

THE IMPACT OF SCARCITY AND FLASH SALE TECHNIQUES ON IMPULSE BUYING OF COSMETICS

Vera Rachmania¹, Muhammad Inzaghi Ramadhan², Siska Ernawati Fatimah^{3*}

^{1,2,3} Universitas Swadaya Gunung Jati, Indonesia

e-mails: ¹verarachmania01@gmail.com; ²minzaghir.idku@gmail.com; ³siskafebugeje@gmail.com

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ABSTRACT

Objective: This study examines the impulsive buying behaviour of cosmetic consumers on e-commerce platforms through the application of scarcity and flash sale techniques. **Research Design & Methods:** A total of 398 respondents from Cirebon City participated in this quantitative study, selected using an accidental sampling method. Data were collected through an online survey and analysed using Structural Equation Modeling-Partial Least Squares (SEM-PLS). **Findings:** Both scarcity and flash sale techniques influence impulse buying behaviour, with scarcity having the stronger effect. Flash sales stimulate urgency through limited-time offers, while scarcity enhances perceived value due to product limitation. **Implications and Recommendations:** Marketers are encouraged to combine flash sales and scarcity techniques to increase urgency and desirability. Brief, strategic discounts can effectively encourage unplanned purchases. **Contribution & Value Added:** This study provides valuable insights into e-commerce strategies that enhance impulse buying behaviour in the digital beauty sector.

Keywords: flash sale; impulse buying; scarcity techniques.

JEL codes: M21, M31

Article type: research paper

INTRODUCTION

In the contemporary globalised era, internet technology is evolving quickly. Thanks to technology, every aspect of human existence, including retail and business, has seen the introduction of new products. The developments in internet technology greatly impact people's daily lives. Because of the numerous uses of the Internet network, people and materials are interdependent. The internet accelerates every stage of the transaction process in online commerce on both sides. The most crucial aspect of an internet business is its capacity to profitably and efficiently link buyers and sellers (Ervina et al., 2024). There are numerous benefits to online purchasing and transactions for e-commerce consumers. People who utilise the internet may find what they're looking for more quickly and readily without spending much time and effort travelling to malls (Musadik, 2021).

Based on Figure 1, Tokopedia emerged as the most popular marketplace in Indonesia, with consumers choosing it for its more affordable prices and attractive promotions. Among the best-selling cosmetic products, several brands such as Wardah, Emina, and Purbasari dominate the market. These products are often offered at heavy discounts during promotional periods, encouraging impulse purchases among consumers. Frequent deep discounts encourage impulse purchases, making the platform an attractive place to shop for cosmetics online. In this regard, it is important to take a deeper look into the contribution of the care and beauty sector to total marketplace transactions. Micro-entrepreneurs must

use technology in their business endeavours as Indonesian e-commerce customers grow (Fatimah et al., 2024).

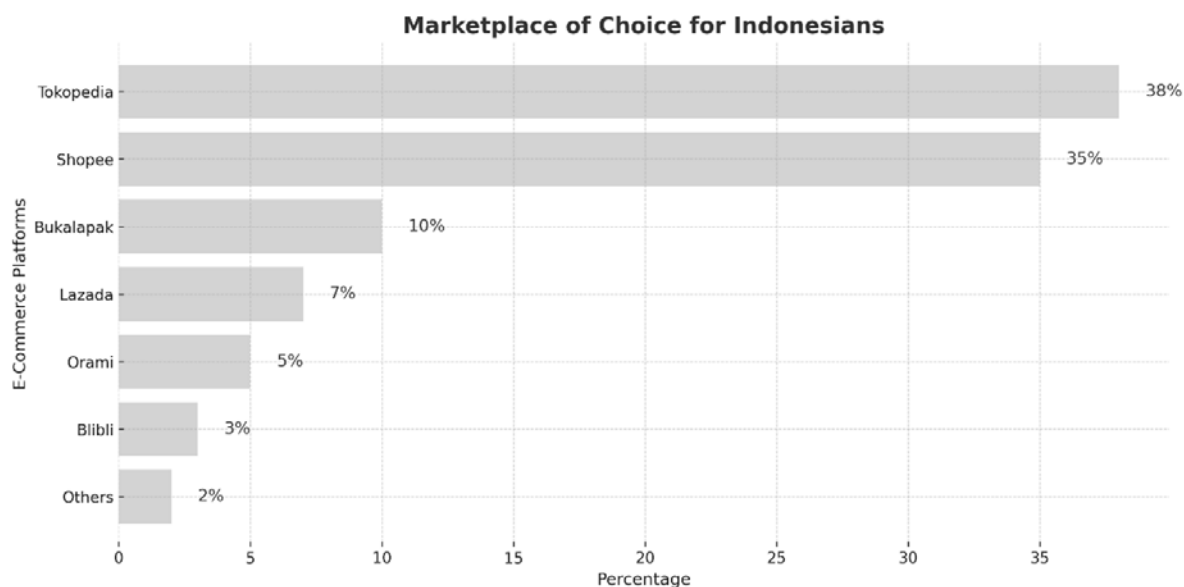


Figure 1. Marketplace of Choice for Indonesian

Source: Goodstats (2023)

Figure 2 shows that the care and beauty sector tops the list with a contribution of IDR 28.2 trillion from total marketplace transactions. This indicates that people have a very high demand for beauty products. The health (IDR 10.7 trillion), mother and infant (IDR 6.8 trillion), and food and beverage (IDR 11.8 trillion) sectors came next, with a total of IDR 57.6 trillion in transactions across all industries. People frequently regret their rash purchases and feel bad about them. People often buy more than they need to overcome these feelings and quickly feel fulfilled. The dominance of the care and beauty sector reflects the growing trend of spending in this category, where consumers tend to look for high-quality products and attractive offers.

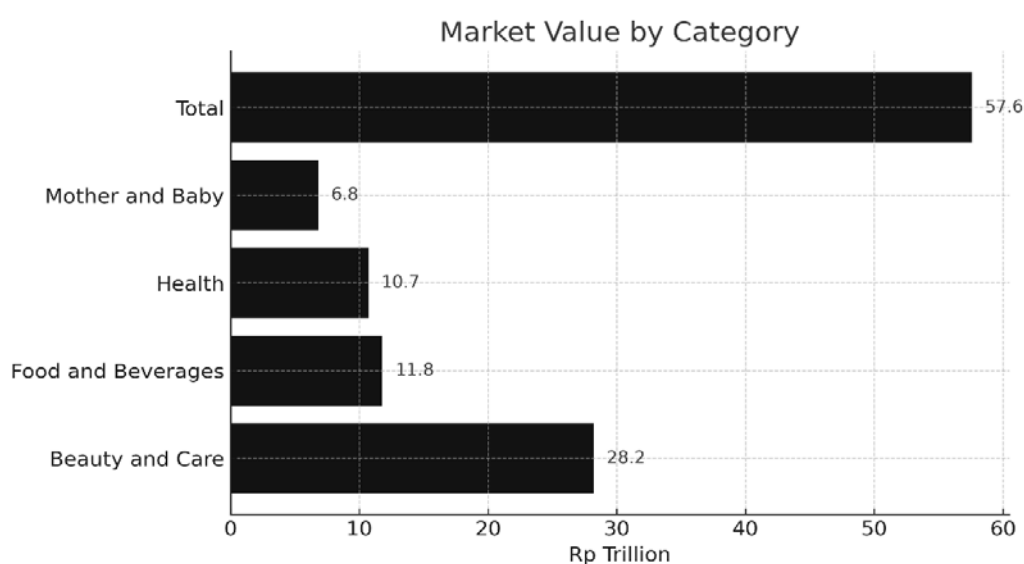


Figure 2. Care and Beauty to be the Top-Selling Category (2023)

Source: Databoks (2024)

Scarcity and flash sale techniques play an important role in influencing consumer purchasing behaviour, especially in the cosmetics industry. Scarcity can increase the value of products in the eyes of consumers, creating a sense of urgency that encourages them to act faster and make impulse purchases (Cialdini,

2009). Consumers' freedom is threatened due to scarcity communicated by marketers, triggering psychological reactions and encouraging them to take immediate actions such as in-store hoarding to protect their behavioural freedom (Musadik, 2021).

In online business, a Flash Sale is a way to sell items exclusively at a price that is much cheaper than the original price, and of course within a very limited time. A flash sale is a method of selling within a limited and relatively short period; it is a sale of products with limited quantities, affordable prices, and a limited time limit. Flash sales are only valid until the stock runs out (Nurfatria et al., 2024).

The problem in this study is the impulsive behaviour of consumers that tends to be unstable due to the influence of scarcity and flash sale techniques on e-commerce platforms. Consumers often easily switch to other products that offer more attractive promotions, thus creating challenges for business actors in maintaining consumer loyalty. Although scarcity and flash sale techniques have been widely applied in e-commerce, there is still a lack of in-depth research on how these specific techniques influence consumer impulsive buying behaviour, particularly in the cosmetics sector. Moreover, previous studies tend to focus on short-term promotional effects, without further exploring their implications for consumer decision-making and long-term loyalty. Therefore, it is important to understand how these two marketing techniques influence impulsive buying decisions in order to formulate more effective strategies.

The novelty of this research lies in exploring impulse buying behaviour specifically influenced by both scarcity and flash sale techniques in the cosmetics sector. While earlier studies have primarily focused on flash sales alone, they often neglect the role of scarcity in influencing consumer decisions. For example, studies by Fathia & Vania (2023) and Hermawan & Rofiq (2024) concentrated on flash sales as a trigger for impulse buying but did not explicitly incorporate scarcity as a determinant. This study bridges that gap by combining both scarcity (e.g., limited quantity, time-bound availability) and flash sales in the context of online cosmetic purchases. This integrated view allows for a deeper understanding of how these techniques collectively shape consumer impulse behaviours. Moreover, the study aligns the identified research gap with current market phenomena—such as intense competition and aggressive promotional tactics in Shopee and other Indonesian e-commerce platforms—where impulse buying is especially prominent among young female consumers. This alignment ensures the research has both academic value and practical relevance.

LITERATURE REVIEW

Scarcity Technique

This study is based on the Theory of Planned Behavior (TPB) developed by Ajzen (1991) which explains that a person's behavior is driven by behavioral intentions. These intentions are influenced by attitudes toward the behavior, subjective norms, and perceived behavioral control. Scarcity and flash sale strategies can influence these factors by shaping consumer attitudes and triggering emotional responses, thereby encouraging impulse buying behavior. Thus, TPB provides a relevant framework to understand how marketing stimuli affect spontaneous purchasing decisions (Lamis et al., 2022). Define scarcity as limited time and quantity, determining the number of stocks and periods where products can be purchased. In marketing, information about scarcity can increase attractiveness and encourage consumers to act faster. This creates a sense of urgency and can influence purchasing decisions Implicitly (Cialdini, 2009). Irrational variables, such as the sense of scarcity, can impact consumer behaviour. In another study, scarcity slogans put psychological pressure on consumers to impulsively increase the urgency to buy (Gabriella et al., 2024).

Scarcity has a positive effect on the evaluation and attitude towards scarce objects (Musadik, 2021). In this instance, a product or offer is only offered to customers for a fixed amount of time; after that, it is no longer available (Khairunnisa & Evanita, 2024). This optimistic outlook encourages spontaneous buying intentions and lessens the possibility that customers may search for better deals (Khairunnisa & Evanita, 2024). Limited time scarcity is indicated by (1) time limits, which limit the offer to a specific time; and (2) time urgency, wherein offers are provided with a strict deadline must be purchased right

away (Khairunnisa & Evanita, 2024). According to Musadik (2021), there are several forms of scarcity that affect impulsive buying behavior, namely: (1) quantity scarcity; and (2) resource scarcity.

Flash Sale

A flash sale is a type of limited-time sale that offers products at prices lower than their typical prices for a limited number of products for a limited amount of time (Rahmania et al., 2023). Shows that flash sales can effectively generate consumer interest and stimulate online shopping activities. Their research indicates that the time-limited aspect of flash sales attracts customers and forces them to make an urgent purchase, often increasing the revenue and customer engagement of e-commerce platforms. Flash sales are a component of an online marketing strategy used by manufacturers to draw attention and persuade customers to buy products based on Fathia & Vania (2023). A "flash sale" is an online business concept in which items are offered at discounted pricing for a brief period, typically a few hours or days. New online marketing and sales tactics trends are emerging as the e-commerce industry grows. Online business owners increasingly use flash sales as a tactical marketing and sales strategy. Because of the many discounts and promotions they provide, as well as the product price reductions, flash sales are anticipated by many. The parameters and measurements of flash sales according to consist of: (1) discounts during the promotion period, along with indicators of the quantity of discounts and coupons given during the flash sale; (2) flash sale duration, along with indicators of the duration and frequency of flash sales; and (3) number of products offered during the flash sale, along with indicators of the quantity of items offered during the flash sale and appealing flash sales.

Impulse Buying

People who do this usually buy things based on their feelings and make fast decisions without carefully analysing all the information or the consequences (Lucas & Ardansyah, 2024). Characteristic impulsive buying is judgements or actions made in-store without prior forethought. Unplanned purchases, sometimes referred to as impulse purchases, are made by customers who haven't made up their minds about what they want to buy based on the description given above. The ease of shopping pushes people to make excessive purchases, promoting debt habits enabled by the shopping platform (Utami, 2024). As a result, companies must quickly adjust to the fierce rivalry in the commercial sector. One suitable approach to deal with competition and a rapidly changing environment is the application of dynamic capabilities to create changes in business processes and facilitate relationships between businesses and consumers

People frequently regret their rash purchases and feel bad about them. People often buy more than they need to overcome these feelings and quickly feel fulfilled (Utami, 2024). Four indicators can be used to measure impulse buying: (1) spontaneity, which is an action taken suddenly and without prior planning and is a reaction that arises naturally and impulsively without careful consideration; (2) power, which describes a strong urge or need to do something with high strength or intensity, by having a feeling of compulsion or deep dependence on the action; (3) excitement and stimulation is a feeling of excitement or stimulation that arises as a result of an action, which is usually related to the search for sensations or experiences that are challenging and entertaining; (4) disregarding consequences is an attitude of ignoring or not caring about the consequences of an action. Individuals may act without considering the negative impacts that can arise (Fathia & Vania, 2023).

Hypothesis Development

Relationship between Scarcity Technique and Impulse Buying

A product that is difficult to find or experiencing scarcity will increase the value of the product. This high value motivates consumers to make impulsive purchases, Time and product limitations can trigger impulse buying behaviour among consumers. When a product is scarce and limited, consumers want it more, encouraging immediate purchases when the product is available (Rizki & Fordian, 2024). The impact of increased need due to scarcity indirectly supports impulse buying behaviour (Gabriella et al., 2024).

The limited amount of scarcity offers is restricted to a single, predetermined quantity of units. A

customer's purchase reduces the number of units available by one. This raises uncertainty about the scarcity of promotions for limited editions. If not, most consumers will believe that there are at least as many competitors as there are products available; as a result, determining the number of online shoppers interested in the target product requires time and effort. As a result, a given consumer's perception of competition with an unidentified group of competitors increases significantly with increasing scarcity of a limited quantity (Fathia & Vania, 2023).

From this description, a hypothesis can be drawn:

H1: There is a positive relationship between scarcity techniques and consumer impulse buying behavior.

Relationship between Flash Sale and Impulse Buying

Flash sales provide an impetus for consumers to make impulse purchases (Fathia & Vania, 2023). Flash sale programs encourage customers to make decisions based on impulsive, appealing, and needs-driven buying behaviours, which makes the decision-making process impulsive and prevents consumers from carefully weighing information and other options (Nguyen-Van et al., 2024). To obtain or purchase products customers are more likely to make purchases through e-commerce platforms, and these sales tend to encourage a person to make impulsive purchases.

Studies by Hermawan & Rofiq (2024) show that the effectiveness of flash sales in driving impulse buying behaviour varies among different consumer groups and contexts. While some consumers are strongly influenced by the urgency and discounts offered during flash sales, others may not experience the same level of impulsive buying. These studies imply that the influence of flash sales on consumer behaviour may be mitigated by elements including individual consumer traits, prior buying experience, and the type of products being offered. From this description, a hypothesis can be drawn:

H2: There is a positive relationship between flash sales and consumer impulse buying behavior.

Relationship between Scarcity Technique, Flash Sale, and Impulse Buying Behavior

Scarcity techniques in marketing aim to create the perception that a product or offer is only available in limited quantities or for a short time. This capitalises on the consumer's drive to buy now to avoid losing out (fear of missing out). Impulse buying in flash sales is often done. This can be proven in several studies flash sale has a significant effect on impulse buying (Fathia & Vania, 2023).

The scarcity strategy used in flash sales might affect impulsive buying, which is defined as an unplanned purchase brought on by strong feelings. Fathia & Vania (2023) explains that flash sales can encourage consumers to make purchases, which in turn can lead to unplanned purchases and increased purchases. Furthermore, those who regularly look for inexpensive products are happy when they find what they want because it brings in money (Nguyen-Van et al., 2024). From this description, a hypothesis can be drawn:

H3: There is a positive relationship between scarcity techniques and flash sale techniques.

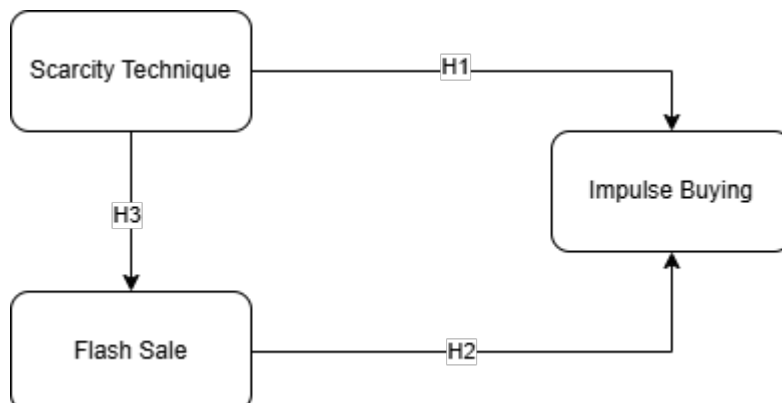


Figure 3. Conceptual Framework

Source: Author

METHODS

Population and Sample

A quantitative correlational design was employed in this investigation. Several data are analysed in quantitative research, and statistical techniques are used to determine how these variables relate to one another (Utami, 2024). Quantitative research is a method of gathering information that analyses data about our desired topics using numerical data (Utami, 2024). As per BPS Cirebon City (2024), 84,631 Cirebon City residents between the ages of 18 and 29 were used in this study. To determine the minimum sample size, the Slovin formula was used:

$$n = \frac{N}{1 + N(e)^2}$$

where:

n = minimum sample size

N = total population (84,631)

e = margin of error (0.05 or 5%).

$$n = \frac{84.631}{1 + 84.631(0,05)^2} = \frac{84.631}{1 + 211,5775} = \frac{84.631}{212,5775} \approx 398$$

Thus, the minimum sample size required for this study was 398 respondents. The sampling strategy employed was incidental sampling.

Data Analysis Method

The Structural Equation Model-Partial Least Squares (SEM-PLS) analysis was used to test these data (Goetha et al., 2024). While the PLS approach is especially intended to forecast the dependent variable, which typically comprises numerous independent factors, the SEM-PLS method is deemed appropriate for this research since it attempts to connect current theory with the data collected. Researchers frequently employ the SEM-PLS method, a multivariate analytic tool, to examine the interaction between several intricate factors and obtain a comprehensive picture of the model.

Measurement Variable

A research questionnaire was used to measure the variables. Using an A Like rating scale, a narrative questionnaire of the instrument was designed. In addition, all participants' answers were classified into five scores: strongly disagree (1), disagree (2), moderately agree (3), agree (4), and strongly agree (5). This variable was measured using the dimensions and indicators on Table 1.

Table 1. Measurement Variable

Variable	Code	Item Measurement	Source
Scarcity Technique X1	ST1	Limited time scarcity	(Khairunnisa & Evanita, 2024; Musadik, 2021)
	ST2	Time limiters	
	ST3	Quantity scarcity	
	ST4	Resource scarcity	
Flash Sale X2	FS1	The number of discounts	(Rosmaningsih et al., 2024)
	FS2	Vouchers offered during the flash sale	
	FS3	Flash sale duration	
	FS4	The length of the Flash Sale	
	FS5	The number of items provided during the flash sale	
	FS6	Attractive flash sales	
Impulse Buying Y	IB1	Spontaneity	(Rosmaningsih et al., 2024)
	IB2	Power, compulsion and intensity	
	IB3	Excitement and simulation	
	IB4	Disregard for consequences	

Source: Created by Authors 2025

FINDINGS

Descriptive Analysis

According to Table 2, 278 of the 398 survey respondents were female, 217 were between the ages of 21 and 25, and 217 held college degrees. The younger generation's strong interest in cosmetics, which are supposed to satisfy their need to appear confident and attractive, is reflected in this. They like the Shoppe marketplace since it is convenient and has a greater selection of goods.

Table 2. Respondent Demographics

Category	Possible Answer	F	%
Gender	Female	278	0.69
	Male	120	0.30
Age	17-20 Years Old	82	0.21
	21-25 Years Old	217	0.54
	≥26 Years Old	101	0.25
Education	Junior High School	3	0.8
	Senior High School	115	0.28
	College	214	0.53
	Academic	67	0.16
Marketplace	Tokopedia	106	0.27
	Shopee	204	0.51
	Tik Tok Shop	88	0.22

Source: Data processed 2025

Model Measurement Test Results

Outer model analysis aims to confirm that the measurement model is suitable. The basis for evaluating the model's suitability is its validity and reliability. The validity and reliability of the data were investigated in this study using several methods, such as construct reliability, Cronbach's alpha, average variance extracted (AVE), and outer loading. The results are shown in Table 3 and Figure 4.

Table 3. Measurement Model

Variable	Indicator	Outer Loading	AVE	Cronbach's Alpha	Composite Reliability
Scarcity Technique	X1.1	0.731	0.615	0.794	0.864
	X1.2	0.792			
	X1.3	0.813			
	X1.4	0.797			
Flash Sale	X2.1	0.742	0.592	0.862	0.897
	X2.2	0.756			
	X2.3	0.770			
	X2.4	0.774			
	X2.5	0.753			
	X2.6	0.821			
Impulse Buying	Y1	0.783	0.663	0.831	0.887
	Y2	0.821			
	Y3	0.827			
	Y4	0.824			

Source: Data processed 2025

Table 3 demonstrates that the scarcity approach has an outside loading of 0.813, which suggests that it significantly influences impulsive purchases. In the meantime, the flash sale displays an AVE value of 0.592 and an outer loading range from 0.742 to 0.821. With Cronbach's alpha for the scarcity approach at 0.794, the flash sale at 0.862, and composite reliability at 0.864 and 0.897, respectively, these two variables have strong internal consistency. The impulse buying variable shows an AVE of 0.663, Cronbach's alpha of 0.831, and composite reliability of 0.887. These results imply that flash sales and scarcity strategies can greatly boost impulsive purchasing.

Analysis Model Structure

Structures that attempt to forecast causal relationships between latent variables—variables that cannot

be measured directly—are evaluated using model analysis. R-square, F-square, and adjusted R-square are used to evaluate inner models. Table 4 are the corrected and converted R-squared values, along with their interpretations.

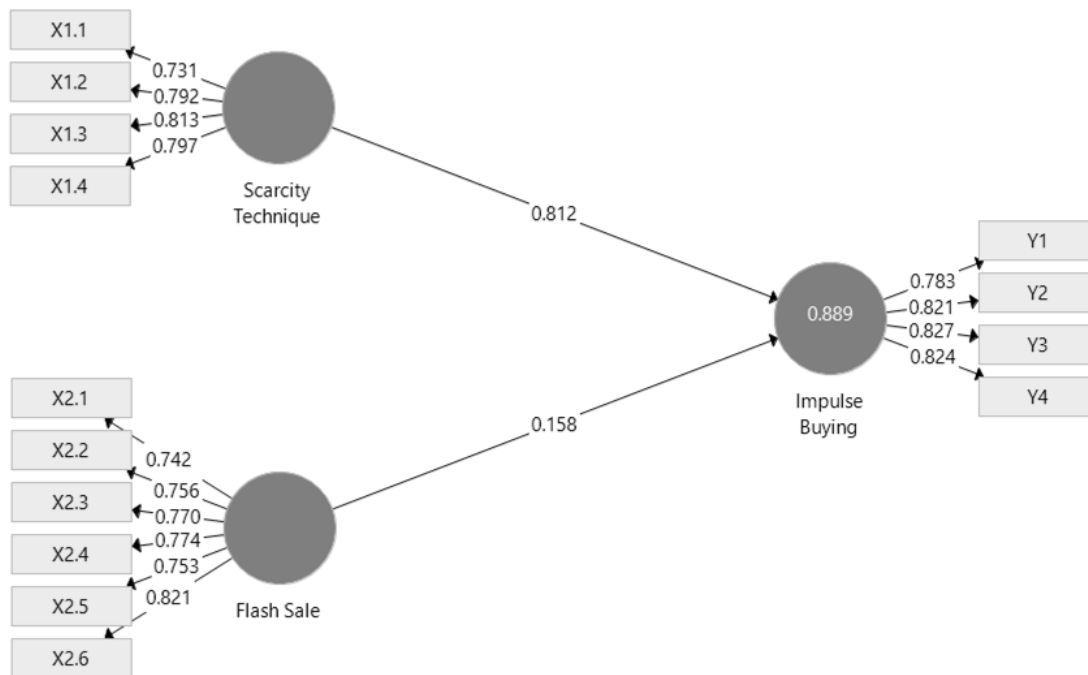


Figure 4. Path Analysis Output

Source: Processing data 2025

Table 4. The output of R Square and R Square Adjusted

Model	R Square	R Square Adjusted
Impulse Buying	0.889	0.888

Source: Processing data 2025

When the R-squared value exceeds 0.67, it is classified as strong (Ervina et al., 2024). The analysis's findings indicate that the variables in the model can account for roughly 88.9% of the variation in purchasing behaviour, with an R Square value of 0.889. Additionally, the results remain almost unchanged when the number of variables is adjusted, as seen by the adjusted R square value of 0.888. These findings show that the model can provide a clear explanation of the relationship between the examined variables. The data sources used in this analysis come from a systematic data processing process. As a result, the results generated are reliable. The F value of this study is:

Table 5. F Square Output

Variable	Impulse Buying
Technic Scarcity	2.129
Flash Sale	0.080

Source: Processing data 2025

The F square value analysis, which shows how much each variable affects impulse buying, is shown in Table 5. The two variables tested are technic scarcity and flash sale. The F square value for technic scarcity is 2.129, which indicates a very strong influence on impulse buying. Meanwhile, flash sale has an F square value of 0.080, meaning it has a weak influence. The data used in this analysis was processed through a structured and systematic procedure. These results help illustrate how much each factor contributes to impulsive purchasing.

Table 6. Summary of Hypothesis Testing

Hypothesis	Independent Variable	Path Analysis	t-value	p-value
H1	Scarcity -> Impulse Buying Technique	0.812	24.805	0.000
H2	Flash Sale -> Impulse Buying	0.158	4.171	0.000

Source: Data processing 2025

Hypothesis Testing

For direct and indirect hypothesis testing in this study can be seen in [Table 6](#). Technology scarcity and flash sales both influence impulse buying, as shown in the results. The path analysis shows that technic scarcity has a path coefficient of 0.812, with a t-value of 24.805 and a p-value of 0.000, which means the effect is strong and statistically significant. Meanwhile, flash sale has a path coefficient of 0.158, a t-value of 4.171, and the same p-value of 0.000, indicating a significant but smaller effect. These results show that scarcity techniques have a much stronger influence on impulse buying compared to flash sales. Marketing strategies that emphasize scarcity or urgency are proven to be effective in encouraging customers to make impulsive purchases.

DISCUSSION

The findings indicate that women between the ages of 21 and 25 make up the majority of responders, use cosmetics, and shop mostly on the Shopee marketplace. This reflects the younger generation's strong desire to seem confident and appealing and their intense interest in cosmetics. Using the scarcity technique reveals that scarcity elements have a value of 0.365, including time constraints or rapidly depleting supply, provide a sense of urgency that pushes buyers to make an instant purchase. This outcome aligns with the findings of ([Fathia & Vania, 2023](#)), Which claims that offering goods in limited amounts can arouse and stimulate customers by making them compete with one another for a commodity. The study's conclusions support previous research by demonstrating that shortage signals strongly influence impulsive buying ([Dahmiri et al., 2023](#)). Scarcity signals can influence impulsive buying by instilling a fear of missing the opportunity to purchase the item if they do not do so immediately. When consumers notice indications that product supplies are running low or will run out in a specific amount of time, they sometimes feel intimidated and move impulsively to purchase the goods to avoid missing the opportunity. The psychological theory of consumer behaviour, which holds that people are often more sensitive to possible losses than profits, is relevant to this case. Therefore, anxiety and the desire to purchase the thing on impulse before the chance is lost can be triggered by indicators of discomfort ([Fatimah et al., 2023](#)).

It has been demonstrated that flash sales significantly impact consumers' impulsive purchasing decisions, particularly in the cosmetics sector. The study's findings show that steep discounts offered for a brief period generate a significant sense of urgency, pushing customers to act fast on their purchases. Additionally, even though customers may not require the things being provided, the emotional temptation to buy increases during flash sales due to time constraints. Flash sales and scarcity tactics, such as limited inventory, are combined in the cosmetics industry to amplify this impact further and create a fear of missing out (FOMO). Customers often feel pressured to immediately buy to take advantage of great deals, especially those who follow beauty trends. This demonstrates that marketing methods focused on short-term promotions are visually appealing and successful in boosting sales among young, well-educated consumers. Flash sales are a psychological technique that affects impulsive purchasing behaviour and is a discount method. In the end, mechanisms like countdowns and limited availability generate a powerful emotional need that pushes customers to buy before the deadline passes. Cosmetics marketers can, therefore, make the most of this strategy to increase sales conversions, enhance client loyalty, and improve the appeal of their products. Research by [Hermawan & Rofiq \(2024\)](#) flash sales are a successful marketing strategy that uses countdown timers and affects customer psychology by offering substantial discounts for a short period. Customers are enticed to buy before the deadline because they want to acquire the discounted goods.

CONCLUSION

This research confirms that both scarcity and flash sale strategies significantly impact impulse buying behaviour among e-commerce consumers in the cosmetics industry, especially young female consumers aged 21–25 using the Shopee platform. Scarcity—through limited time or stock—creates urgency and increases product value in the eyes of consumers. Flash sales, by offering steep discounts within a short time frame, also trigger impulsive actions, although their effect is less dominant.

The combination of scarcity and flash sale techniques creates a synergistic effect, heightening the likelihood of impulsive buying. These findings provide a strong foundation for businesses to implement urgency-based promotional strategies.

CONFLICT OF INTEREST STATEMENT

The author declares that there is no conflict of interest regarding the publication of this article.

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