic.

In the shopping environment, consumers commonly purchase products or services based on their motivation, which can be divided into two: 1)

utilitarian motivation and 2) hedonic motivation. The utilitarian motivation is based on the need and benefit of the product, while hedonic shopping motivation is based on pleasure. (Mamuaya & Pandowo, 2018). Iyer et al. (2020) assert that consumers with high hedonic motivation are more likely to experience positive feelings, while consumers with utilitarian motivation feel differently. Consumers with high hedonic motivation would perceive emotional gratification, reward, and compensation when buying products or services (Iyer et al., 2020). According to Widagdo and Roz (2021), hedonic shopping motivation is a person's urge to purchase to satisfy psychological demands such as emotion, satisfaction, prestige, and other subjective emotions. A person with this personality is more likely to seek enjoyment for himself or herself. In addition, Iyer et al. (2020) state that hedonic shopping motivation is an affective gratification derived from the sensory of a product or service and leads to consumer reaction of positive affect while shopping. Hence, the research suggests that consumer hedonic motivation would enhance their positive affect during the shopping trip, hence the hypothesis arises:

H<sub>4</sub>: Consumer hedonic motivation from e-commerce platforms significantly influences consumer positive affect while purchasing.

According to Mamuaya and Pandowo (2018), sales promotion is external stimulation used to offer incentives to consumers. It would encourage consumers to purchase and fulfill their feelings and satisfaction. Meanwhile, the hedonic value reflects the emotional feeling. Prior research has proved that hedonic shopping motivation is predicted by sales promotion and store atmosphere in the offline situation, while this relates to the impulsive buying behavior of supermarket consumers in Manado (Mamuaya & Pandowo, 2018). In addition, the affective reaction of hedonic browsing motivation mediates the effect of sales promotion and impulsive buying behavior in online retailers (Kimiagari, Sharifi, & Malafe, 2021). Furthermore, in the shopping website, Park et al. (2012), Lim, Lee, and Kim (2017), and Zheng et al. (2019) find that hedonic motives have considerable effects on consumer impulse buying behavior. Hence by the previous researches, the hypothesis emerges:

H<sub>5</sub>: Consumer hedonic motivation from e-commerce platforms significantly influences consumers' impulsive buying behavior.

Positive affect refers to the extent to which a person feels enthusiastic, excited, and inspired (Bellini, Cardinali, & Grandi, 2017; Verhagen & van Dolen, 2011), happiness, excitement, pride, pleasure, arousal, joy, and glee (Iyer et al., 2020). Conversely, negative affect is defined as the extent to which a person feels distressed, irritated, and disturbed, including anger and guilt (Verhagen & van Dolen, 2011). The literature has proven the positive direct impact of posi-

tive mood on consumers' impulsive buying. It is found that both positive affect and negative affect influence impulse buying behavior (Amos et al., 2014), and positive affect would lead to impulsive buying more than negative affect (Iyer et al., 2020). However, time pressure could reduce impulsive buying behavior, while time availability could enhance it (Gogoi & Shillong, 2020). In the context of mobile auction, Chen and Yao (2018) find that positive affect is a key determinant of impulse buying behavior. Meanwhile, in the offline environment, several research have found the effect of positive affect toward consumers' impulsive buying behavior during cruise trip (Ahn & Kwon, 2020), and supermarket shopping (Bandyopadhyay et al., 2021). Hence, it is suggested that the positive affect of consumer reaction to the online shopping trip would enhance consumer impulsive buying behavior, hence the hypothesis arises:

H<sub>6</sub>: Affective reaction of positive affect from e-commerce platform significantly influences the consumer response to impulsive buying.

Consumers of Shopee e-commerce media is chosen since the platform is well known for its free shipping promotion. It also provides uniqueness compared to its competitor in the same field. The prompted researchers aim to investigate the role of the free shipping threshold and product type in improving consumer impulsive purchase behavior. Therefore, the current research aims to explore further and find the research gap in the literature by developing conceptual models of the threshold of free shipping, product type, hedonic motivation, positive affect, and impulsive buying behavior.

The adoption of the S-O-R model in the research is expected to predict consumer reaction to impulsive buying behavior through experimentation with the threshold of free shipping type and product type, and provide deeper information about this behavior for users and regulators in the e-commerce platform. The research hypothesis is depicted in Figure 1.

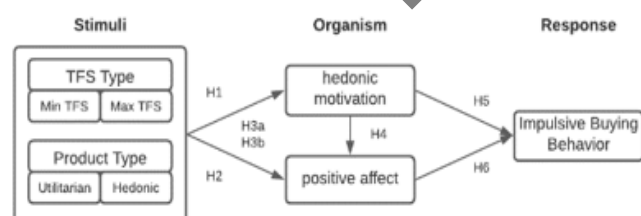


Figure 1 Proposed Conceptual Framework

## II. METHODS

The unit of analysis is the customers of the top online shop markets in Indonesia based on total clicks, namely Shopee (Plecher, 2020). Consumers of this most popular marketplace may represent significantly of the entire online marketplace in Indonesia since it

is the market leader and prominent for free shipping promotion program. The research used experiment technique of quantitative method for data collection. Primary data are gathered directly in the form of responses from the administration of questionnaires of experimentation (Mahmoud, Hinson, & Adika, 2018), and the secondary data comes from scientific publications such as research reports and a research journal.

The research collects the data twice for pre-test and hypothesis testing using the purposive sampling method. In the pre-test for getting the threshold of free shipping promotion and particular product type, the research is required to get 30-50 respondents. Meanwhile, the criteria for the selected respondent are those who have purchased in selected e-commerce minimally once in a year. Furthermore, for the hypothesis testing, based on the calculation of GPower with the value of 0,05 and the effect size of 0,355 derived from the regression analysis, the research requires at least 138 samples in total or 35 responses for every scenario. The subjects are recruited from invitational email and social media broadcasts.

The research is designed to examine the effect of threshold free shipping types – (minimum TFS vs. maximum TFS) and product types (hedonic vs. utilitarian) in between-subject design – on consumer hedonic motivation and positive affect and to test the nomological network among those two variables and impulsive buying behavior. Data are analyzed using ANOVA and Regression Analysis. To test the research model and hypothesis, four experiment scenarios with each manipulated condition are conducted. The research aims to establish how multi categorical variables of the threshold of free shipping type and product type influence consumer hedonic motivation and positive affect on consumer response to impulsive buying behavior.

Firstly, the research conducts a pre-test for categorizing particular products type and whether the products are utilitarian or hedonic. Secondly, for determining the free shipping threshold, a second pre-test is conducted to predict or determine the threshold of free shipping at maximum and minimum levels concerning the specific e-commerce depicted in further studies. Thirdly, formal experiments and hypothesis testing are conducted to answer the research question.

In the first pre-test, based on the previous literature, eight products are measured by its attribute and attractiveness to define product type, whether it is utilitarian or hedonic. The products are mobile phones, digital cameras, computers, USB flash disks, backpacks, stationery, chocolate, toothpaste, perfume, and watches (Zhu & Lin, 2019). The respondents are asked to assess the product type (hedonic or utilitarian) and attractiveness on a six-point scale based on their true feelings. The product with a score higher than four is regarded as a hedonic product, while the utilitarian product is categorized with a score of less than three (Zhu & Lin, 2019). This pilot is delivered to roughly 30 - 50 respondents.

The second pre-test is conducted to measure the threshold of free shipping (TFS) level. It is the amount that consumers need to spend to obtain free shipping. Online retailers frequently have difficulty determining what the minimum level should be when it comes to TFS policies. Therefore, the pre-test is conducted to gain the appropriate amount perceived by the consumer based on their experience in online shopping. The research proposes at roughly 30-50 respondents through the online panel, via social media and email, asking their preference of free shipping amount to determine the minimum and maximum free shipping threshold for e-commerce based on total product purchased (rupiah based) for the requirement.

In the formal experiment, each participant is exposed to one experimental condition from four different scenarios of between-subjects full factorial design, which are two thresholds of free shipping types (minimum TFS vs. maximum TFS) and two product types (utilitarian vs. hedonic), as seen in Table 1. The experiment also examines how the manipulations influence consumer hedonic motivation and positive affect while visiting the online shop. The research conducts an attention and manipulation check to examine whether subjects correctly pay attention to the scenario and recognize the product type on the web page. The further incorrect answer in the manipulation and attention check are not analyzed. Furthermore, participants proceed to an online questionnaire by completing 26-item for positive affect, hedonic motivation, and impulsive buying (see Table 2). The questionnaire indicators of each variable are adopted

from previous literature that had proven its validity and reliability. The measurement of the constructs is based on seven-point Likert scales ranging from 1 (very unlikely/very disagree) to 7 (very likely/very agree).

Table 1 Experimental Condition

No	Product Type	Threshold Free Shipping Type
1	Utilitarian	Minimum TFS
2	Utilitarian	Maximum TFS
3	Hedonic	Minimum TFS
4	Hedonic	Maximum TFS

The data are analyzed using IBM SPSS Statistics 22.0 (IBM Corporation, Armonk, NY, USA). Subjects' general characteristics and dependent variables are analyzed using descriptive statistics. Furthermore, Confirmatory Factor Analysis (CFA) is conducted by confirming its convergent and discriminant validity and composite reliability to develop and help validate the measurement of the construct, as this method is generally used for social science (Jian, Yin, & Awang, 2020). Data from the field study is used to perform the CFA procedure. The research then analyzes the effect of the threshold of free shipping promotion type and product type on hedonic motivation and positive affect by using Analysis of Variance (ANOVA) with repeated measures. Finally, a regression analysis is conducted to examine the relationship between hedonic motivation, positive affect, and impulsive buying behavior.

Table 2 Measurement Scale

Variable	Codes	Statements
Hedonic Motivation (Park et al., 2012; Salimon, bin Yusoff, & Mohd Mokhtar, 2017)	HM1	When I saw this exciting free shipping promotion, I was excited to find items in this online shop.
	HM2	When I see this awesome free shipping promotion, I can forget of time.
	HM3	When I saw this exciting promotion for free shipping, I enjoyed visiting this online shop even more.
	HM4	When I saw this exciting free shipping promotion, I felt calmer and didn't hesitate to shop at this online shop.
	HM5	When I saw this exciting free shipping promotion, I had a lot of fun using this online store application.
	HM6	The features of the online shop application are very entertaining.
	HM7	My mind is always aroused when using online store applications.
	HM8	I browse items on the Internet just for fun.
	HM9	Free shipping promotions often stimulate my curiosity on online store applications.
Positive Affect (Iyer et al., 2020; Park et al., 2019)	PA1	While shopping at this online shop, I feel happy on this trip.
	PA2	While shopping at this online shop, I feel happy with the promotions offered.
	PA3	While shopping at this online shop, I feel enthusiastic about the promotions offered.
	PA4	While shopping at this online shop, I feel happy with the promotions offered.

Table 2 Measurement Scale (Continued)

Variable	Codes	Statements
Impulsive Buying Behavior (Lim et al., 2017; Verhagen & van Do- len, 2011)	PA5	While shopping at this online shop, I feel happy visiting this online shop.
	PA6	While shopping at this online shop, I feel comfortable.
	PA7	While shopping at this online shop, I feel at peace.
	PA8	While shopping at this online shop, I feel full of promotional surprises.
	PA9	While shopping at this online shop, I feel proud to shop at this online shop.
	IB1	When I use mobile e-commerce, I buy things that I had not intended to purchase.
	IB2	I can't resist buying merchandise if I really like it.
	IB3	If I see a free shipping promotion, I tend to buy impulsively.
	IB4	I buy things according to how I feel at the moment.
	IB5	I spent more money to buy the merchandise than I expected.
	IB6	I tend to buy things in online shops unconsciously.
	IB7	It's okay to buy goods at the online shop even if it doesn't go according to plan when there is this promotion.
	IB8	I do not hesitate to shop at this online shop.

### III. RESULTS AND DISCUSSIONS

In the first pre-test, 46 people participate in the survey to categorize product types. The result showed that camera, perfume, watches and chocolate were regarded as hedonic products while toothpaste, handphone, computers, stationery, flash disk, and toothpaste were utilitarian products. Finally, pre-test 1 selects chocolate as a hedonic product (mean = 4,73, standard deviation = 1,62 ) and flashdisk as a utilitarian product (mean = 2,39, standard deviation = 1,43). A t-test, conducted in the research to measure its differentiation, shows significant difference in attractiveness between them ( $M_{Chocolate} = 4,73$ ,  $M_{flashdisk} = 2,39$ ,  $t = -7,339$ ,  $df = 90$ ,  $p < 0,05$ ).

The second pre-test is conducted to determine the free shipping threshold amounts. The total respondent in this pre-test is 46 people. They are asked specifically about their preference for appropriate free shipping threshold in minimum and maximum limits. The mean value from their answer is used to determine the minimum and maximum thresholds for free shipping promotion in Shopee. The pre-study resulted that the mean for minimum TFS is Rp 25.000 (from Rp 23.696) with a free shipping discount of Rp 15.000 (from Rp 15.109). Meanwhile, the mean for maximum TFS is Rp 100.000 (from Rp 99.348) with the free shipping discount of Rp 25.000 (from Rp 25.870). The result from the pre-tests is used to manipulate the formal experiment to test the hypothesis.

In the formal experimentation, 188 data from 220 responses can be used in the collection data process for the next analysis. Table 3 shows the demographic information of the participants. Each participant is presented with one condition of scenario that includes the description of product type and threshold of free shipping type with a brief image before proceeding to

the questionnaire. The research designs each scenario differently in terms of product type and threshold free shipping type as the research conducts four different scenarios in the experimentation. Table 4 describes the summary statistics of the experimental design for each scenario.

Hypothesis testing begins by conducting Confirmatory Factor Analysis (CFA) to measure three dependent variables with 26 items adopted from previous studies. Initially, the CFA test result indicates some items with factor loading  $< 0,5$  that has to be removed, including; (HM2, HM8, HM6, HM7, HM9, PA2, PA3, PA9, IBB4 and IBB8). Afterward, the result of the CFA test confirms that the items are grouped into three factors with four items for hedonic motivation and six items for each other variable (Table 5 & Table 6). The test results show that all construct has high degree of reliability and validity (all factor loading  $> 0,5$ ; Cronbach's Alpha  $> 0,800$ ; Composite Reliability (CR)  $> 0,70$ ; and Average Variance Extracted (AVE)  $> 0,50$ ).

The research continues to analyze the effect of product type and TFS type on hedonic motivation and positive affect (see Table 7). The ANOVA test was carried out and found that TFS type did not have a direct impact on both positive affect ( $F = 0,395$ ,  $p > 0,05$ ) and hedonic motivation ( $F = 0,097$ ,  $p > 0,05$ ); hence the  $H_1$  is rejected. Meanwhile, the finding contradicts with previous studies (Iyer et al., 2020; Mamuaya & Pandowo, 2018) explaining the effect of sales promotion on consumer hedonic motives and positive feelings. This is because Mamuaya and Pandowo (2018) conduct their research in the offline environment, which does not require free shipping in the transaction, while free shipping in the research is necessary for online transactions. The specific TFS promotion did not directly impact positive

Table 3 Demographic Information of Respondents

Category	Classification	Number (n=188)	Percentage
Gender	Male	95	50,5%
	Female	93	49,5%
Age	16-25	157	83,5%
	26-35	27	14,4%
	36-45	3	1,6%
	46-55	1	0,5%
Education	Middle School	9	4,8%
	High School	88	46,8%
	Bachelor	89	47,3%
	Master/ Doctor	2	1,1%
Shopping Frequency	Not every month	54	28,7%
	1-2 times	82	43,6%
	> 3 times	52	27,7%
Free Shipping Familiarity	No. Familiar <3	11	5,9%
	Neutral 3	4	2,1%
	Familiar 4-5	53	28,2%
	Very Familiar 6	120	63,8%
Total		188	100%

Table 4 Summary Statistics of Experimental Design

Product Type	TFS Type	HM Mean	PA Mean
Utilitarian Product (Flashdisk)	Minimum TFS (25k/15k)	4,901	4,968
	Maximum TFS (100k/25k)	5,440	5,126
Hedonic Product (Chocolate)	Minimum TFS (25k/15k)	5,239	5,264
	Maximum TFS (100k/25k)	4,807	4,895

Table 5 Summary Statistics of Factor Analysis and Reliability

Construct	Items	Factor loading	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)	Eigenvalue
Hedonic Motivation	HM1	0,708	0,858	0,813	0,524	8,370
	HM3	0,808				
	HM4	0,762				
	HM5	0,603				
	PA2	0,717				
Positive Affect	PA4	0,761	0,931	0,907	0,622	2,173
	PA5	0,797				
	PA6	0,817				
	PA7	0,855				
	PA8	0,78				
	Y1	0,791				
Impulsive Buying Behavior	Y2	0,866				
	Y3	0,645				
	Y5	0,799				
	Y6	0,826				
	Y7	0,735				

consumer feelings because, by TFS promotion, the online consumers need to reach minimum purchasing requirements and wait for the delivery process, which decreases their good feelings.

Table 6 Correlation Matrix

	Mean	SD	1	2	3
HM	5,0918	1,199	1		
PA	5,0612	1,147	0,710**	1	
IBB	4,2456	1,497	0,564**	0,521**	1

In addition, the product type do not show a direct impact on both consumer hedonic motivation ( $F = 0,732, p > 0,05$ ) and positive affect ( $F = 0,037, p > 0,05$ ) confirming the rejection of  $H_2$ . This is not similar to our expectation to influence consumers' reactions, which is based on the finding by Loebnitz and Grunert (2018), and Zhu and Lin (2019), although proving the impact of product type on referral likelihood and Purchase Intention. It means that online consumers are not so motivated to shop online and feel happy based on the types of products offered at the online shop

because they may already have plans to purchase these types of goods in advance.

However, the research finds a significant interaction effect of the product type and TFS type simultaneously on consumer hedonic motivation ( $F = 7,939, p < 0,01$ ), confirming that the effect of TFS is related to product type. For minimum TFS, the result indicates that consumers would perceive greater hedonic motivation when they buy hedonic products. Meanwhile, the maximum TFS would induce greater consumer hedonic motivation when combined with the utilitarian product, as shown in Figure 2, thus  $H_{3a}$  is supported. The result turns out to be quite similar to findings by Mamuaya and Pandowo (2018), pointing out the impact of sales promotion on consumer hedonic motivation, which then affects impulsive buying, despite the offline environment. Moreover, Dawson and Kim (2010) specifically find the impact of free shipping promotions on impulse buying. It provides vital information regarding the importance of carefully selecting a threshold for free shipping promotions across various product types to maximize the synergy impact between them. Contrary to the expectation, the result does not indicate the effect between TFS type and product type on positive affect ( $F = 2,473, p > 0,05$ ), therefore the  $H_{3b}$  is rejected.

Table 7 Test of between-subject effect

Source	DV	SS	DF	MS	F	Sig.
TFS Type	HM	0,135	1	0,135	0,097	0,756
	PA	0,521	1	0,521	0,395	0,530
Product Type	HM	1,021	1	1,021	0,732	0,393
	PA	0,049	1	0,049	0,037	0,847
TFS Type * Product Type	HM	11,074	1	11,074	7,939	0,005***
	PA	3,258	1	3,258	2,473	0,118

Note: \* $p < 0,1$ ; \*\* $p < 0,05$ ; \*\*\* $p < 0,01$

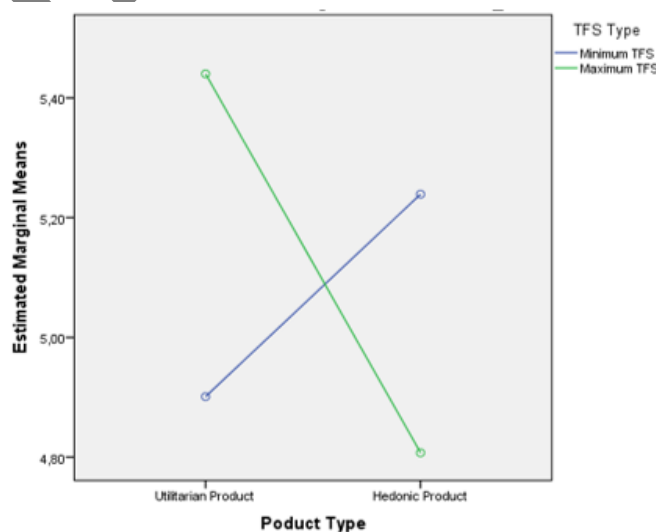


Figure 2 Interaction effect between product type and TFS type on hedonic motivation



Table 8 The Result of Multiple Regression

Model	DV	Unstandardized Coefficients		standardized Coefficients	t-value	Sig.
		B	Std. Error	Beta		
Hedonic Motivation	Positive Affect	0,742	0,054	0,710	13,767	0,000***
	Impulsive Buying Behavior	0,488	0,105	0,391	4,629	0,000***
Positive Affect	Impulsive Buying Behavior	0,317	0,110	0,243	2,881	0,004***

Note: \*p<0,1; \*\*p<0,05; \*\*\*p<0,01

Regression analysis is conducted to examine the relationship between several variables of hedonic motivation, positive affect and impulsive buying behavior. The result showed that hedonic motivation would influence consumer positive affect ( $\beta = 0,710$ ,  $p < 0,01$ ), accepting the  $H_4$ . The finding strengthens the research by Verhagen and van Dolen (2011) and Iyer et al. (2020), explaining that customers with stronger hedonic motives are more likely to experience positive feelings. It proves that hedonic motivation increases the comfort of online consumers when shopping.

In addition, consumer hedonic motivation directly impacts impulsive buying behavior ( $\beta = 0,391$ ,  $p < 0,01$ ) as  $H_5$  is accepted. The finding is similar to previous studies, which find the direct impact of hedonic motivation on consumer impulsive buying (Chan et al., 2017; Kimiagari et al., 2021; Park et al., 2012) and the urge to buy impulsively (Zheng et al., 2019). It means that impulsive buying behavior is directly influenced by consumer hedonic motivation. Therefore, the research believes that consumers with hedonic motivation will be more inclined to shop impulsively at online shops.

Moreover, the analysis indicates the impact of positive affect on impulsive buying behavior ( $\beta = 0,243$ ,  $p < 0,01$ ), confirming the acceptance of  $H_6$ , and the finding is similar to some previous research (Amos et al., 2014; Chen & Yao, 2018; Verhagen & van Dolen, 2011). It is believed that when online consumers feel comfortable during shopping online, they will also be more inclined to shop impulsively. Besides, The experimental results in the research apply to all genders since the samples are evenly distributed between men and women. Meanwhile, the age of online consumers in the experiment is dominated by young people who tend to be influenced by promotions to get the best price.

#### IV. CONCLUSIONS

Although nowadays the free shipping promotion on e-commerce has become a trend in online competitions program to compel more consumers as they use to offer threshold of free shipping, the research on how consumers react to free shipping threshold toward online impulsive buying behavior is still limited. Most studies tested the effect

of the free shipping threshold toward other variables like a willingness to pay for shipping (Huang et al., 2019) and intention to shop (Huang & Cheng, 2015). The research aims to fill this gap by identifying the significant impact of the free shipping promotion threshold on consumer impulsive buying behavior in online shopping. The research tests how free shipping threshold and product type influence consumer feeling of hedonic motivation and positive affect, enhancing consumer reaction to buy impulsively.

The research finds that consumer impulsive buying behavior in the online shop can be induced by certain free shipping thresholds and product types. In conclusion, the experiment results confirm the suggested model in consumer impulsive purchase behavior.

The research finds how to increase consumer hedonic motivation and their perception of positive affect while purchasing and, in turn, induce consumer reaction of buying impulsively through interesting threshold of free shipping type and product type. The research explains that the threshold of free shipping could induce consumer hedonic motivation only when combined with the product type, whether utilitarian or hedonic, affecting consumer positive affect and impulsive buying behavior. Interestingly, hedonic motivation has the greatest impact on impulsive purchasing behavior, highlighting the necessity of combining the threshold of free shipping promotion and product type. Hence, integrating other sales promotions that can induce consumer hedonic motivation is necessary for creating consumer reaction to buying impulsively. Some other components of promotion that can enhance consumer hedonic motivation such as discounts, rebates, and bundling (Xu & Huang, 2014) are recommended to be tested in future research.

Sales promotions are among the most powerful methods for triggering impulse purchases for online buyers (Dawson & Kim, 2010; Wiranata & Hananto, 2020). In addition, sales promotions, according to Xu and Huang (2014), have one of the most powerful effects on short-term consumption behavior, particularly impulse buying behavior. E-marketers must choose appropriate sales promotion strategies to trigger consumers' responses to increase sales and profit. According to the research findings, threshold of free shipping promotion is one program that can

enhance consumer impulsive buying behavior when combined with a specific product type. The research finds a managerial implication that e-marketers like Shopee can benefit from the research by offering a maximum free shipping threshold for utilitarian products and a minimum free shipping level for hedonic products. E-retailers can set the threshold of free shipping suitable to the product type the consumer chooses and finally induce their impulsiveness to buy through consumer positive feeling. Moreover, the platform designer can benefit by displaying and giving a suitable threshold free shipping promotion according to its product type through pop up on consumers' devices.

The research has important implications for recent theories on consumer behavior. First, the research has helped broaden the theoretical scope of the S-O-R model by actually demonstrating its applicability to investigating online impulsive buying behavior in e-commerce. By examining factors impacting impulsive purchase behavior in a threshold of free shipping type and product type deal, the research has added to and verified the S-O-R framework. Secondly, the research contributes to the field of hedonic motivation research, while hedonic motivation has been shown to have a significant impact on consumer impulsive buying responses (Chan et al., 2017; Kimiagari et al., 2021; Ozen & Engizek, 2014; Park et al., 2012) In addition, only limited studies have looked into how the threshold of free shipping type and product type components interact to influence individuals' perceived hedonic motivation and positive affect.

The research has some limitations. Firstly, the research sample consists solely of e-commerce users from a single country and specific platform (Shopee), who are selected through a purposive sampling method. Therefore, the results cannot be generalized to other nations and platforms due to the sampling method. They do not represent a varied group of internet buyers around the world. Researchers in the future can invite people from different backgrounds and nations to represent a varied group of online customers. Secondly, the research involves only quantitative research. Using other approaches, such as qualitative models, could produce different outcomes.

Furthermore, only two organismic variables (hedonic motivation and positive affect) are explored in our suggested model to avoid any further growth of the model. The research also reduced the number of stimuli to just a few (product type and TFS type). Future research could include more cognitive and affective reactions in the organism and additional stimuli. Besides, it is advisable to add the consumer response variable of compulsive buying in future research (Gogoi & Shillong, 2020).

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