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The Impact of Flash Sales, Free Shipping, and Price Discounts on Impulse Buying Behavior among Gen Z Consumers

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ABSTRACT

Generation Z customers in Bandung, Indonesia, are more likely to make impulsive purchases on the Shopee platform due to the quick growth of e-commerce and the growing use of marketing strategies like flash sales, free shipping, and price reductions. This study aims to examine how flash sales, free delivery, and price reductions affect Generation Z customers' impulsive purchasing habits. The quantitative survey approach was the research technique employed. Purposive sampling was used to choose 200 student replies as participants. To investigate the association between variables, data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results demonstrate that, either partially or concurrently, flash sales, free delivery, and price reductions have a favorable and significant impact on impulsive purchasing behavior. Because of the urgency and FOMO (fear of missing out) that buyers felt, flash sales were the best predictor of these factors. Additionally, rather than viewing free delivery and price reductions as two distinct marketing strategies, Generation Z customers typically view them as one way to save money. These findings provide useful implications for e-commerce businesses in developing more successful promotional tactics and add to the empirical understanding of the influence of integrated promotional signals on impulsive purchase decisions in the setting of digital commerce.

Keywords: Flash Sale; Free Shipping; Price Discounts; Impulse Buying; Generation Z; E-Commerce.

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INTRODUCTION

The popularity of online shopping in Indonesia has surged in recent years, significantly impacting the nation's digital economy. The e-Conomy SEA 2023 report shows that Indonesia has the largest digital economy value in Southeast Asia, with the e-commerce sector as the main contributor (Google, 2023). Data from Badan Pusat Statistik (2023) also showed a significant increase in trade transactions conducted through electronic systems, in line with high internet penetration and smartphone use. In conditions of increasingly fierce competition, e-commerce platforms optimize promotional strategies based on price incentives to increase transaction conversions. A McKinsey & Company (2022) identified that price discounts and subsidized shipping costs are the main factors influencing digital consumer purchasing decisions in Southeast Asia. Tactics such as flash sales, free shipping, and discounts are often applied simultaneously in large-scale promotional campaigns, such as repeating date programs and payday sales on platforms such as Shopee.

The development of various digital promotion strategies on e-commerce platforms has indirectly changed consumer decision-making patterns, especially in spontaneous and unplanned purchasing behavior (Rachman et al., 2024; Chaniago & Efawati, 2022). In this regard, one of the consumer behavior phenomena that is becoming more and more important to research in the age of digital commerce is impulse buying. Time and price-based promotions are significantly associated with increased impulsive purchases in the context of online shopping, according to a number of empirical studies conducted between 2020 and 2026. Marjerison et al. (2022) found that limited-time promotions significantly increased the probability of spontaneous purchases compared to conditions without promotions. Research by Zhang et al. (2022) shows that the countdown timer feature in flash sales increases the urgency of purchases, which has an impact on quick transaction decisions. In addition, Gulfraz et al. (2022) proved that the free shipping program has a positive effect on impulse purchases because it reduces the perception of additional cost burdens. Reduced promotional prices also encourage consumers to view transactions as more valuable, thus increasing the likelihood of unplanned purchases (Yang et al., 2021; Mulyadi & Efawati, 2024). A recent study by Li & Ha (2025) suggests that the combination of multiple forms of promotion in a single application view can produce different effects compared to when tested separately.

The selection of Bandung as the location of the study was based on its demographic profile as one of the cities with the largest concentration of Generation Z in West Java. Based on public information disclosure data, Bandung has a high internet penetration index and a dynamic creative economy ecosystem, where online shopping behavior has become part of the urban lifestyle. The high frequency of students and young workers' use of e-commerce applications in Bandung makes this city an ideal representation to observe consumers' response to digital promotion stimulus in real terms.

Although studies discussing digital promotion strategies and impulse buying have grown rapidly, empirical findings remain inconsistent. Several studies reported that flash sales significantly increase impulse buying behavior (Ramadhan & Wardi, 2025) while other studies indicate that the effect may vary depending on consumers' perceived urgency and platform characteristics (Zhang et al., 2022). Similar inconsistencies are also found in free shipping and price discount promotions. Rodrigues et al. (2021) and Nurholila (2025) found that free shipping positively affects impulse buying, whereas Zhang et al. (2022) reported that its influence is conditional and varies across shopping contexts. Likewise, Kimiagari & Asadi Malafe (2021) as well as Parsad et al. (2021) found a significant positive effect of price discounts on impulse buying, while Zhang et al. (2022) found no significant effect in live-commerce settings. These contradictory

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findings indicate that the effectiveness of promotional strategies may depend on contextual factors, consumer characteristics, and promotional environments, thereby creating a need for further investigation.

Furthermore, most previous studies were conducted in different contexts, such as live commerce environments (Zhang et al., 2022), general online shopping platforms (Rodrigues et al., 2021; Rifathurrahman et al., 2024), or consumers from countries outside Indonesia. Limited evidence is available regarding how Indonesian Generation Z consumers, particularly Shopee users, respond to multiple promotional stimuli simultaneously. Therefore, further research is needed to examine whether the findings from previous studies can be generalized to the context of Indonesian Generation Z consumers.

In contrast to previous studies, which tend to position free shipping, price discounts, and flash sales as separate promotional strategies, this study tries to analyze the possibility of the perception of "integrated financial savings" in Generation Z consumers. This analysis not only analyzes impulse buying but also explores how consumers assess various forms of price reduction as a single financial benefit in the spontaneous decision-making process. It is anticipated that this method will provide a fresh theoretical perspective on the behavior of digital consumers on e-commerce platforms.

Flash sales, free shipping, and price discounts provide empirical evidence in influencing impulsive buying behavior; the study can offer several contributions. Besides that, the current study will also provide a new understanding of consumer perceptions, especially Generation Z. And finally, this research is expected to enrich the literature related to consumer behavior and can serve as a guide for e-commerce players creating more successful marketing plans. In light of this context, the goals of this study are:

a) To determine and examine how flash sales affect impulsive purchases.
b) To determine and examine how free shipping affects impulsive buying.
c) To determine and examine how price discounts affect impulsive buying.
d) To determine and examine the impact of flash sales, free shipping, and price discounts on impulsive buying.
e) To determine and examine the variables that contribute the most (dominant) in triggering impulse buying.

LITERATURE REVIEW

E-commerce is a digital commerce system that allows the buying and selling process to be carried out via the internet without having to bring together sellers and buyers directly (Munoz et al., 2023). E-commerce includes the process of buying and selling goods and services through a computer network (Williams, 2024) and involves the exchange of products, services, and information through an internet-based system (Dhurandar, 2023; Emiliana & Efawati, 2025). The presence of e-commerce not only makes transactions easier, but also influences consumer behavior in making purchase decisions. Consumer behavior is a series of processes that individuals go through in determining consumption choices, starting from the emergence of needs to evaluation after purchase (Szmigin & Piacentini, 2022). In online shopping, consumers tend to find it easier to find information, compare prices, and be influenced by a variety of digital marketing techniques, including free shipping, flash sales, and discounts, which can trigger impulsive purchases (Rachman et al., 2025; Mediana et al., 2026).

Impulse buying is defined as an unplanned, impulsive purchase motivated more by feelings than by logic (Kaur, n.d.). In e-commerce, this tendency is strengthened by

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various digital promotion strategies, especially flash sales, free shipping, and price discounts. Flash sales are campaigns that offer significant discounts for a short period of time and in small numbers, giving the impression of scarcity and urgency and enticing customers to make an instant purchase (Utami et al., 2024). This condition also triggers fear of missing out (FOMO), which can reduce consumers' rational considerations (Utami et al., 2024). Research by Ramadhan & Wardi (2025) shows that flash sales have a positive and significant effect on impulse buying. Theoretically, the relationship between flash sales and impulse buying can be explained through the Stimulus-Response theory, where promotional stimuli are able to influence consumers' psychological responses and increase the likelihood of impulse purchases (Good & Hyman, 2020; Kimiagari & Asadi Malafe, 2021; Sumarliah et al., 2022). Prior research has demonstrated a positive impact of flash sales on impulsive purchasing behavior. Ramadhan & Wardi (2025) revealed that the phenomenon of flash sales significantly increases the tendency of consumers to make impulsive purchases in e-commerce transactions. Likewise, Utami et al. (2024)mentioned that flash sales promotion on Shopee has a significant effect on impulse buying behavior in buying fashion products. According to Widyariini et al. (2025), flash sales can also increase arousal that encourages impulse buying behavior in Shopee consumers.

Free shipping is a marketing strategy that removes the cost of shipping to give customers the impression that they are receiving extra financial benefits when they order online (Marwan, 2026). In e-commerce, shipping costs are often seen as an extra responsibility that may lessen the desire to buy. Thus, the removal of shipping costs is an incentive for consumers to buy more quickly and impulsively. According to Stimulus-Response Theory, free shipping is an external promotional stimulus that influences consumers' psychological responses by enhancing perceived savings and shopping convenience (Sumarliah et al., 2022). Free delivery has been shown to positively impact impulsive purchases in earlier research. Free shipping promotions significantly increase consumers' tendency to make impulsive purchases in online shopping environments (Rodrigues et al., 2021). Nurholila (2025) states that the removal of shipping costs also improves purchasing decisions because consumers feel the transaction is more economically beneficial. In addition, Widyariini et al. (2025) stated that the free shipping promotion causes emotional arousal that ultimately increases impulse buying behavior. However, some earlier studies reported contradictory results concerning the impact of free shipping on impulsive buying. Free shipping was found to have a significant impact on impulsive purchasing behavior in live commerce scenarios by Zhang et al. (2022). However, other research indicates that the impact may differ based on platform context, promotional design, and consumer attributes. These discrepancies show that further research is still required, particularly with Indonesian Generation Z customers.

As stated by Lee & Chen-Yu (2018), price discounts are product price reductions from ordinary pricing that are intended to increase consumers' opinions of the products' value and attractiveness. Discounts give customers the impression that they are getting better deals or discounts, which might encourage impulsive buying. Price reductions serve as promotional stimuli that affect consumers' emotional and cognitive reactions, increasing the possibility of impulsive purchases, according to Stimulus-Response Theory (Kimiagari & Asadi Malafe, 2021). Numerous previous studies have shown that price reductions have a positive effect on impulsive purchasing behavior. According to Parsad et al. (2021), discounts' higher perceived value can lead to online shoppers' impulsive purchasing behaviors. Price reductions have a major impact on impulsive purchasing behavior in online shopping settings, as demonstrated by Kimiagari & Asadi Malafe (2021). In a similar vein, Utami et al. (2024) discovered that Shopee customers who buy fashion items are greatly encouraged to make impulsive purchases by discounts.

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However, there are still conflicting empirical results about the impact of price reductions. Zhang et al. (2022) discovered that in real commerce settings, discounts had no discernible effect on impulsive purchasing behavior. These variations imply that contextual elements like platform features, promotional pairings, and customer demographics may affect how successful price discounts are. As a result, more research on Indonesian Generation Z customers is still necessary.

Customers are frequently exposed to several promotional tactics at once in contemporary e-commerce practices, such as flash sales, free delivery, and price reductions on a single platform display. Together, these marketing techniques produce more potent psychological inputs that may heighten emotional reactions and impulsive buying. Multiple promotional cues can enhance customers' reactions and raise the possibility of impulsive purchasing behavior, according to Stimulus-Response Theory (Good & Hyman, 2020; Sumarliah et al., 2022). Prior research has mostly looked at price reductions, free shipping, and flash sales independently. Widyariini et al. (2025) examined many promotional variables at the same time, but rather than directly analyzing how consumers understand combined promotional benefits, the study concentrated on the mediating effect of arousal. Thus, the purpose of this study is to investigate the simultaneous effects of flash sale, free shipping, and price discounts on the impulsive buying behavior of Generation Z Shopee customers.

Because flash sales combine limited-time offers, scarcity perceptions, and urgency at the same time, they are sometimes regarded as the most potent e-commerce promotional strategy for inducing impulsive purchases. Flash sales exert more emotional pressure on customers to make purchases right away than free shipping and price reductions. Customers frequently act impulsively due to FOMO and time constraints because they fear missing out on important possibilities. Flash sales have a greater psychological impact on customers than other marketing techniques, according to earlier research. According to Ramadhan & Wardi (2025), flash sales greatly boost impulsive buying habits because of the sense of urgency and scarcity. According to Widyariini et al. (2025), flash sales have a significant impact on emotional arousal, which fuels impulsive purchasing. Research comparing the relative prevalence of price reductions, free delivery, and flash deals at the same time is still scarce, especially when it comes to Indonesian Generation Z customers. Therefore, finding out which promotional aspect affects Generation Z customers' impulsive Shopee purchasing behavior is the aim of this study.

Table 1 compares earlier research on promotional tactics and impulsive purchasing in e-commerce settings to identify the research gap and situate the current study in relation to the corpus of existing literature. It is evident from earlier studies that flash sale, free shipping, and price discounts variables were either explored independently or concentrated on particular product categories and mediating variables. Few studies have used the integrated financial savings approach to examine the simultaneous impact of these promotional methods among Indonesian Generation Z consumers. This study attempts to bridge the gap on the impact of flash sales, free shipping, and price discounts on impulsive buying behavior among Generation Z buyers on the Shopee platform. Figure 1 displays the study's conceptual framework.

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Table 1. Summary of Previous Research

No.	Researcher, Year	Title and Location	Methods, Samples, Analysis	Research Results	Equations	Differences
1	Zhang et al. (2022)	"The Influencing Factors on Impulse Buying Behavior of Consumers under the Mode of Hunger Marketing in Live Commerce"	Quantitative, survey (questionnaire); SEM with AMOS; a 7-point Likert scale; 533 respondents aged 18-29 years; e-commerce livestreaming in China	Flash sales and discounts are insignificant; the tagline of free shipping is significant to impulse buying	Both use the S-O-R, talk about promotional stimulation, and look at digital consumers' impulsive purchasing behavior.	The respondents' specifications are not the same, the focus is not the same, different variables.
2	Utami et al. (2024)	"The effect of flash sales and discounts on impulse buying of fashion products on Shopee"	Quantitative surveys; 130 respondents; SEM-PLS	Flash sales and discounts have a big impact on impulsive purchases.	Both use survey methods and discuss impulse buying	Different samples; different analysis techniques; fashion product focus.
3	Widyarini et al. (2025)	"The effect of flash sales, limited quantity, price discounts, and free shipping on arousal and impulse buying of Shopee customers"	Quantitative; SEM	Price discounts, free shipping, and flash sales significantly raise arousal, which leads to more impulsive purchases.	Discuss impulse buying and promotion strategies	We did not examine the arousal variable; the number of samples is different, and different analysis techniques were used.

Source: Own Compilation (2026)

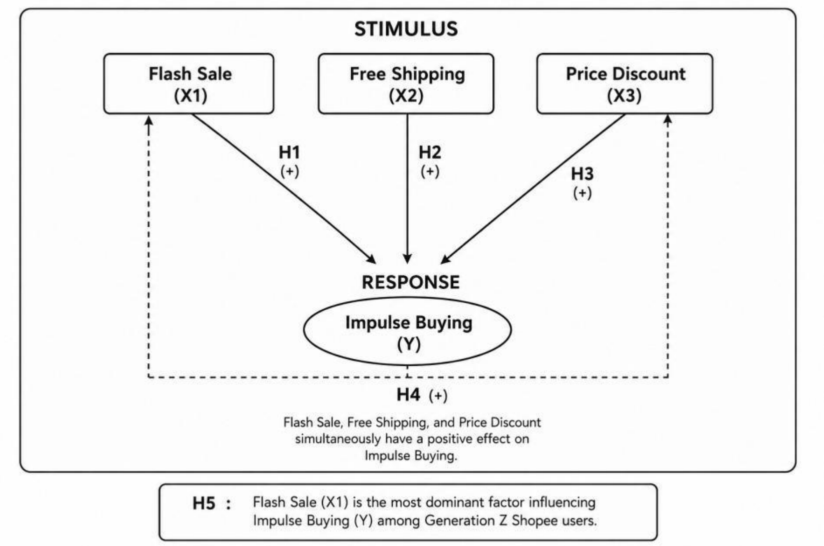

Figure 1. Research Conceptual Framework
Source: Own Compilation (2026)

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According to Stimulus-Response Theory, flash sales function as promotional stimuli that create urgency and scarcity perceptions, which trigger consumers' emotional responses and increase the likelihood of impulse buying. Flash sales often involve limited quantities and limited purchase periods, encouraging consumers to make quick decisions to avoid missing opportunities. Previous studies by Ramadhan & Wardi (2025), Utami et al. (2024), and Widyariini et al. (2025) consistently found that flash sales positively influence impulse buying behavior in e-commerce environments. Therefore, it is expected that flash sales will positively influence impulse buying among Generation Z Shopee users. H1: Flash sales positively affect impulse buying among Generation Z Shopee users.

Free shipping reduces the perceived financial burden associated with online purchases. Based on Stimulus-Response Theory, the elimination of shipping costs acts as an external stimulus that enhances perceived value and shopping convenience, thereby encouraging spontaneous purchases. Previous studies conducted by Rodrigues et al. (2021), Nurholila (2025), and Widyariini et al. (2025) reported that free shipping promotions significantly increase consumers' tendency to engage in impulse buying. Therefore, free shipping is expected to positively influence impulse buying among Generation Z Shopee users. H2: Free shipping positively affects impulse buying among Generation Z Shopee users.

Price discounts increase consumers' perceptions of economic benefits and product value. Under Stimulus-Response Theory, discounts serve as promotional stimuli capable of generating positive emotional reactions and encouraging unplanned purchases. Empirical studies by Kimiagari & Asadi Malafe (2021), Parsad et al. (2021), and Utami et al. (2024) found that price discounts significantly increase impulse buying behavior. Thus, price discounts are expected to positively influence impulse buying among Generation Z Shopee users. H3: Price discounts positively affect impulse buying among Generation Z Shopee users.

In contemporary e-commerce platforms, consumers are frequently exposed to multiple promotional stimuli simultaneously. Flash sales, free shipping, and price discounts collectively create stronger perceptions of savings and urgency than when they are encountered individually. Stimulus-Response Theory suggests that multiple stimuli may strengthen consumer responses and increase the likelihood of impulse buying. Previous studies by Good & Hyman (2020), Sumarliah et al. (2022), and Widyariini et al. (2025) indicate that the combination of promotional stimuli can intensify consumers' emotional reactions and purchasing intentions. Therefore, the simultaneous presence of flash sales, free shipping, and price discounts is expected to positively influence impulse buying. H4: Flash sales, free shipping, and price discounts simultaneously have a positive effect on impulse buying among Generation Z Shopee users.

Among the three promotional strategies, flash sales are expected to have the strongest effect on impulse buying. Compared with free shipping and price discounts, flash sales incorporate scarcity, time pressure, and fear of missing out (FOMO), which are powerful psychological triggers of impulsive behavior. Previous studies by Ramadhan & Wardi (2025), Widyariini et al. (2025), and Zhang et al. (2022) suggest that urgency-based promotions tend to produce stronger emotional responses than other monetary incentives. Therefore, flash sales are expected to be the most dominant factor influencing impulse buying among Generation Z Shopee users. H5: Flash sales are the most dominant factor influencing impulse buying among Generation Z Shopee users.

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RESEARCH METHODS

This study used a quantitative research approach using a survey method to examine how flash sales, free shipping, and price reductions impact Generation Z customers' impulsive shopping behavior on the Shopee platform in Bandung, Indonesia. The study examined the relationship between the independent variables, flash sales (X1), free shipping (X2), and price discounts (X3), and the dependent variable, impulsive purchase (Y). The research instrument consisted of 12 indicators measured through 24 questionnaire items, with each indicator represented by two measurement items.

Students in Bandung who had used e-commerce sites, especially Shopee, to make purchases made up the study's demographic. Purposive sampling combined with non-probability sampling was the method employed. The respondent criteria included:

a) Students residing in Bandung
b) Those who had made purchases via e-commerce platforms
c) People who had observed or utilized promotional programs like flash sales, free shipping, or price discounts.

This survey involved 200 respondents in total. The sample size was determined based on the recommendation of Hair et al. (2021), who suggest that studies employing multivariate analysis should have a minimum sample size of 5-10 times the number of indicators used in the questionnaire. Since this study utilized 24 measurement indicators, the minimum required sample size ranged from 60 to 120 respondents. Therefore, the use of 200 respondents exceeded the minimum requirement and was considered adequate to ensure a reliable statistical analysis.

Google Forms was used to deliver a survey conducted online to collect primary data. The questionnaire employed a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). The research tool used a number of indicators modified from earlier studies to measure four characteristics. Signs of a flash sale were a short promotional period, steep discounts, a small number of products, and a push for speedy purchases. Reduced delivery burden, the value of free shipping coupons, purchase decisions impacted by free shipping, and buying interest since there were no shipping costs were all signs of free shipping. Price discounts indicators included the size of the discount, the clarity of the discount information, customer interest in the discounts, and the increased willingness to purchase as a result of the discounts. Unplanned purchases, impulsive purchases, emotional reactions to promotions, and difficulty were signs of impulsive buying.

Table 3. Research Variable Operationalization

Variable	Definition	Indicator	Scale
Flash Sale (X1)	A sales promotion program with a large discount that lasts for a limited time on an e-commerce platform, so as to encourage consumers to make a purchase immediately.	1. Limited promo duration 2. Great discounts at certain times 3. Limited number of products	Likert
Free Shipping (X2)	Promotion in the form of eliminating shipping costs provided by e-commerce platforms to attract consumers to make purchases.	1. Reduced shipping cost burden 2. The Influence of Free Shipping on Purchasing Decisions 3. Interest in buying because there are no shipping fees	Likert
Price discounts (X3)	A promotional strategy in the form of a price reduction from the	1. The amount of the discount 2. Clarity of discount information 3. Discounts increase the desire to buy	Likert

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	normal price given to consumers in a certain period.		
Impulse Buying (Y)	A purchase behavior that occurs spontaneously without prior planning when a consumer is shopping on an e-commerce platform.	1. Purchase without planning 2. Spontaneous buying decision 3. Emotional boost when seeing promos	Likert

Source: Own Compilation (2026)

The collected data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) and SmartPLS 4 software. Because PLS-SEM is adaptable for intermediate sample sizes, appropriate for predictive research models, and does not necessitate rigorous assumptions of normal data distribution, it was chosen. The analysis was divided into two phases: an inner model evaluation to look at the correlations between variables and evaluate the suggested hypotheses, and an outer model evaluation to test validity and reliability.

RESULTS

In order to gather primary data for this study, online questionnaires were sent to respondents who have shopped in e-commerce and used the promotional features provided. After going through the data screening process, as many as 200 valid respondents were obtained for analysis. Respondents' characteristics were classified based on campus location and e-commerce platforms that were frequently used. The majority of respondents came from campuses in the Bandung area, as seen in Table 4 below.

Table 4. Respondent Distribution by Campus Origin

Campus Origin	Frequency	Percentage
Outside Bandung	17	9%
Within Bandung	183	91%
Total	200	100%

Source: Processed Data by Authors (2026)

The dominance of Bandung students confirms that the sample drawn has been representative of the target population of the study, where Bandung is known as one of the educational centers with a high level of digital literacy and e-commerce consumption among its students. In addition to domicile, the distribution of e-commerce usage is seen in Table 5.

Table 5. Distribution of Respondents' Online Shopping Platforms

Platform	Frequency	Percentage
Shopee	144	72%
Tokopedia	7	3,5%
TikTok Shop	49	24,5%
Total		100%

Source: Processed Data by Authors (2026)

Based on Table 5, the Shopee platform absolutely dominates respondents' preferences. The high percentage of the sample of Shopee users is consistent with the main focus of the study. This is also in line with the business phenomenon in Indonesia, which shows that Shopee is top of mind for Generation Z consumers thanks to its aggressive promotional tactics like free shipping and flash sales. Therefore, the respondents'

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experience in using the Shopee application is considered valid to be used as a basis for measuring the impulse buying behavior.

Before conducting hypothesis analysis using PLS-SEM, to make sure the questionnaire could measure study variables precisely and consistently, it was validated for validity and reliability. Pearson Product-Moment correlation is used in the validity test on 33 pilot test respondents, showing that all 12 initial indicators were deemed legitimate when r-count > r-table (0.344) and a significance of < 0.05. All indicators derived from the S-O-R theory and earlier studies were able to measure latent variables well.

After all the indicators were declared valid, using the Principal Component Analysis (PCA) extraction method, varimax rotation, and exploratory factor analysis (EFA), we examined the construct validity. A KMO value of 0.879 was revealed by the test results. and a significant value of 0.000 (< 0.05) was revealed by Bartlett's Test. This indicates that the research sample of 200 respondents is adequate and the correlation matrix between the indicators can be extracted. Thus, the variables Impulse Buying (Y) and Flash Sale (X1) have shown good construct validity by grouping them on their respective components independently. However, there is an interesting empirical phenomenon in the variables Free Shipping (X2) and price discounts (X3), where most of the indicators (X3.4, X3.3, X2.5, X2.4, X3.2) are merged into one common component.

The Cronbach's Alpha method reliability tests that followed revealed that every study variable had surpassed the Cronbach's Alpha critical limit of 0.70. All variables now have a high internal consistency value, with a value range between 0.741 and 0.827, so that the 24 final indicators in this questionnaire are robust measurement tools and free from response bias. Therefore, this purified data is ready to be used for the hypothesis test stage. Hypothesis testing was conducted utilizing the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique.

The Outer Model's evaluation reveals that every variable satisfies the construct's convergent validity and reliability requirements. Every variable has an Average Variance Extracted (AVE) value greater than 0.50. namely Flash Sale (0.745), Free Shipping (0.660), price discounts (0.719), and Impulse Buying (0.734), so that the indicator is declared valid. Furthermore, the reliability assessment shows that all constructs meet the recommended criteria, with Cronbach’s Alpha, rho_A, and Composite Reliability (rho_C) values above 0.70. These results indicate satisfactory internal consistency and reliability of the measurement model.

Table 6. Outer Model Evaluation Results

Variable	Cronbach’s Alpha	Rho_A	Composite Reliability (rho_C)	Average Variance Extracted
Flash Sale	0.829	0.832	0.898	0.745
Free Shipping	0.741	0.779	0.852	0.660
Impulse Buying	0.819	0.829	0.892	0.734
Price discounts	0.808	0.828	0.885	0.719

Source: Processed by the Authors Using SmartPLS 4 (2026)

Table 7. Discriminant Validity (HTMT Ratio)

Variables	Flash Sale	Free Shipping	Impulse Buying	Price Discount
Flash Sale				
Free Shipping	0.738			

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Impulse Buying	0.706	0.704	
Price Discounts	0.802	0.869	0.675

Source: Processed by the Authors Using SmartPLS 4 (2026)

Discriminant validity assessment ensures that a construct is empirically distinct from other constructs in the structural model. In this study, the Heterotrait-Monotrait (HTMT) ratio of correlations was utilized as a rigorous criterion. The results demonstrate that all HTMT values between the constructs, ranging from 0.675 to 0.869, are well below the conservative threshold of 0.90. This confirms that discriminant validity has been successfully established, indicating that each variable measures a unique and distinct concept without overlapping.

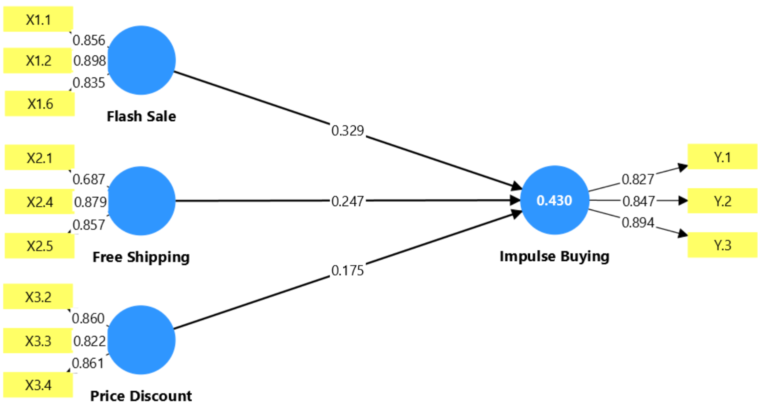

Figure 2. Outer Model Chart
Source: Processed by the Authors Using SmartPLS 4 (2026)

Testing is carried out on the inner model to test the research hypothesis once the instrument's validity and reliability have been established at the outer model stage. The test was conducted using the Bootstrapping approach (with 5,000 subsamples) to determine the path coefficient (Beta/Original Sample) and the degree of significance (P-Values). If the P-Value is less than 0.05, the hypothesis is said to be accepted. According to the test results, impulse buying was positively and significantly impacted by all promotional factors. With a coefficient value of 0.329 and a P-Value of 0.000, the flash sale variable had the greatest impact. Additionally, free delivery had a substantial impact as well, with a P-Value of 0.002 and a coefficient of 0.247. Price discounts, on the other hand, had the least impact when compared to other variables, although they had a positive effect with a coefficient of 0.175 and a P-Value of 0.037.

Table 8. Collinearity Statistics (Inner VIF)

Variables	Flash Sale	Free Shipping	Impulse Buying	Price Discounts
Flash Sale			1.889	
Free Shipping			2.033	
Impulse Buying				
Price Discounts			2.417	

Source: Processed data by the Authors Using SmartPLS 4 (2026)

Prior to evaluating the structural relationships, it is necessary to assess the model for potential collinearity issues among the predictor variables. The Variance Inflation Factor (VIF) values for Flash Sale (1.889), Free Shipping (2.033), and Price Discounts (2.417) are all significantly below the maximum threshold of 5.0 (and strictly below 3.0). This

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indicates that there is no critical multicollinearity present, confirming that the structural model evaluation can proceed accurately.

Table 9. Coefficient of Determination (R^2)

Variables	R-square	R-square adjusted
Impulse Buying	0.430	0.421

Source: Processed Data by the Authors Using SmartPLS 4 (2026)

The coefficient of determination R^2 measures the model's predictive accuracy by representing the proportion of variance in the dependent variable explained by the independent variables. The R^2 **The** value for Impulse Buying is 0.430. This signifies that 43.0% of the variation in Gen Z consumers' impulse buying behavior can be explained by the combined influence of flash sales, free shipping, and price discounts. The remaining 57.0% is attributed to other factors outside the scope of this model.

Table 10. Effect Size (F^2)

Variables	Flash Sale	Free Shipping	Impulse Buying	Price Discounts
Flash Sale			0.100	
Free Shipping			0.052	
Impulse Buying				
Price Discounts			0.022	

Source: Processed Data by the Authors Using SmartPLS 4 (2026)

To further assess the relevance of each predictor, the effect size (F^2) was examined to evaluate the magnitude of their individual impact on the dependent variable. According to Cohen's guidelines (0.02 = small, 0.15 = medium, 0.35 = large), Flash Sale (F^2= 0.100), Free Shipping (F^2 = 0.052), and Price Discounts (F^2 = 0.022) all exhibit a small but meaningful effect on Impulse Buying. Notably, Flash Sale holds the highest relative impact among the three promotional strategies evaluated.

Table 11. Coefficient Path

Variables	Original Sample	Sample Mean	Standard Deviation	T Statistics	P-Values
Flash Sale to Impulse Buying	0.329	0.325	0.072	4.590	0.000
Free Shipping for Impulse Buying	0.247	0.246	0.079	3.117	0.002
Price discounts for Impulse Buying	0.175	0.182	0.084	2.090	0.037

Source: Processed Data by the Authors Using SmartPLS 4 (2026)

The structural model was evaluated using a bootstrapping procedure with 5,000 subsamples to test the significance of the path coefficients. The analysis reveals the following findings:

a) The Impact of Flash Sale on Impulse Buying: The relationship is positive and highly significant (β = 0.329, T-statistic = 4.316, p-value = 0.000). Thus, the first hypothesis is accepted.
b) The Impact of Free Shipping on Impulse Buying: The impact is positive and significant (β = 0.247, T-statistic = 3.175, p-value = 0.002). Therefore, the second hypothesis is also accepted.
c) The Impact of Price Discounts on Impulse Buying: The effect is positive and significant (β = 0.175, T-statistic = 2.091, p-value = 0.037). Consequently, the third hypothesis is accepted.

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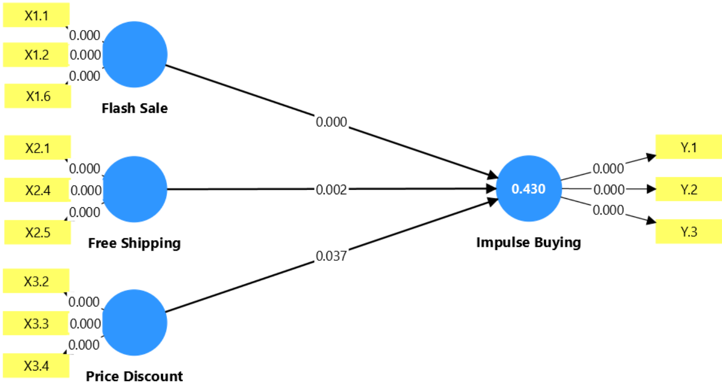

Figure 3. Inner Model Chart
Source: Processed by the Authors Using SmartPLS 4 (2026)

The PLS-SEM analysis revealed two main findings that are new in this study. First, when compared to other promotional methods, price discounts have been shown to be the least effective at inducing impulsive purchases. These results demonstrate a change in the behavior of Generation Z customers, who are more receptive to cutting extra expenses like shipping than traditional discounts. Second, it was found that there is an intention-behavior gap phenomenon in flash sales. Although descriptively respondents tended to feel unaffected by promotional time limits, the bootstrapping results showed that flash sale was actually the most dominant variable in driving impulse buying. These results demonstrate the psychological impact of FOMO, which implicitly motivates impulsive purchasing behavior.

DISCUSSION

The results show that price reductions, free delivery, and flash sales have a favorable and substantial impact on impulsive purchasing behavior. The Stimulus-Organism-Response theory, which explains how external stimuli, like advertising strategies, can affect consumers' psychological states and encourage the development of direct consumer behavioral reactions, such as impulsive purchase, is in line with these findings. In the e-commerce context, various forms of digital promotion act as a stimulus that can create emotional impulses and perceptions of financial benefits that ultimately influence consumer purchasing decisions. According to research, Generation Z customers' impulsive purchasing behavior is driven by both price-saving and emotionally charged psychological inputs. In this regard, the phenomenon of FOMO is one of the psychological mechanisms that speeds up the impulsive decision-making process since customers tend to depend more on emotional impulses and less on rational thinking processes when making purchases.

The findings, which demonstrate that flash sales have a substantial and positive impact on Generation Z customers' impulsive Shopee purchase behavior, support hypothesis H1. This result is in line with the findings of Ramadhan & Wardi (2025), who discovered that time constraints and the feeling of scarcity greatly promote impulsive purchases during flash sale promotions. According to Utami et al. (2024), flash sale tactics have a beneficial impact on impulsive purchases made in online fashion shopping environments. This study, however, goes beyond earlier research by showing that flash sales are viewed by Generation Z customers as a psychological urgency stimulus that exacerbates their Fear of Missing Out (FOMO) in addition to being a mechanism for price reduction. The new study emphasizes the emotional component that underlies impulsive

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buying decisions in digital commerce contexts, in contrast to earlier research that mostly concentrated on the direct promotional impact of flash deals.

The results also support hypothesis H2, demonstrating that free shipping significantly and favorably influences impulsive purchasing. According to Rodrigues et al. (2021), free shipping promotions boost consumers' purchase intentions and impulsive buying inclinations in online shopping settings. This finding is consistent with their findings. Similarly, Nurholila (2025) discovered that consumers' purchasing decisions are positively impacted by the elimination of delivery charges since they perceive bigger financial benefits. However, by demonstrating that Generation Z customers typically view free shipping as a component of integrated financial savings rather than as a stand-alone promotional inducement, this study presents an alternative viewpoint. This finding is in contrast to earlier research that looked at free shipping separately without taking into account how customers interpreted several promotional stimuli taken together in a single digital ecosystem.

The findings demonstrate that price reductions have a positive and significant effect on impulsive buying behavior, supporting hypothesis H3. This outcome corroborates the findings of Parsad et al. (2021), who clarified that discounts boost perceived value and promote impulsive buying. In a similar vein, Kimiagari & Asadi Malafe (2021) discovered that price reductions had a big impact on consumers' impulsive purchasing decisions when they purchase online. Nevertheless, this study also shows that among the three promotional factors, price discounts have the least impact. This result implies that traditional discount tactics commonly employed in e-commerce platforms may be saturating Generation Z consumers. Therefore, rather of depending only on nominal reductions, this study provides fresh empirical evidence that consumers are becoming more receptive to promotions that directly lower overall spending, like free shipping.

The results support hypothesis H4 by demonstrating that price reductions, free delivery, and flash sales all have a positive effect on impulsive purchases. These results support the Stimulus-Organism-Response (S-O-R) hypothesis, which explains how a range of promotional cues can collectively alter customers' emotional and behavioral responses. Zhang et al. (2022) looked at promotional effects independently in live commerce scenarios, whereas Widyariini et al. (2025) primarily explored the role of promotional variables through mediating variables like arousal. By examining how Generation Z customers concurrently understand several advertising methods inside a single integrated digital commerce environment, the current study, on the other hand, offers innovation. This study shows that customers now view promotions as a combined financial benefit that promotes impulsive buying rather than evaluating them separately.

The results further support H5, showing that the most important factor driving Generation Z customers' impulsive buying behavior is flash sales. This result is in line with that of Arianty et al. (2024), who discovered that flash sales greatly boost impulsive buying behavior due to scarcity and urgency effects. In a similar vein, Zakiyah et al. (2025) found that temporary discounts significantly boost impulsive purchases among online shoppers. This study is interesting since it identifies psychological urgency as the primary factor influencing Generation Z customers' impulsive purchasing behavior. Flash sales exert more emotional pressure on customers than free shipping and price discounts since they perceive fewer options for purchases and worry about losing the benefits of the campaign. This research emphasizes the increasing significance of psychological and emotional triggers in contemporary digital consumer behavior.

Despite the fact that the results largely corroborate earlier research, a number of variations in the potency of each promotional component were found. Variations in

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respondent characteristics, platform context, and consumer demographics, particularly the predominance of Generation Z customers in this study, may have an impact on these discrepancies.

The study's conclusions offer a theoretical contribution that deepens our understanding of how S-O-R theory is applied to digital consumer behavior. The integrated financial savings approach, which explains why Generation Z customers typically view flash sales, free shipping, and price discounts as related promotional benefits rather than distinct marketing tactics, is the study's primary innovation. Additionally, this study helps e-commerce players develop more successful marketing plans to draw in customers, particularly those from Generation Z. Flash sales have been shown to be more successful in generating impulsive purchases than depending solely on traditional discounts. On the other hand, free shipping promotional integrations with price discounts can increase the perception of consumer value and strengthen the overall effectiveness of promotions.

Thus, this study not only strengthens the results of previous research but also shows a change in the behavior patterns of modern digital consumers. Generation Z consumers, who are the object of this analysis, tend to be more responsive to promotional strategies that are able to create an emotional experience while providing financial savings. Therefore, changes in impulsive purchasing behavior in the modern e-commerce era need to be understood not only from an economic perspective but also from the psychological aspects and digital behavior of consumers.

CONCLUSION

According to the study's findings, digital marketing techniques like flash sales, free delivery, and price discounts are crucial in motivating Generation Z customers to make impulsive purchases on the Shopee platform. The results show that emotional reactions, urgency perceptions, and perceived financial gains from advertising stimuli all have a big influence on impulsive purchasing in the context of online shopping.

The integrated financial savings approach is the study's primary scientific contribution. Additionally, this study demonstrates that the behavioral traits of Generation Z customers differ from those of earlier generations. Promotions that are interactive, quick, and offer an emotional online purchasing experience tend to be more appealing to Generation Z. This phenomenon shows that today's digital marketing strategy is increasingly shifting from just offering low prices to building an emotional experience that is able to trigger spontaneous consumer actions. The study's findings have applications for e-commerce platforms and digital business people, especially in designing more effective promotional strategies for Generation Z consumers. Practically speaking, the results indicate that in order to increase customers' emotional engagement during online buying activities, e-commerce platforms should maximize urgency-based promotional elements such as countdown timers, limited stock displays, and real-time notifications. Additionally, combining price discounts and free shipping into a single campaign may boost Generation Z consumers' perception of value and enhance the efficacy of promotions.

Although the study has provided relevant findings, there are a number of limitations. First, the study only looked at Generation Z Shopee users in Bandung, which limited the findings' applicability to other demographics and geographical areas. Second, while other factors, including social influence, live streaming commerce, hedonic motivation, and electronic word-of-mouth may have an effect on impulsive purchasing behavior as well, this study only looked at flash sale, free shipping, and price discounts

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variables. Third, psychological factors like arousal and perceived value that potentially affect customers' impulsive purchasing behavior were not measured in this study. Future research should expand the study's scope, compare other e-commerce platforms, and include more psychological and behavioral traits in order to obtain a more comprehensive picture of digital consumer behavior.

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