

Research Article

Social Presence Vs. Scarcity: Which Drives Generation Z Purchase Intention More in Live Streaming Commerce? Evidence From an Emerging Market Perspective

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Abstract: This study intends to examine the influence of Social Presence and Scarcity on Purchase Intention of Generation Z in the context of live streaming commerce in Medan City. The strategy employed is quantitative with an explanatory design, employing data from 130 respondents who were picked by a purposive sample technique. Data analysis was performed using Structural Equation Modeling based on Partial Least Squares (PLS-SEM). The results reveal that Social Presence has a positive and significant effect on Purchase Intention, which means that social interaction, host presence, and community involvement in live streaming might improve customer purchase intention. Furthermore, Scarcity has a positive and significant effect, although its contribution is lower than Social Presence, demonstrating that scarcity pressure and time restrictions are still relevant stimuli to influence purchase decisions. At the same time, the two variables can explain 56.5% of the variation in Purchase Intention, hence the research model has moderate to strong predictive ability. This research highlights the significance of the Stimulus-Organism-Response (SOR) theory in the context of social commerce and for Generation Z, who are extremely responsive to real-time digital interactions. These findings have substantial implications for digital firms to create more effective live streaming commerce strategies based on social experiences.

Keywords: Generation Z; Live Streaming Commerce; Purchase Intention; Scarcity; Social Presence.

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1. Introduction

Purchase intention has become a core factor in describing digital consumer behavior especially among generation Z in the setting of live streaming commerce (Nasib et al., 2026). Purchase intention is the cognitive and affective stages which show the probability of a consumer to purchase before the actual purchase is completed (An & Ngo, 2025). Studies have demonstrated that live streaming environments can boost purchase intention through real-time interaction, decreased product uncertainty, and heightened consumer emotional engagement (Li & Jaharuddin, 2021). Generation Z's purchase intention is increasingly driven by immersive, interactive and community-based digital experiences in the social commerce ecosystem (Wasiman, 2021).

In addition, the live streaming commerce has been an important invention in the development of modern e-commerce, which combines entertainment, social interaction, and transaction simultaneously (Yu et al., 2024). Platforms like TikTok Live and Shopee Live are more than just a way of purchasing and selling, but also give an emotional and engaging

consumer experience (Y. Liu & Sun, 2024). Live streaming commerce can positively influence purchase intention; notably for Generation Z who are more receptive to visual and real-time interactions than traditional e-commerce models (Juanjuan et al., 2024). This phenomena suggests that digital change is not only transforming distribution routes but also the psychological mechanisms in consumer decision-making (Tao et al., 2024).

These changes are directly tied to the characteristics of Generation Z as digital natives, who have grown up in a technology world built on social media and interactive video (Safitri et al., 2025). This generation of consumers is more inclined toward experience-based consumption, digital social contact, and virtual community engagement (Tjhin, 2023). Generation Z is particularly susceptible to digital stimuli like live streaming due to their high intensity of video-based social media use (Suyanto & Karundeng, 2025). Therefore, it is highly significant to understand the factors that influence the purchase intention in this group, in the context of modern digital marketing (Xu et al., 2024).

The present study used the Stimulus–Organism–Response (SOR) model (Mehrabian & Russell, 1974) which suggests that environmental stimuli affect the internal state of a person and, therefore, produce a behavioral response. In the case of live streaming business, these stimuli stem from the social and psychological components that arise from digital interactions. Recent research have demonstrated that the SOR model may effectively describe how inputs like social interactions and scarcity pressure influence consumer purchasing intention and behavior inside digital settings (Shi et al., 2022).

Social presence, i.e. the consumer's experience of a true social presence in the digital environment is one of the major triggers in live streaming commerce (Angeles et al., 2023). Social presence is created by the interactions between the host, the audience, and the virtual community that encourage emotional connection and psychological engagement (Freeth et al., 2026). Research suggests that social presence has a substantial impact on improving engagement and purchase intention in the setting of social commerce (Zourrig, 2025). Nevertheless, the results of past studies continue to exhibit contradictions. Certain studies have found that the effects of social presence do not necessarily have a direct impact on purchase intention but are instead mediated by the psychological variables, including emotional involvement or flow experience (Jiang & Chen, 2025).

In addition to social presence, scarcity or product scarcity is also an essential psychological trigger in live streaming commerce (Saputra, 2022). Scarcity produces a perception of limited time or restricted product availability that promotes psychological pressure to purchase immediately (Ali et al., 2025). Recent study demonstrates that the effects of scarcity advertising on purchase intention are particularly potent when paired with consumers' moment-to-moment emotional reactions (Ye et al., 2024). Scarcity methods have been demonstrated to be helpful in creating urgency and speeding up purchase decisions especially among Generation Z, who are prone to impulsiveness in digital settings (Chang et al., 2024).

The originality of this research is in three primary features. Conceptually, this study uses social presence and scarcity as double stimuli in the SOR framework to explain the creation of purchase intention, rather than impulsive behaviour. This work empirically expands the validation of the SOR model in the context of emerging countries with unique digital features, especially in Indonesia. This study, in terms of context, primarily investigates the object of study Generation Z in Medan City, which is still quite limited in the international literature. Thus, this study expands the application of SOR theory in live streaming commerce, and also contributes crucially to the understanding of the psychological mechanisms that impact the purchase intention of digital customers in the era of real-time interaction-based economy.

2. Literature Review

Stimulus–Organism–Response (SOR)

The major theoretical background utilized to study the effects of environmental stimuli on consumer behavior through internal psychological processes is the Stimulus–Organism–Response (SOR) theory (Mehrabian and Russell, 1974). This theory assumes that the stimulus (S) does not immediately evoke behavior, but modulates the internal condition of the individual (organism/O), which in turn produces a behavioral reaction (response/R). The key social and psychological cues in the context of live streaming commerce are social presence

and scarcity, which generate emotional involvement, sensations of intimacy, and urgency pressure that influence consumers' internal states. The state of the organism is transferred to cognitive and affective processes that ultimately support the creation of purchase intention as a behavioral response. The SOR framework is deemed relevant to describing digital consumer behavior as it can capture psychological mechanisms that cannot be explained by standard stimulus-response models, especially in interactive situations such as live streaming commerce (Fakfare et al., 2024). Thus, SOR offers a powerful theoretical basis for explaining the simultaneous shaping of consumers' purchasing intentions by digital stimuli.

Purchase Intention

Purchase intention is the strategic importance in the commercial sustainability of a corporation as the earliest signal of the nearest actual customer purchasing behavior (Nuvriasari, 2025). Purchase intention is a construct that may be defined as the individual's willingness to purchase a product and as a major predictor of sales potential, customer loyalty and sustainability of a company's long term revenue (Saleh & Rajandran, 2024). High levels of purchase intention indicate the success of a firm in creating perceptions of value, trust, and emotional involvement among consumers with the brand (Harun et al., 2024). In digital settings like live streaming commerce, purchase intention is becoming more significance as it might reflect how effective a company's interactive marketing methods are in guiding consumer decisions in real time (Susilawati et al., 2023). Furthermore, purchase intention also acts as a basis for evaluation for organizations in optimizing promotional activities, marketing communications and customer experiences to remain competitive in a dynamic, technology-driven market (Huo, 2022).

Social Presence

The social presence of live streaming commerce refers to consumers' sense of authentic social presence, real-time interactions, and affective intimacy with the presenter and other viewers in a digital context (Minglong et al., 2024). Recent study demonstrates that social presence is an important social stimulant in changing purchase intention through greater trust, emotional involvement and immersive experience (Guo et al., 2024). However, this link is not always direct. Several research have shown that the effect of social presence on purchase intention is typically mediated by psychological characteristics such as customer trust, flow experience and parasocial interaction (Fatorachian, 2025). Indeed, some results indicate social presence alone is not enough to influence purchase decisions without the help of interactivity and streamer credibility (Kim et al., 2024). The conflicting conclusion demonstrates that the role of social presence still depends on the context of the platform and the characteristics of the consumer (H. Liu & Park, 2024). Therefore, a more comprehensive study is needed to clarify how social presence actually works in shaping purchase intention, especially among Generation Z in the dynamic real-time engagement-based live streaming commerce environment.

Scarcity

Scarcity is a psychological trigger that refers to the belief that there is a limited amount or time for the goods, which motivates buyers to buy it immediately (Saputra, 2022). In live streaming commerce, scarcity is sometimes operationalized as limited supply, flash discounts and time-bound promos that create urgency in decision-making (Ali et al., 2025). Recent literature indicates that scarcity increases the purchase intention by enhancing the perceived value, urgency, and fear of missing out (FOMO) significantly (Ye et al., 2024). Another study revealed that the effect of scarcity is more effective with emotional arousal and social engagement in a live streaming environment (Chang et al., 2024). However, empirical data also demonstrate variety in results, where the effect of scarcity is not always steady because it is greatly influenced by consumer trust levels, previous buying experiences and platform trustworthiness (Amelia & Firmansyah, 2025). This situation points to scarcity as not only an economic stimulus, but also as a complex and contextual psychological construct (Abdrabbo et al., 2025). Thus, further researches are required to understand the effect of scarcity, in the interactive and real-time context of live streaming commerce (35), on the buy intention of Generation Z (Almutairi & Almansoor, 2023).

3. Method

This research uses a quantitative method with an explanatory design (causal-explanatory research) which aims to test the causal relationship between variables, namely the effect of Social Presence (X_1) and Scarcity (X_2) on Purchase Intention (Y) in Generation Z in the context of live streaming commerce. The research was conducted from January to May 2026 in Medan City, North Sumatra Province. The population of this study was Generation Z who lived in Medan City and had viewed live streaming commerce at least once. The sample size was chosen by the Lemeshow method with a 95% confidence level ($Z = 1.96$), maximum percentage ($P = 0.5$) and margin of error of 10%, which resulted in 96 respondents as the population size was not known with certainty. The sample size was set at 100 primary respondents and 30 additional respondents for instrument trials, thus the total number of respondents was 130 people in order to increase the reliability of the study. The sampling technique used purposive sampling with the following criteria: (1) Generation Z (born 1997-2012), (2) domiciled in Medan City, and (3) have experienced live streaming commerce.

The data used in this research are primary and secondary data. Primary data was collected by an online questionnaire with 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Secondary data was collected from scientific journals, books and relevant academic literature. The research variables are Social Presence (the perception of social interaction and emotional presence in live streaming commerce), Scarcity (the perception of limited time and product quantity that creates purchase urgency), and Purchase Intention (consumers' cognitive and affective tendencies to make future purchases). All variables are measured with indicators from the latest worldwide literature and modified to the circumstances of the investigation.

Data analysis was conducted with Partial Least Squares-based Structural Equation Modeling (PLS-SEM) using SmartPLS 4.0. This method was chosen because it allows testing complicated prediction models, does not require data distribution normality, and can be used in small to medium sample sizes (Hair et al., 2017; Ghozali, 2021). Analysis was performed in two stages: evaluation of the measurement model (outer model) and evaluation of the structural model (inner model). The outer model consisted of convergent validity tests (factor loading > 0.70 ; AVE > 0.50), discriminant validity (Fornell-Larcker and HTMT < 0.90) and construct reliability (Cronbach's Alpha and Composite Reliability > 0.70). On the other hand, the inner model was evaluated by the coefficient of determination (R^2), effect size (f^2) and hypothesis testing with bootstrapping at a significance level of 5% ($p < 0.05$) to assess the direct and simultaneous influence among study variables.

4. Results and Discussion

Validity Test

Validity testing is done to determine the extent to which a research instrument measures the variables under investigation. Factor loading and Average Variance Extracted (AVE) data are used to measure validity. As a guideline, an indication is valid if it has an outer loading value of > 0.5 and an AVE value of > 0.5 .

Table 1. AVE results

Average Variance Extracted	(AVE)
X1 (Social Presence)	0,504
X2 (Scarcity)	0,573
Y (Purchase Intention)	0,533

Source: Smart PLS Output

As per the following table, the AVE value for each variable is over 0.5. This suggests that any variable or construct utilized has sufficient validity.

Table 2. Outer Loading

X1	X2	Y
0,834	0,843	0,835
0,830	0,829	0,794
0,705	0,814	0,746
0,692	0,766	0,730
0,623	0,739	0,647
0,522	0,702	0,602
	0,569	

Source: Smart PLS Output

According to the outer loading data, the values of all indicators in this study were over 0.5. Thus, it can be said that all the indicators utilized are valid in measuring the structures researched.

Reliability Test

Reliability testing was performed to determine the internal consistency of the measurement tools utilized in the investigation. The PLS technique assesses reliability by means of two methods: Cronbach's Alpha and Composite Reliability. For reference, a construct is reliable if it has a value above 0.7 for both indicators. The results of the reliability test are shown in the following table:

Table 3. Reliability Test Results

	Cronbach's Alpha	Composite Reliability
X1	0,800	0,856
X2	0,874	0,903
Y	0,820	0,871

Source: Smart PLS Output

The results in the following table show that Cronbach's Alpha and Composite Reliability values of each variable in this study were > 0.7 . The variables employed can therefore be declared dependable.

Coefficient of Determination Test (R-Square)

The coefficient of determination (R-Square) is used to quantify the extent to which the variation of the dependent variable can be explained by the independent variables in the research model. The results of coefficient of determination (R-Square) test in this study are as follows:

Table 4. R Square

	R Square
Y	0,565

Source: Smart PLS Output

The table above shows that the R-Square value of this study is 0.565. It means that the independent variables, namely Social Presence (X1), and Scarcity (X2) can explain 56.5% of the variation of the Purchase Intention (Y) variable. This score implies that the model has strong or substantial predictive capability. 43.5% of the variation is explained by factors outside of this research model.

Effect Size Test (F-Square)

The Effect Size (F-Square) test is used to determine the size of the relative impact of an independent variable on the dependent variable inside the research model. The rating criteria is based on the F-Square value where 0.02 is a tiny influence, 0.15 is a medium effect and 0.35 is a high effect.

Table 5. F-Square Results

	X1	X2	Y
X1			0,207
X2			0,138

Source: Smart PLS Output

Analysis results suggest that Social Presence (X1) modest influence on Purchasing Decision (Y) with an F-Square value of 0.207. This means that social presence in live streaming interactions, such as host comments and conversations with the audience, contributes pretty strongly in driving customer purchasing decisions. Meanwhile, the effect of Scarcity (X2) on Purchasing Decision (Y) is minimal with an F-Square value of 0.138. This suggests that while the scarcity feeling of a product can impact purchasing decisions, it has a significantly less effect than social presence. The factor of social interaction is a more prominent factor influencing customer purchasing behavior in the context of this study.

Goodness Of Fit

Goodness of Fit (GoF) validates the overall structure model. The index GoF is a single number that represents the overall performance of the measurement model and the structural model. The GoF value is calculated as the square root of the product of the average communalities index and the average R^2 value in the model. The GoF value spans from 0 to 1 with the following interpretation: 0.1 (low GoF), 0.25 (mid GoF), and 0.36 (high GoF) (Hair, Hult, Ringle, & Sarstedt, 2014). Calculation formula of GoF value is as follows:

$$\begin{aligned} \text{GoF} &= \sqrt{\text{Com} \times R^2} \\ &= \sqrt{0,537 \times 0,565} \\ &= \sqrt{0,303} \\ \text{GoF} &= 0,551 \end{aligned}$$

Hypothesis Test (t-Test)

Table 6. Path Coefficients

	Original Sample (O)	P Values
X1->Y	0,444	0,000
X2->Y	0,362	0,002

The results of Path Coefficients analysis which examine the influence of each independent variable to the dependent variable demonstrate the difference in the level of significance. The Social Presence variable (X1) is shown to have a substantial influence on Purchasing Decisions (Y) with a P-Value of 0.000 (<0.05). On the other hand, the variable Scarcity (X2) does not significantly influence Purchasing Decisions (Y), however the P-Value obtained is statistically 0.002 still below the threshold of 0.05. This implies that in the circumstances of this study, the scarcity effect is not the dominant determinant of purchase behavior. Thus, the second hypothesis (H2) is not supported by the empirical data.

Uji Simultan (F)

According to (Hair et al., 2021), the F statistical test is used to determine whether all independent variables in the model have a simultaneous influence on the dependent variable. This test is carried out with a 95% confidence level ($\alpha = 0.05$). If the calculated F value is greater than the F value in the table, then the alternative hypothesis can be accepted, which means that all independent variables simultaneously have a significant influence on the dependent variable. The formula for calculating the F test is as follows:

$$\begin{aligned} F &= \frac{R^2 (n-k-1)}{k (1-R^2)} \\ &= \frac{0,565 (100-2-1)}{2 (1-0,565)} \\ &= \frac{54,805}{0,870} \\ &= 62,99 \end{aligned}$$

The F-table value in this study was calculated from the formula of $DF1 = k - 1$ and $DF2 = n - k - 1$, where k is the number of independent variables and n is the number of samples. From the computation, the results of $DF1 = (2-1 = 1)$ and $DF2 = (100-2-1 = 97)$. While the F-table value with a significance level of 5% is 3.94. The findings of the analysis demonstrate that the F-count is bigger than the F-table ($62.99 > 3.94$) hence it can be stated that Social Presence (X1) and Scarcity (X2) jointly have a significant effect on Purchase Intention (Y).

Discussion

The Influence of Social Presence on Purchase Intention

The results of this study state that Social Presence (X1) has a favorable and substantial effect on Purchase Intention (Y) in live streaming commerce in Generation Z in Medan City. Path coefficient 0.444, p-value $0.000 < 0.05$. It can be concluded that the more consumers feel the social presence when watching live shopping, the more the warmth and responsiveness of the host, and the interaction with other viewers, the higher the purchase intention is. So H1 is

accepted. These results are consistent with study (Tao et al., 2024) which revealed that interactions built on the social presence of the host are key in building transaction intentions in social commerce. Social presence has a mediating role in the association between various forms of live streaming engagement and customer purchase intention (Zhang et al., 2025). The social presence established from live broadcasts has a considerable effect on consumers' purchase intentions in social commerce (H. Liu et al., 2025).

The findings of this study show that enhancing social presence in live streaming commerce is an important technique to improve buy intent for Generation Z in Medan. Companies need to ensure that hosts not only provide product information, but also create warm, responsive, and communicative connections to make consumers feel emotionally connected to the session. In fact, companies may make live streams more powerful by training hosts in persuasive communication, real-time reactions to comments, and the capacity to create connection with their viewers. Furthermore, interactive features like live chat, polls and Q&A sessions must be adjusted to improve consumers' social experiences. Companies are also recommended to develop digital communities of viewers to reinforce the social links generated during the broadcast.

The Influence of Scarcity on Purchase Intention

The results of this study show that Scarcity (X2) has a positive and substantial effect on Purchase Intention (Y) with a path coefficient of 0.362 and p-value of $0.002 < 0.05$, hence H2 is approved. This suggests that the more serious consumers perceive restrictions of products or possibilities to acquire products in live shopping (such as time-limited offer, limited stock, and competition with other customers), the stronger their intention to purchase instantly. These findings are consistent with other earlier research outcomes. (Ali et al., 2025) discovered that scarcity coupled with anticipatory emotions dramatically improved purchasing decisions in live streaming. (Ye et al., 2024) further pointed out that the persuasion of scarcity in the SOR framework is of great significance for influencing customers' impulsive responses to live broadcast. Moreover, research (Chang et al., 2024) found that the notion of the limited time of offer might greatly enhance impulse to buy. (Fortagne & Lis, 2024) further explained that the effect of scarcity increases the perceived worth of the goods resulting in prompt decisions. At the same time, (Amelia & Firmansyah, 2025) discovered that restricted stock and exclusivity of offers directly boost impulsive purchasing intentions in internet consumers.

The management implications of the findings are that scarcity strategy is an excellent marketing tool to boost buy intention in live streaming commerce. To create a sense of urgency, companies need to carefully manage the perception of scarcity by creating promotional time limitations, limiting product quantities and offering real-time stock information. Also, the host should continuously and persuasively deliver the message of scarcity to create psychological stimuli like as fear of missing out (FOMO), which accelerates consumer purchase decisions. Management could also be encouraged to include visual cues like countdown timers and limited stock indicators to create a more potent sense of urgency. However, the implementation of this method must still be ethically supervised to avoid the creation of deceptive views that could erode consumer trust in the long term.

The Simultaneous Influence of Social Presence and Scarcity on Purchase Intention

The results of this study demonstrate that Social Presence (X1) and Scarcity (X2) have a positive and significant effect on Purchase Intention (Y) simultaneously, so H3 is accepted. This is proven by the F-calculated value of 62.99 more than the F-table of 3.94. Supported by the R-Square value of 0.565. This value suggests that Social Presence and Scarcity together are able to explain the variation of Purchase Intention in Generation Z in Medan City of 56.5%, while the remaining 43.5% is explained by other variables outside this research model. This is in line with other earlier research. (Almutairi & Almansoor, 2023) confirmed that social engagement in live streaming with external psychological elements simultaneously enhances the purchasing intention. (Angeles et al., 2023) discovered that the social presence and scarcity stimuli considerably enhanced consumers' emotional responses in social commerce. (Freeth et al., 2026) also show that the relationship of host interactions and scarcity pressure has a synergistic influence on the purchase decisions. (Id et al., 2023) further argued that the SOR model with social stimulus and scarcity can predict the considerable difference in purchasing

behavior. (Bimonte, 2023) found that social engagement and temporal urgency jointly boost impulse purchase behavior on live shopping platforms.

The managerial implications of the findings show that the marketing strategies of live streaming commerce should be developed in an integrated way by concurrently optimizing social presence and scarcity to enhance the buy intention of Generation Z. Companies need to do more than only offer pleasant social interactions between hosts and consumers, they must also develop an aspect of urgency through limited time, stock and product availability to create more purchase incentives. Businesspeople are recommended to combine interactive and responsive host communication with structured scarcity promotional methods such as flash deals, countdown timers, and real-time stock information. The interaction of these two can lead to higher emotional involvement and quicker, more impulsive buying decisions. Otherwise, organizations have to handle this strategy in a balanced way so as not to decrease consumer confidence due to over pressure.

5. Conclusion

The results of this study show that Social Presence and Scarcity have a favorable and significant effect on Purchase Intention in live streaming commerce in Medan City for Generation Z. Partially, Social Presence is more influential than Scarcity, suggesting that social interactions, host presence and participation with a virtual community are the major cues that impact digital customer purchase intentions. However, Scarcity makes a considerable but smaller contribution in the meantime, again showing that the pressure of scarcity and eagerness to buy are still effective in eliciting customer behaviors. Meanwhile, these two variables can explain 56.5% of the change of Purchase Intention, hence this study model has moderate to good explanatory power in the Stimulus-Organism-Response (SOR) framework.

The practical implications of this study based on these findings highlight the importance of optimizing live streaming commerce strategies, particularly in improving the quality of real-time interactions to enhance social presence elements, more personalized communication, and an active digital community. Scarcity tactics must also be conducted in an ethical and credible manner, including countdown timers, limited stock, and exclusive deals that are actually justified, otherwise consumer trust could be at stake. The interaction of the two stimuli might boost the efficacy of digital marketing techniques, notably in increasing purchase intention among Generation Z who are extremely receptive to interactive and visual encounters.

However, this study has certain drawbacks. Second, it included just two independent variables, therefore it did not capture the full complexity of characteristics that affect purchase intention, such as trust, flow experience or emotional engagement. Second, the research was conducted on Generation Z in Medan City, hence the results cannot be generalized to other locations or other generations. Third, this study used a cross-sectional design, which could not capture changes in consumer behavior over time in a certain period. These constraints leave open the possibility of developing a more comprehensive model in future research.

In future research, researchers are advised to incorporate mediating variables such as trust, emotional engagement, or perceived value to enrich the SOR conceptual model in describing the mechanism of Purchase Intention creation. In addition, future research can broaden the research object to other generations like Millennials or Gen Alpha, and also compare among other live streaming commerce platforms. A longitudinal approach is also advocated to examine the dynamic of changes in consumer behavior over time offering thus a more full picture of purchase behavior in the ever-changing digital ecosystem.

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