



The effect of scarcity messages and visual appeal on impulse buying among gen z shopee users in cirebon

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ABSTRACT

The rapid growth of e-commerce, particularly the Shopee platform, has driven massive shifts in consumer digital shopping behavior through various marketing tactics. This study aims to analyze the partial and simultaneous effects of scarcity messages and visual appeal on impulse buying behavior among Generation Z Shopee users in Cirebon City. This study uses a causal associative design and a quantitative methodology. 150 respondents who were chosen using the purposive sampling technique were given questionnaires to complete in order to collect data. Using SmartPLS 4.0 software, structural equation modeling based on partial least squares (SEM-PLS) was used to analyze the data. The findings reveal that scarcity messages have a favorable and substantial impact on impulsive purchases, indicating that time and stock constraints generate psychological urgency for young consumers. Furthermore, visual appeal also exerts a favorable and substantial impact on, demonstrating that attractive platform interface aesthetics successfully stimulate consumers' positive emotional responses. Simultaneously, the combination of scarcity message strategies and visual appeal contributes a strong influence on the level of impulsive purchasing by 60.1%. These results highlight the significance of integrating visual stimuli and scarcity appeals for digital marketers in optimizing sales volume in developing regional markets.

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1. INTRODUCTION

The evolution of digital technology has massively transformed the consumption patterns of modern society, particularly through the emergence of e-commerce, which offers convenience, speed, and flexibility in shopping. This phenomenon has become even more pronounced following the COVID-19 pandemic, during which online shopping activity increased significantly due to social restrictions and shifts in lifestyle toward digitalization (Li & Wu, 2023). Shopee is one of the biggest e-commerce sites in Indonesia that has effectively benefited from this change, known for its aggressive marketing strategy centered on visual promotions and scarcity messaging. In the city of Cirebon, the rise in Shopee usage has been particularly dynamic, especially among Generation Z, who

frequently make spontaneous purchases. This phenomenon of impulse buying has become a critical issue in the digital business landscape because it often occurs not out of genuine need, but as a result of systematic psychological stimulation designed by the platform (Sasmita & Yoestini, 2022). Impulse buying has significant economic implications; for consumers, it can lead to financial waste, while for platform providers, this strategy is a key driver for boosting sales volume and maintaining user loyalty.

Regarding the behavior of digital consumers, scarcity messages play an important part in stimulating spontaneous purchasing decisions. Messages such as “only 2 items left” or “offer ends in 1 hour” instill a sense of urgency and FOMO (fear of missing out), thereby encouraging consumers to make purchases without much deliberation (Zhang & Chen, 2022). (Xu and Huang, 2014) found that promotional strategies such as limited-time discounts and special offers can increase consumers’ spontaneous purchasing urges in online shopping environments. This variable is grounded in the Scarcity Principle Theory proposed by (Cialdini, 2009), which explains that individuals place a higher value on items perceived as scarce. This scarcity generates urgency and FOMO, thereby increasing the likelihood of impulsive purchases. Recent research supports this theory, as (Wu et al., 2022) that scarcity messages raise the level of emotional arousal and the intention to make impulsive purchases. (Li and Wu, 2023) note that scarcity messages reinforce consumers’ perception of urgency in e-commerce. (Nguyen and Tran, 2022) demonstrate that scarcity-urgency framing increases emotional reactivity among digital consumers, supported by (Chen et al., 2021), who report that limited-time and limited-stock scarcity increase impulsive purchase intention.

Scarcity messages typically have two main dimensions: limited-time scarcity and limited-quantity scarcity (Aggarwal & Vaidyanathan, 2021). Indicators used include promotion deadlines, limited stock, and purchase urgency (Aggarwal et al., 2020). The stronger the scarcity message received, the higher the tendency for impulse buying among consumers, especially on e-commerce platforms like Shopee that highlight flash sale features. Although (Lee and Chen, 2021) state that consumers with high self-control are better able to resist the influence of scarcity messages, among younger generations such as Gen Z in Cirebon City who tend to be reactive to time pressure and online promotions the effect of scarcity messages remains significant in driving spontaneous purchasing decisions. Based on this empirical foundation, the first hypothesis proposed in this study is:

H1: Scarcity messages have a positive and significant effect on impulse buying among Shopee users in the Gen Z demographic in Cirebon City.

However, the visual appeal of Shopee’s product displays and app interface also plays a major role in increasing impulsive purchase intent. Attractive visual design, bright colors, an interactive layout, and high-quality images can capture attention and foster positive emotions toward the product (Prasetyo et al., 2023). (Verhagen and van Dolen, 2011) also stated that attractive online store visual displays can enhance consumers’ comfort and positive emotions, thereby encouraging impulse buying behavior. This variable is grounded in the Emotional Design Theory developed by (Norman, 2004), which explains that design elicits three levels of response: visceral, behavioral, and reflective. The visceral response plays a crucial role in spontaneously evoking positive emotions when users view an appealing visual display, thereby driving faster and less planned purchasing decisions. According to recent research by (Prasetyo et al., 2023), it was found that visually appealing designs on e-commerce platforms enhance hedonic feelings and encourage impulse buying behavior. The dimension of visual appeal itself encompasses color harmony, layout design, and image quality (Chen & Liu, 2022), with indicators including color coordination, image clarity, and the aesthetic appeal of product displays (Yim et al., 2022).

With regard to e-commerce, attractive product displays and well-designed pages can increase perceived enjoyment and encourage unplanned purchasing behavior (Park

& Kim, 2020). (Akram et al., 2018) explained that various stimuli in the e-commerce environment, such as platform design and digital promotions, significantly influence consumers' impulse buying behavior. Research by (Li et al., 2023) demonstrates that harmonious visual elements enhance aesthetic pleasure, which leads to impulse buying. Conversely, (Rahman and Haque, 2021) found that visual appeal can lose its influence if consumers have high brand awareness or are more price-sensitive. However, among Gen Z Shopee users in Cirebon, attractive visual displays still play a major role in creating emotional stimuli that accelerate purchasing decisions. Bright designs, high-quality images, and the placement of discount icons serve as strong triggers for impulsive buying. Based on this discussion, the second hypothesis proposed is:

H2: Visual appeal has a positive and significant effect on impulse buying among Gen Z Shopee users in Cirebon.

Theoretically, this entire mechanism of behavior formation is rooted in the Stimulus-Organism-Response (S-O-R) Theory developed by (Mehrabian and Russell, 1974). This theory explains that human behavior is formed through stages of external stimuli (S) that influence the organism (O) in the form of emotions and perceptions, thereby eliciting a response (R) in the form of specific actions such as impulse buying. The synergy between scarcity messages and visual appeal can simultaneously reinforce impulse buying behavior because both evoke a combined emotional reaction that drives rapid purchasing decisions (Nguyen & Tran, 2022). When scarcity messages are presented with visually striking designs, consumers experience both a sense of time pressure and aesthetic stimulation simultaneously. (Zhang et al., 2023) state that this combination increases cognitive/emotional arousal that is, high emotional engagement that accelerates transactions. Although (Kim and Park, 2021) note that consumers with high digital literacy may mitigate the manipulative effects of this strategy, generally for Shopee users in Cirebon particularly young people who enjoy online shopping the combination of these two stimuli still significantly increases emotional arousal. Based on these arguments, the third hypothesis proposed is:

H3: Scarcity Messages and Visual Appeal have a simultaneous, positive, and significant effect on Impulse Buying among Gen Z Shopee users in Cirebon.

Although many previous studies have examined the factors influencing impulsive purchases, the local context is still lacking, particularly among e-commerce users in Cirebon, who exhibit distinct consumption patterns and purchasing power compared to those in major cities like Jakarta or Surabaya. Consequently, The purpose of this study is to better understand how scarcity messages and visual appeal influence impulse buying behavior among Shopee users in Cirebon. The primary objective of this research is to analyze the influence of scarcity messages and visual appeal on impulse buying among Shopee users in Cirebon. More precisely, this research aims to clarify the degree to which scarcity messages conveyed through promotional campaigns can influence spontaneous purchasing decisions, as well as how visual elements of the platform and products reinforce these effects. Additionally, this study aims to provide relevant empirical insights into the behavior of digital consumers in regions with mid-level economic development, such as Cirebon, which is beginning to exhibit rapid growth in online shopping dynamics.

This study is novel because it incorporates the scarcity message and visual appeal variables in the context of impulse buying behavior. Previous studies have tended to examine these two variables separately. For example, research by (Siregar and Firdausy, 2024) showed that scarcity have a favorable and noteworthy impact on impulse buying behavior in the context of e-commerce live shopping, where scarcity messages were found to increase the urgency of consumer purchases. Meanwhile, a study conducted by (Sasmita and Yoestini, 2022) identified that visual appeal and product portability influence impulse buying through hedonic browsing among Shopee app users in Semarang. Both studies demonstrate that both scarcity messages and visual appeal are

essential to driving impulsive purchasing behavior; however, no research has simultaneously combined these variables within a single analytical model. Thus, the purpose of this work is to close this gap by empirically testing the combined effect of scarcity messages and visual appeal on impulse buying, so adding fresh perspectives to the development of the literature on digital consumer behavior.

Although previous studies have examined the influence of scarcity messages and visual appeal on impulse buying behavior, several research gaps remain unaddressed. First, previous studies have generally investigated these variables separately rather than integrating them into a single conceptual framework. For example, Siregar and Firdausy (2024) focused on the effect of scarcity strategies in the context of live shopping, while Sasmita and Yoestini (2022) examined visual appeal through the mediating role of hedonic browsing. Consequently, empirical evidence regarding the simultaneous influence of scarcity messages and visual appeal on impulse buying remains limited. Second, most previous studies have been conducted in large metropolitan areas, whereas research focusing on consumers in developing regional cities such as Cirebon remains scarce. Differences in digital shopping behavior, purchasing power, and responses to marketing stimuli may lead to different consumer behavior patterns. Therefore, this study addresses both theoretical and contextual gaps by examining the simultaneous effects of scarcity messages and visual appeal on impulse buying among Generation Z Shopee users in Cirebon.

From a theoretical perspective, this study contributes to the consumer behavior and digital marketing literature by integrating Scarcity Principle Theory (Cialdini, 2009), Emotional Design Theory (Norman, 2004), and the Stimulus–Organism–Response (S-O-R) framework (Mehrabian & Russell, 1974) into a single research model. This integrated framework provides a more comprehensive explanation of how scarcity messages and visual appeal jointly influence consumers' emotional responses and subsequently encourage impulse buying behavior. Unlike previous studies that examined these variables independently, this study demonstrates that psychological urgency generated by scarcity messages and positive emotions evoked by visual appeal can simultaneously stimulate impulse buying in an e-commerce environment.

From a theoretical standpoint, this study is expected to enrich The body of research on customer behavior in relation to digital marketing, particularly regarding the visual and psychological stimuli that trigger impulse buying in e-commerce. Additionally, the results of this investigation could expand conceptual models about the connection between digital promotional factors and consumer behavior in the post-pandemic era. From a practical perspective, The study's findings can be used as a guide by e-commerce companies and digital marketers in designing more effective promotional strategies, by leveraging scarcity messaging and visually appealing designs without causing negative effects on consumers. For Shopee, these findings can inform an evaluation of the effectiveness of local promotional strategies in the Cirebon region, aiming to enhance the user experience while fostering more sustainable purchasing behavior. In general, this study emphasizes how crucial it is to comprehend the interaction between visual elements and scarcity messaging in shaping impulsive shopping behavior among digital consumers. By empirically examining this phenomenon in Cirebon, the study is expected not only to provide an up-to-date picture of local consumer behavior trends but also to serve as a key reference for developing e-commerce marketing strategies in Indonesia.

2. RESEARCH METHOD

This study uses a causal-associative research design and a quantitative methodology, aiming to test and analyze the relationship and causal influence between independent variables and the dependent variable within a structured model. The independent variables in this study include Scarcity Message (X1) and Visual Appeal (X2), while the

dependent variable is Impulse Buying (Y). To provide a clear, comprehensive, and systematic visualization of the structural pathways, variable dimensions, and proposed directional hypotheses (H1, H2, and H3) tested under this research design, the operational framework of this study is presented in Figure 1 below.

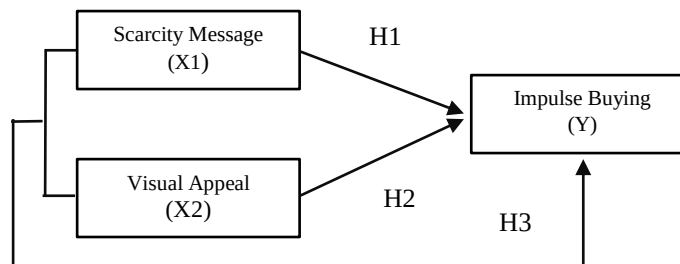


Figure 1. Research Framework

The research location is focused on the administrative area of Cirebon City, West Java. During the 2025–2026 school year, systematic primary data collecting was carried out.

All members of Generation Z make up the study's population (born between 1997 and 2012) in the city of Cirebon who actively use the Shopee e-commerce platform. Given that the actual population size cannot be precisely identified (unknown population), An estimate based on the Structural Equation Modeling–Partial Least Squares (SEM-PLS) model was used to establish the minimal sample size. The SEM-PLS approach stipulates that a representative sample size is at least 5 to 10 times the total number of operational indicators found in the study model. Based on the total of 15 operational indicators used in this study (5 Scarcity Message indicators, 5 Visual Appeal indicators, and 5 Impulse Buying indicators), the sample size was set at 150 respondents. The sample strategy used a purposive sampling approach with a non-probability sampling method (Mumtaz et al., 2025). The determined sample criteria include: (1) Respondents aged 17 to 25 years who represent the Generation Z group in Cirebon City; (2) Possess an active account and have made at least two product purchases on the Shopee app within the last six months.

A digital survey (Google Form) that was sent separately to the intended respondents was used to gather primary data. Each questionnaire item was measured using a 5-point Likert scale to identify the level of agreement, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The following describes the measurement indicators and operational definitions for every variable construct in this study: (a) Scarcity Message (X1): Measured using 5 indicators (X1.1 to X1.5) adapted from the dimensions of limited-time scarcity and limited-quantity scarcity, covering aspects of promotional time limits, product stock limitations, and the urgency of purchase decisions (Aggarwal & Vaidyanathan, 2021). (b) Visual Appeal (X2): Measured using 5 indicators (X2.1 to X2.5) derived from Emotional Design Theory (Norman, 2004), covering the dimensions of color harmony, layout design, and image quality (clarity of product image quality) (Chen & Liu, 2022). (c) Impulse Buying (Y): Measured using 5 indicators (Y1 to Y5) based on the Stimulus-Organism-Response (S-O-R) theory (Mehrabian & Russell, 1974), encompassing unplanned, spontaneous purchasing behavior, an urgent emotional impulse (kinetic impulse), and a disregard for the evaluation of financial consequences (Park & Kim, 2020).

To provide greater clarity regarding the measurement of each construct, the indicators used in this study are described as follows. The Scarcity Message construct was measured using five indicators adapted from the dimensions of limited-time scarcity and limited-quantity scarcity proposed by Aggarwal and Vaidyanathan (2021). These

indicators include: (1) limited promotional time, (2) countdown or deadline reminders, (3) limited product stock availability, (4) perceived urgency to make a purchase, and (5) exclusivity of promotional offers.

The Visual Appeal construct was measured using five indicators derived from the dimensions of color harmony, layout design, and image quality based on Emotional Design Theory (Norman, 2004) and the framework proposed by Chen and Liu (2022). The indicators include: (1) harmony of colors displayed on the platform, (2) attractiveness of the interface layout, (3) clarity of product images, (4) consistency of visual design elements, and (5) overall aesthetic appeal of product displays.

The Impulse Buying construct was measured using five indicators adapted from the Stimulus–Organism–Response (S-O-R) framework (Mehrabian & Russell, 1974) and online consumer behavior studies by Park and Kim (2020). These indicators include: (1) unplanned purchasing behavior, (2) spontaneous purchase decisions, (3) sudden purchase urges, (4) emotionally driven buying tendencies, and (5) disregard for the evaluation of financial consequences when making purchasing decisions.

Using SmartPLS software version 4.0, variance-based structural equation modeling was used as the data analysis method in this study. In compliance with (Hair et al., 2019)'s methodological recommendations, the statistical model testing process was conducted in two main stages: assessment of the measuring model (outer model) and the structural model (inner model). By monitoring the outer loading parameters (> 0.70), the outer model testing was designed to assess the instruments' validity and dependability, the Average Variance Extracted (AVE > 0.50), as well as the Cronbach's Alpha coefficient (> 0.70) and Composite Reliability (CR > 0.70). Additionally, the inner model, or structural model testing is used to assess the model's predictive accuracy and to demonstrate the significance of the research hypotheses, both partially and simultaneously. The inner model analysis was evaluated using the coefficient of determination (R^2), effect size (f^2), path coefficients, and statistical significance estimates via the bootstrapping method, with criteria of a t-statistic value > 1.96 and a p-value < 0.05 at a 5% significance level.

3. RESULTS AND DISCUSSIONS

3.1 Results

This study utilized a sample of 150 respondents who use Cirebon City's Shopee e-commerce platform as members of Generation Z. As shown in detail in Table 1, the demographic features of the study participants were categorized by gender, age group, and primary activity status.

Table 1. Demographic Characteristics of Respondents

Characteristics	Category	Frequency (F)	Percentage (%)
Gender	Women	102	68,0%
	Men	48	32,0%
Age	Ages 17–20	42	28,0%
	Ages 21–25	108	72,0%
Activity Status	High School Students	11	7,3%
	College Students	64	42,7%
	Entrepreneurs	29	19,3%
	Other	46	30,7%

According to Table 1's data, women made up the majority of responders, totaling 102 people or 68.0% of the total sample. This indicates that the trend of online shopping on the Shopee platform among Generation Z in Cirebon City is dominated by women. In terms of age, the largest percentage was in the 21–25 age group, comprising 108 people

(72.0%). Meanwhile, based on activity status, the student group dominated the sample with 64 people, or 42.7%.

An evaluation of the measurement model (outer model) was conducted to ensure the validity and reliability of each latent variable indicator. Convergent validity was assessed based on factor loadings (outer loadings) and Average Variance Extracted (AVE) values. The results of the statistical calculations using SmartPLS 4.0 are summarized in Table 2.

Tabel 2. Measurement Model Assessment Results (Outer Model)

Variabel Laten	Indikator	Outer Loading	AVE	Cronbach's Alpha	Composite Reliability
Scarcity Message (X ₁)	X _{1.1}	0,819	0,640	0,859	0,899
	X _{1.2}	0,755			
	X _{1.3}	0,809			
	X _{1.4}	0,840			
	X _{1.5}	0,776			
Visual Appeal (X ₂)	X _{2.1}	0,770	0,604	0,836	0,884
	X _{2.2}	0,807			
	X _{2.3}	0,767			
	X _{2.4}	0,749			
	X _{2.5}	0,793			
Impulse Buying (Y)	Y ₁	0,834	0,674	0,879	0,912
	Y ₂	0,858			
	Y ₃	0,814			
	Y ₄	0,743			
	Y ₅	0,851			

The empirical results in Table 2 show that all operational indicators have outer loadings above the required standard threshold of 0.70. The AVE values for the Scarcity Message (0.640), Visual Appeal (0.604), and Impulse Buying (0.674) variables have exceeded the minimum prerequisite of 0.50, so all constructs are declared to be convergent valid. Furthermore, the Cronbach's Alpha and Composite Reliability (CR) values for all three variables are well above 0.70, confirming that all research instruments are reliable and consistent.

The structural model (inner model) evaluation comes next. The coefficient of determination (R^2) shown in Table 3 is used to evaluate the accuracy and predictive capacity of the model.

Table 3. Coefficient of Determination (R^2) Results

Variabel Dependen	R Square	R Square Adjusted
Impulse Buying (Y)	0,601	0,596

Based on Table 3, an R-squared value of 0.601 was obtained. This suggests that 60.1% of the variation in impulsive purchasing behavior among Generation Z Shopee customers in Cirebon can be explained simultaneously by the Scarcity Message and Visual Appeal variables, while the remaining 39.9% is explained by other variables outside this research model. This R^2 value categorizes this structural model as ranging from moderate to strong.

To assess the contribution or specific magnitude of the impact of each predictor on the Impulse Buying construct, an F-square (F^2) test was conducted, as presented in Table 4.

Table 4. Estimated Impact Effectiveness (f^2)

Independent Variables	Impulse Buying (Y)	Impact Category
Scarcity Message (X1)	0,301	Moderate to High
Visual Appeal (X2)	0,216	Moderate

The test results in Table 4 show that the f^2 value for the Scarcity Message variable is 0.301 (moderate to high impact category), and the Visual Appeal variable records a f^2 value of 0.216 (moderate impact category). The direction of the causal relationship and the significance of the hypothesis were evaluated using path coefficients via the SmartPLS 4.0 bootstrapping algorithm, summarized in Table 5.

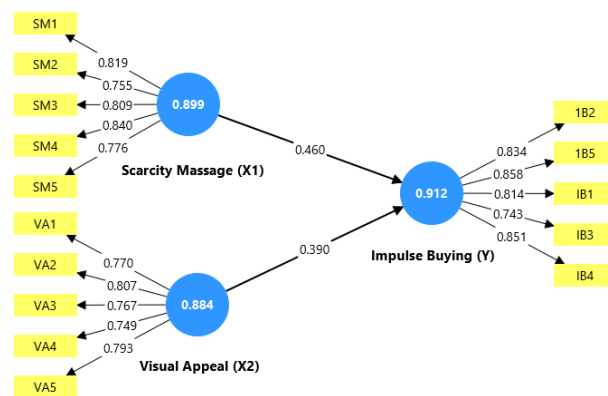


Figure 2. Research Model (SmartPLS Output)

Table 5. Hypothesis Testing Results

Hypothesis	Coefficient	Path Coefficient	t-Statistic	p-Value	Decision Status
H1	Scarcity Message → Impulse Buying	0,460	5,506	0,000	Accepted
H2	Visual Appeal → Impulse Buying	0,390	4,521	0,000	Accepted

Based on Table 5, the bootstrapping test results provide partial empirical support for the research hypotheses: (a) Testing the First Hypothesis (H1): Shows a positive path coefficient of 0.460 with a t-statistic of 5.506 (>1.96) and a p-value of 0.000 (<0.05). Thus, H1 is accepted, proving that the Scarcity Message has a positive and significant effect on Impulse Buying in part. (b) Testing the Second Hypothesis (H2): Shows a positive path coefficient of 0.390 with a t-statistic of 4.521 (>1.96) and a p-value of 0.000 (<0.05). Thus, H2 is accepted, proving that Visual Appeal has a positive and significant effect on Impulse Buying in a partial sense.

3.1 Discussion

Based on the results of the structural analysis, the first hypothesis (H1) which states that scarcity messages have a positive and significant effect on impulse buying among Gen Z Shopee users in Cirebon has been empirically validated. Positive path coefficients indicate that the more intense, clear, and urgent the scarcity messages displayed by Shopee are, the higher the tendency for impulsive buying behavior among young consumers in that region. Theoretically, this finding is highly consistent with the Scarcity Principle proposed by Cialdini, where information constraints such as product stock quantities or promotional deadlines (flash sales) have been shown to effectively trigger a high sense of psychological urgency among consumers. The pressure created by limited availability encourages individuals to make quicker purchasing decisions, thereby

reducing the likelihood of engaging in extensive rational evaluations before completing a transaction. These research findings support and expand upon previous research by (Siregar and Firdausy, 2024), which found similar effects in the context of live shopping marketing, confirming that tactics involving the manipulation of product availability serve as a highly potent stimulus within the contemporary digital marketing ecosystem.

The finding that scarcity messages exert the strongest influence on impulse buying behavior has important managerial implications for Shopee's marketing strategies. This result suggests that scarcity-based promotional tactics, such as flash sales, limited-time offers, countdown timers, and stock availability notifications, are highly effective in stimulating consumers' purchasing urgency and increasing transaction rates among Generation Z users. Therefore, Shopee should continue optimizing scarcity-oriented marketing campaigns by presenting clear and credible information regarding product availability and promotional deadlines. However, the implementation of such strategies should be balanced with transparency and ethical considerations to maintain consumer trust and prevent potential psychological fatigue resulting from excessive exposure to urgency-based promotional messages. Furthermore, integrating scarcity messages with visually appealing promotional content may enhance the effectiveness of digital marketing campaigns by simultaneously generating urgency and positive emotional responses among consumers.

In the testing of the second hypothesis (H2), It was discovered that among Gen Z Shopee customers in Cirebon, Visual Appeal has a favorable and significant impact on Impulse Buying. The positive direction of the coefficient confirms that the visual aesthetic beauty of the platform's interface, the harmony of promotional icon color schemes, the clarity of menu layouts, and high-resolution product images play a significant role in triggering spontaneous shopping impulses. These empirical findings provide concrete support for the integration of the Stimulus-Organism-Response (S-O-R) conceptual framework and Norman's Emotional Design Theory. An attractively designed digital store environment acts as a superior external stimulus capable of evoking positive emotional aspects (visceral response), such as joy, curiosity, and aesthetic satisfaction (hedonic browsing), for Generation Z, a group known for being highly visually-centric. It is these instantly aroused positive emotions that drive the final behavioral response in the form of unplanned purchase transactions. These research findings align with the results of a study by (Sasmita and Yoestini, 2022) in Semarang, which stated that the visual appeal of Shopee's interface significantly contributes to increasing consumer shopping enthusiasm through the stimulation of a comfortable digital browsing experience.

Simultaneously, the combination of scarcity messages and visual appeal has been shown to exert a strong collective influence on the formation of impulsive purchasing behavior among Gen Z consumers in Cirebon, with an explanatory power of 60.1% as measured by the R-squared coefficient. The integration of these two stimulus variables creates a massive amplification effect in stimulating spontaneous consumption. When the psychological urgency driven by the text "limited stock" directly collaborates with the striking, interactive, and brightly colored promotional graphics on the Shopee app, Gen Z consumers' rational spending control weakens drastically. The regional phenomenon in Cirebon a city with a developing middle-class economic cluster reflects that the post-pandemic shift toward a digital lifestyle has shaped the characteristics of the local Gen Z population into a highly adaptive group, yet one that is also vulnerable to digital marketing tactics that blend visually appealing interfaces with the allure of exclusive offers.

4. CONCLUSION

This research successfully provides empirical evidence regarding the crucial role of digital marketing strategies in shaping spontaneous consumption behavior within the e-

commerce ecosystem. The main findings of this study indicate that the variables “Scarcity Message” and “Visual Appeal” have a positive and significant influence, both partially and simultaneously, on impulse buying behavior among Generation Z users of the Shopee platform in Cirebon. The tactic of conveying scarcity messages through the manipulation of offer time limits (flash sales) or stock quantity restrictions serves as the strongest psychological stimulus, successfully triggering a sense of urgency and the fear of missing out (FOMO) among young consumers. Furthermore, the visual appeal of the Shopee app’s interface presented interactively with vibrant color harmonies and sharp product image quality has proven capable of evoking positive emotional responses (hedonic feelings) that instantly bypass Generation Z’s rational shopping evaluation process. Collectively, these two stimulus elements make a very strong contribution to explaining the variability in impulsive purchasing behavior within the Cirebon City regional cluster.

Based on these findings, e-commerce businesses and digital marketers are advised to continue optimizing the integration between the visual appeal of the app interface and various limited-time offer tactics to maintain sales volume, while still prioritizing transparency to avoid causing long-term psychological fatigue among consumers. This study is limited to examining the effects of scarcity messages and visual appeal on impulse buying behavior among Generation Z Shopee users in Cirebon. Therefore, future research may expand the proposed model by incorporating additional variables that can provide a deeper understanding of digital consumer behavior. For instance, Fear of Missing Out (FOMO) may serve as a mediating variable that explains how scarcity messages translate into impulsive purchasing decisions. Likewise, hedonic browsing may be examined as a mediating mechanism through which visually appealing platform designs stimulate consumers’ positive emotions and purchasing impulses. Furthermore, self-control may be investigated as a moderating variable to determine whether consumers with higher levels of self-regulation are less susceptible to scarcity-based promotional strategies. Digital literacy may also function as a moderating factor, as consumers with greater digital knowledge and critical evaluation skills may be better equipped to assess online promotional messages and resist impulsive purchasing tendencies. The inclusion of these variables is expected to enhance the explanatory power of future models and contribute to a more comprehensive understanding of impulse buying behavior in e-commerce environments.

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