International Journal of Educational Review, Law, and Social Sciences (IJERLAS)
ISSN: 2808-487X
Edition: Vol. 6 No.2 (2026)
https://radjapublika.com/index.php/IJERLAS/index

Strategic Scarcity Message in Live Commerce: Driving Impulsive Buying through Perceived Value and FOMO

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Keywords:
Impulsive Buying, FOMO, Perceived Value, Live Streaming, Scarcity Message.

Article Info:
Received:
15/02/2026
Revised:
2/03/2026
Accepted:
24/03/2026
Published:
31/03/2026

ABSTRACT

Addressing Indonesia's live commerce "conversion paradox," where livestream viewership increased from 71% to 86% while purchase rates remained stagnant at 56%, this study examines the inconsistent effectiveness of scarcity messages in stimulating impulsive buying behavior. Drawing upon the Stimulus–Organism–Response (S-O-R) framework, the study investigates whether scarcity messages influence impulsive purchases through the dual mediating roles of Fear of Missing Out (FOMO) as an emotional response and Perceived Value as a cognitive evaluation. A quantitative research design was employed using an online survey of 538 Shopee Live users across Indonesia. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to evaluate both the measurement and structural models. The findings reveal that scarcity messages do not exert a significant direct effect on impulsive buying behavior. However, scarcity messages significantly enhance both FOMO and Perceived Value. While FOMO significantly mediates the relationship between scarcity messages and impulsive buying, Perceived Value does not demonstrate a significant mediating effect. These results indicate that the emotional pathway represented by FOMO is more influential in driving impulsive purchases than the cognitive pathway represented by Perceived Value. This study contributes to the live commerce and consumer behavior literature by extending the application of the S-O-R framework to a nationwide Indonesian context and highlighting the dominant role of emotional mechanisms in shaping impulsive buying behavior. The findings suggest that marketers and livestream sellers should prioritize strategies that create a sense of urgency and fear of missing opportunities, rather than relying solely on communicating functional product benefits, to improve purchase conversion in live commerce environments.

How to cite: Mubarak, Z., David Ramdansyah, A., & Azie Setya, Y. (2026). Strategic Scarcity Message in Live Commerce: Driving Impulsive Buying through Perceived Value and FOMO. International Journal of Educational Review, Law And Social Sciences (IJERLAS), 6(2), 383–394. https://doi.org/10.5281/zenodo.20575343

Introduction

The rapid evolution of digital technology has drastically transformed the electronic ccommerce landscape. One of the most significant emergeing trends is livestream commerce, whice combines interactive live video features with online sales mechanism. Platforms such as Shopee Live, and TikTok live have pioneered a more dynamic and real time shopping experience for consumers. This phenomenon contributes significantly to impulsive buying behavior, where consumers make spontaneous purchases without prior planning. In the context of livestreaming, consumers are more easily driven to buy impulsively through immediate presentation and pressure from streamers (Lee & Chen, 2021). Therefore, impulsive buying has become one of the most effective marketing strategies to increase sales in the digital era (Kaur & Sharma, 2024).

Despite the rapid growth of this sector, a central business phenomenon driving this research is the "conversion paradox" within indonesia's livestream commerce sector. In 2023, consumer enthusiasm for livestreaming viewership surged to 86% (Jakpat, 2023), up from 71% in 2022 (Ipsos, 2022). However, despite this significant growth in engagement, the conversion rate remained stagnan, with actual purchase only 56%. This phenomenon indicates that while livestreaming successfully generates awareness and high traffic, it faces a

significant challenge in converting viewers into buyers. This reality is reflected in the struggles of sellers in Tanah Abang, despite offering the lowest prices and livestreaming for entended periods on platforms like tiktok live or Shopee Live, but many fail to generate transaction (tempo, 2023).

To address this stagnation streamers frequentyly employ scarcity message to create psychological urgency (Guo et al., 2016). However, the effectiveness of this strategy remains debated. Existing literature presents inconsistent findings regarding the impact of scarcity messages on impulsive buying. While some scholar (Tang et al., 2024 ; Feng et al., 2024) argue that scarcity appeals significantly drive impulsive buying, others (Rahmandani & Rahmidani, 2025; Rahma & Utami, 2025) found no significant direct effect. This inconsistency highlights a research gap, suggesting that the relationship is not direct but complex, likely mediated by internal psychological organisms.

This phenomenon indicates that although Indonesia possesses a vast potential consumer base for livestream shopping, converting this potential into actual impulsive buying remains a significant challenge for merchants, as evidenced by the many sellers who attempt livestreaming without success. This underscores that success in livestream commerce is not merely about lowering prices or livestreaming for extended periods, rather it requires creating urgency, capturing attention, and stimulating psychological drivers to trigger impulsive buying.

Against this background, the current study investigates the effectiveness of scarcity messages in increasing impulsive buying on the Shopee Live platform. Specifically, we aim to answear the following research questions: Does the scarcity message significantly influence impulsive buying in livestream commerce ?; How do scarcity messages trigger psychological responses, specifically perceived value and fear of missing out (FOMO) ?; and To what extent do these psychological factors mediate the relationship between scarcity messages and impulsive buying behavior ? in this sense, this study seeks to provide insights into the underlying psychological mechanisms driving the "conversion paradox" in Indonesia livestream sector. In doing so, this study enhances the current body of literature by utilizing the stimulus-organism-response (SOR) framework to explain the dual mediating roles of cognitive (value) and emotional (FOMO) factors.

In the following sections, we review the existing research om livestream commerce, exploring the S-O-R framwork and relevant theories on scarcity and impulsive buying. Next, we outline the research methods used, followed by the analysis and presentation of results and discussion. Finally, the paper concludes with a discussion and suggestions for furthere research.

Method

This This study targets the population of consumers using the Shopee e-commerce platform in Indonesia who engage in impulsive buying during Livestreaming sessions. The unit of analysis consists of individual consumers. Given that the exact population size is unknown and lacks a specific sampling frame, a non- probability sampling design, specifically purposive sampling, was employed to ensure relevance to the research objectives. Respondents were selected based on strict screening criteria :1 active Shopee users in Indonesia; 2 Have purchased products while watching Shopee Live; 3 admitted that the purchase was impulsive; and 4 made the purchase within the last six months to ensure recall accuracy.

Regarding the sample design, this study adopted the inverse square root method proposed by Kock & Hadaya (2018) to determine the minimum sample size. This method was chosen over traditional rules of thumb because of its proven precision in estimation and ability to maintain statistical power. The minimum sample size was determined using a minimum path coefficient (p_min) of 0.11, representing a small effect size, and a significance level of 5%. Based on this criterion, the minimum required sample size was calculated to be 511 observations.

The data collection process was conducted using an online survey method via Google Forms to efficiently reach a geographically dispersed population. The collection period spanned from December 4, 2025 to December 30, 2025. The survey link was distributed using paid advertising services on Instagram. This strategy allowed for precise targeting of respondents who fit the demographic and behavioral criteria of the study. Furthermore, to ensure data quality and mitigate common method bias, attention check items were embedded within the questionnaire. Respondents who failed to answer these instructional checks correctly were excluded from the final analysis to ensure the validity of the dataset (Hair et al., 2022).

The research instrument was a structured questionnaire designed to measure the variable of interest. To capture a wider range of responses and allow for more advanced statistical operations (such as mean and standard deviation), all items were measured using an interval scale ranging from 1 to 10, where "1" indicates "Strongly Disagree" and "10" indicates "Strongly Agree". The measurement items were adapted from established literature to ensure construct validity. The detailed measurement items and their respective sources are presented in table 1.

Table 1. Measurement Items

Variabel	Code	Measurement Items	Source
Scarcity Message	SM1	I perceived that the product stock was limited when the host mentioned only a few were left.	Chen et al. (2020); Hao & Huang (2024)
	SM2	I perceived that the product was in high demand when the host mentioned many people were buying it.	
	SM3	I perceived the need to buy immediately when the host reminded me that the promo time was running out.	
	SM4	I perceived this was a rare opportunity when the host offered an unusual promotion.	
	SM5	I perceived that the promotion is only available for a limited time when the host mentions its ending time.	
Perceived Value	PV1	I felt that the promotional price offered by the host was significantly lower than the regular price.	Sweeney & Soutar (2001)
	PV2	I felt that i received higher value from the product compared to its prices	
	PV3	I felt that the host offered a good quality product a tan affordable price	
	PV4	I felt that taking advantage of the promotion helped me save money.	
Fear of Missing Out	FM1	I was worried that this best offer would no avaiable again in future livestreaming	Zhang et al. (2020)
	FM2	I'm not want to be the only person who fails to take advantage of this good offer.	
	FM3	I felt that i would miss out on an enjoyable experience if i did not purchase the product.	
	FM4	I felt that i would regret missing this promotional offer if i did not make the purchase	
Impulsive Buying	IB1	I suddenly felt a strong urge to purchase the product while watching the livestream.	Rook & Fisher (1995)
	IB2	I purchased the product during the livestream without prior planning	
	IB3	My purchase decision was driven more by momentary desire than by actual need.	
	IB4	The process from seeing the producct during the livestream to completing the payment occurred very quickly	
	IB5	The low price offered during the livestream led me to check out immediately without careful rational consideration	

Source : Author's data analysis (2025)

The collected data were analyzed using Structural Equation Modeling (SEM) based on Partial Least Squares (PLS), utilizing SmartPLS software version 4.1.1.6. PLS-SEM was selected as the analysis method because it is capable of handling complex models with intervening variables and does not strictly require data to follow a normal distribution. The analysis began with the evaluation of the measurement model (Outer Model), assessing convergent validity (Outer Loadings > 0.70, AVE > 0.50), discriminant validity (HTMT < 0.90), and reliability (Cronbach's Alpha and Composite Reliability ≥ 0.70).

Following this, before testing the hypotheses, collinearity was assessed using the variance inflation factor (VIF). The structural model (Inner Model) was evaluated by examining the coefficient of determination (R2) and effect size (f2). To assess the model's predictive accuracy, the blindfolding procedure (Q2) was employed. A Q2 value larger than zero indicates that the model has predictive relevance for a certain endogenous construct (Hair et al.,

2022). Finally, hypothesis testing was conducted using the Bootstrapping technique with 5,000 resamples to determine the statistical significance (t-statistics > 1.96, p-value < 0.05) of the path coefficients and the specific indirect effects for mediation analysis.

Furthermore, to rigorously test the mediation effect size, this study employs the Upsilon V (v) calculation as proposed by Ogbeibu et al (2021) :

$$v = (a\ x\ b)^2 \quad (1)$$

This approach provides a more sensitive and accurate assessment of the mediation strength compared to traditional methods.

Results and Discussion

Profile of Responden

A total of 744 responses were initially collected. however, strict data screening was conducted to ensure the integrity and quality of the dataset. During this process, 206 responses were excluded, comprising 153 respondents who failed the attention check items and 53 respondents who exhibited straight-lining patterns (e.g., consistently choosing the same answer). As a result, 538 valid responses were retained for the final analysis. This final sample size was verified against the minimum requirement calculated in the methodology section. With a total of 538 respondents, the dataset exceeds the minimum threshold of 511 respondents (based on the inverse square root method with p_min=0.11), thereby ensuring sufficient statistical power to test the hypothesized relationships.

The demographic profile of the 538 participants is presented in table 2. The sample was predominantly female (64.9%, n= 348), with the largest age group being 25-34 years old (44.6%), followed by 17-24 years old (36.1%). Geographically, the respondents were distributed across major islands in Indonesia, with the majority residing in Java Island (73.4%), followed by Sumatra (10.2%) and Sulawesi (7.4%). Regarding occupation, the sample was primarily composed of Students (26.2%) and Private Employees (23.8%), with more than half of the respondents holding a Diploma/Bachelor's degree (52.6%). The detailed of these demographic characteristics is summarized in Table 2.

Table 2. Profile of Respondents

Category	Item	Frequency (n)	Percentage (%)
Gender	Male	189	35.1%
	Female	349	64.9%
Age	17 – 24 year	194	36.1%
	25 – 34 year	240	44.6%
	35 – 44 year	74	13.8%
	45 – 54 year	26	4.8%
	55 – 64 year	4	0.7%
Domicilie (Island)	Jawa	395	73.4%
	Sumatra	55	10.2%
	Sulawesi	40	7.4%
	Kalimantan	23	4.3%
	Maluku & Papua	15	2.8%
	Bali & Nusa Tenggara	10	1.9%
Occupation	Student	158	29.4%
	Private Employee	128	23.8%
	Housewife	85	15.8%
	Entrepreneur	62	11.5%
	Freelance	54	10%
	Civil Servant	21	3.9%
	Others	30	5.6%
Education	High School	227	42.2%
	Diploma/Bachelor	283	52.6%
	Master/Doctoral	28	5.2%

Source: Author's data analysis (2025)

This study utilized Partial Least Squares (PLS-SEM) for hypothesis testing. As suggested by Hair et al. (2021), this latent variable method is effective for explaining causality within a structural model. Data analysis was executed using SmartPLS V.4., involving assessments of both the measurement (outer) and structural (inner) models at a 0.05 significance threshold. The specific research model is presented in Figure 1.

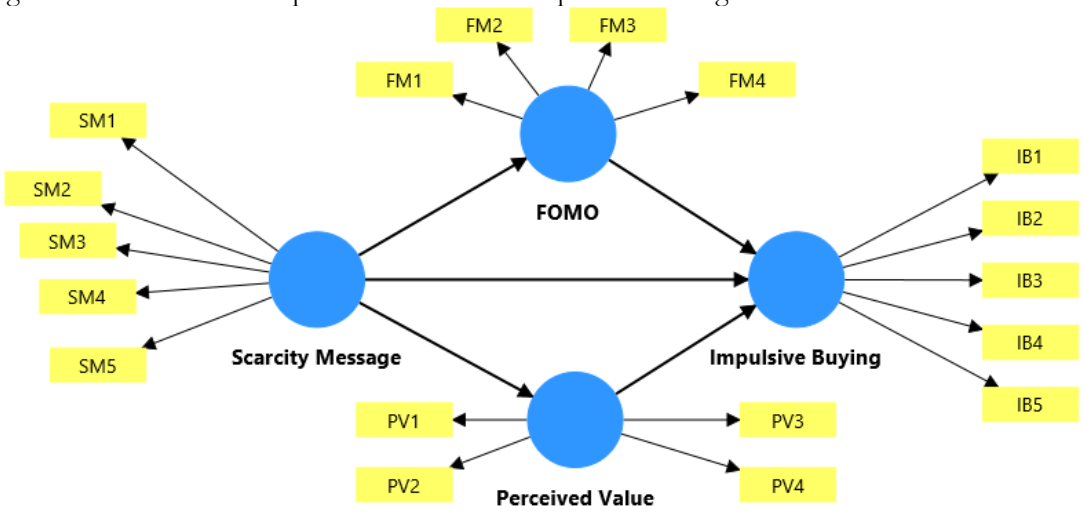

Figure 1. Path Analysis

Measurement Model Evaluation (Outer Model)

The analysis began by evaluating the indicator variables within the research model. The outer loading values for each indicator are presented in Table 3.

Tabel 3. Outer Loading

Indikator	Outer Loading	Information
FM1	0.852	Accepted
FM2	0.869	Accepted
FM3	0.889	Accepted
FM4	0.880	Accepted
IB1	0.809	Accepted
IB2	0.838	Accepted
IB3	0.727	Accepted
IB4	0.861	Accepted
IB5	0.820	Accepted
PV1	0.799	Accepted
PV2	0.711	Accepted
PV3	0.823	Accepted
PV4	0.863	Accepted
SM1	0.708	Accepted
SM2	0.780	Accepted
SM3	0.817	Accepted
SM4	0.783	Accepted
SM5	0.820	Accepted

Source: Author's data analysis

As shown in Table 3, all measurement indicators for Scarcity Message, Perceived Value, FOMO, and Impulsive Buying exhibited outer loading values exceeding the recommended threshold of 0.70. In line with the guidelines proposed by hair et al. (2022), indicators with outer loading values above this threshold demonstrate adequate indicator reliability and therefore consideret valid. The next analysis was to determine the validity and reliability of the data. The table below shows the results for validity and reliability:

Table 4. Validity, Discriminat, and Reliability

Variabel	Cronbach's Alpha	(rho_a)	rho_c	Ave
FOMO	0.896	0.897	0.927	0.762
Impulsive Buying	0.871	0.884	0.906	0.660
Perceived Value	0.812	0.817	0.877	0.642
Scarcity Message	0.842	0.850	0.888	0.613

Source : Author's data analysis (2025)

Table 4 present the result of the validity and reliability testing for the research instruments. As shown in the table, all variables demonstrate satisfactory internal consistency. The Cronbach's Alpha values range from 0.812 (Perceived Value) to 0.896 (FOMO), all of which exceed the recommended threshold of 0.70. similiarly, the Compsite Reliability (rho_c) values for all constructs are well above 0.70, ranging from 0.877 to 0.927. furthermore, the Average Variance Extracted (AVE) values indicate adequate convergent validity, as all constructs scored above the 0.50 cut-off value. The AVE values span from 0.613 for scarcity message to 0.762 for FOMO. Therefore, all indicators used in this study are valid and reliable.

The next stage was to determine the discriminat validity. This assessment aims to ensure that each latent variable represents a unique phenomenon that is empirically distinct from other variables in the structural model. To evaluate this, the study employs the Heterotrait-Monotrait ratio of correlations (HTMT) criterion. According to Henseler et al. (2015), an HTMT value below 0.90 indicates that discriminat validity has been established. The table below shows the results for Discriminant validity (HTMT Criterion):

Table 5. Discriminant Validity Results (HTMT Criterion)

Variabel	FOMO	Impulsive Buying	Perceived Value	Scarcity Message
FOMO				
Impulsive Buying	0.664			
Perceived Value	0.643	0.460		
Scarcity Messaage	0.742	0.487	0.823	

Source: Author's data analysis (2025)

Based on the results presented in Table 5, it can be observed that all HTMT values are below the recommended threshold of 0.90. The highest ratio recorded is between Scarcity Message and Perceived Value at 0.823, which is still well within the acceptable limit. The other values range from 0.460 to 0.742.

These results confirm that the construct FOMO, Impulsive Buying, Perceived Value, and Scarcity Message are empirically distinct from one another and do not share excessive similarities. Therefore, it can be concluded that discriminant validity has been successfully established. Since the measurement model has met all criteria for validity and reliability, the analysis proceeds to the assessment of the structural model (inner model) to test the proposed hypotheses.

Structural Model Evaluation (Inner Model)

The analysis proceeds to the structural model evaluation (inner model). This stage aims to predict the relationships between latent variables and test the proposed hypotheses. The structural model assessment begins with examining collinearity issues (VIF) and evaluating the coefficient of determination (R^2). Before testing the hypotheses, it is essential to ensure that there are no lateral collinearity issues among the predictor constructs. According to Hair et al. (2019), VIF values should be lower than 5.0 to avoid bias. As shown in Table 6, all inner VIF values range from 1.000 to 2.384, which are well below the threshold. This indicates that the model is free from multicollinearity problems result is a description of the data obtained which is required from the research question. The results must answer the problems that have been raised in the research question. Research results must be clear and concise. Results should summarize scientific findings rather than simply convey detailed data. The discussion is the main part of the article that discusses and analyzes the results of the research using the main theory and other supporting theories, to find novelty from other studies.

Table 6. Inner VIF values

Predictor	FOMO	Perceived Value	Impulsive Buying	Scarcity Message
FOMO		1.797		
Impulsive Buying				

Predictor	FOMO	Perceived Value	Impulsive Buying	Scarcity Message
Perceived Value		1.967		
Scarcity Message	1.000	2.384	1.000	

Source : Author's data analysis (2025)

The next step in the structural mode evaluation is to assess the predictive power of the model using the Coefficient of Determination (R^2). This metric represents the proportion of variance in the endogenous constructs that can be explained by exogenous constructs linked to them. In According with the guidelines by Hair et al. (2019), R^2 values of 0.75, 0.50, and 0.25 are considered substantial, moderate, and weak, respectively. The table 7 below shows the results for Coefficient of Determination (R^2)

Tabel 7. Coefficient of Determination R^2 results

Variabel	R-Square	R-Square Ajusted	Predictive Power
FOMO	0.424	0.423	Moderate
Impulsive Buying	0.364	0.361	Moderate
Perceived Value	0.474	0.473	Moderate

Source: Author's data analysis (2025)

As shown in Table 7, all endogenous variables exhibit a moderate level of explanatory power. For instance, the R^2 value for impulsive buying is 0.364, indicating that 36.4% of the variance in impulsive buying behavior is explained by Scarcity Message, FOMO, and Perceived Value. The remaining variance is attributed to other factors not included in this research model. These results confirm that the structural model possesses adequate predictive accuracy. Following the evaluation of the structural model, the predictive power of the proposed model is assessed using the PLSpredict procedure. Tabel. 8 reports the PLSpredict results based on the RMSE criterion.

Tabel 8. Plspredict Result

Indikator	$Q^2_{predict}$	PLS-SEM_RMSE	LM_RMSE	Information
FM1	0.374	2.241	2.198	PLS > LM
FM2	0.307	2.363	2,372	PLS < LM
FM3	0.255	2.431	2.441	PLS < LM
FM4	0.341	2.257	2.265	PLS < LM
PV1	0.300	1.832	1.840	PLS < LM
PV2	0.256	2.023	2.038	PLS < LM
PV3	0.302	1.666	1.649	PLS > LM
PV4	0.345	1.575	1.553	PLS > LM
IB1	0.174	2.423	2.428	PLS < LM
IB2	0.123	2.659	2.669	PLS < LM
IB3	0.044	2.784	2.802	PLS < LM
IB4	0.124	2.520	2.523	PLS < LM
IB5	0.103	2.797	2.811	PLS < LM

Notes: PLS < LM : Indicates Higher predictive power ; PLS > LM : Indicates Lower predictive power
Source: Author's data analysis (2025)

Table 8 presents the results of the PLSpredict analysis. Initially, we assessed the $Q^2_{predict}$ values to determine predictive relevance. As observed, the $Q^2_{predict}$ values for all endogenous latent variables are strictly positive. In accordance with the predictive sample reuse technique, values exceeding zero serve as the primary criterion for establishing predictive relevance (Stone, 1974; Geisser, 1975). Futhermore, the model's predictive power was evaluated by comparing the RMSE values of the PLS-SEM model against the Linear Model (LM) benchmark. For the Fear of Missing Out (FOMO) construct, the majority of indicators (3 out of 4) exhibited lower prediction errors in the PLS-SEM analysis (PLS <LM), indicating medium predictive power. Regarding Perceived Value, the results showed a balanced distribution where two indicators favored the PLS-SEM model while the other two favored the LM, suggesting moderate predictive power. Finally, for Impulsive Buying, all indicators consistently yielded lower RMSE values compared to the LM (PLS<LM). Collectively, these findings confirm that the structural

model possesses high predictive power, particularly for the Impulsive Buying variable, following the guidelines by Shmueli et al. (2019) and Hair et al. (2021).

The next stage was hypothesis testing, the structural model assessment was conducted to evaluate the hypothesized relationships using a bootstrapping procedure with 5,000 subsamples. This stage involved examining both direct and indirect effects to provide a comprehensive understanding of the research framework. The table below shows the results for the hypothesis:

Tabel 9. Hypothesis testing

Hypothesis	Original Sample (O)	T Statistics	P Values
Direct Effect			
H_1 SM→IB	0.013	0.193	0.847
H_2 SM→FM	0.651	22.868	0.000
H_3 SM→PV	0.688	22.649	0.000
H_4 PV→IB	0.097	1.501	0.133
H_5 FM→IB	0.536	11.061	0.000
Indirect Effect			
H_6 SM→FM→IB	0.349	9.901	0.000
H_7 SM→PV→IB	0.067	1.491	0.136

Source: Author's data analysis

The table above illustrates the statistical significance of the hypothesized paths. Based on the criteria where a T-statistic must exceed 1.96 and a P-value must be less than 0.005, it is evident that while most direct relationships are significant, the direct impact of scarcity messages on impulsive buying behavior is statistically insignificant without the presence of a mediator.

Based on the hypothesis testing results in Table 9, it is found that Scarcity Messages (SM) have no significant direct effect on Impulsive Buying (IB) (O = 0.013; P = 0.847), thus H1 is rejected. This finding indicates that messages regarding product or time limitations within Shopee livestreaming sessions alone are unable to directly drive impulsive buying behavior for fashion products. This result is consistent with the research by Sun et al. (2021), which suggests that scarcity appeals often do not lead to a significant direct increase in purchase intentions because their effect is fully mediated by psychological factors. In the highly interactive environment of Shopee Live, a simple announcement of limited stock is merely perceived as information that requires a deeper emotional trigger to transform into a spontaneous purchase action.

Furthermore, Wu et al. (2021) argue that in live commerce, the impact of scarcity on impulsive buying becomes insignificant when emotional arousal levels are low. This suggests that for fashion consumers on Shopee, who are frequently exposed to "flash sales" and "limited-time vouchers," these external cues must first ignite an internal emotional state such as Fear of Missing Out (FoMO) before manifesting as actual impulsive behavior. Without this emotional bridge, consumers tend to remain rational despite the scarcity claims presented by the streamer.

The statistical results for H2 indicate that Scarcity Messages (SM) have a positive and highly significant effect on Fear of Missing Out (FM) (O = 0.651; P = 0.000), thus H2 is supported. This finding confirms that when streamers on Shopee Live emphasize product limitations, it successfully triggers an immediate psychological state of anxiety among viewers regarding the potential loss of a valuable shopping opportunity.

This result is strongly aligned with the findings of Cengiz & Şenel (2024), who conducted research in a fast fashion context and found that perceived scarcity both in terms of limited quantity and limited time significantly heightens consumers' Fear of Missing Out (FoMO). In the dynamic environment of Shopee Live, where fashion items like clothing and accessories are often sold in limited batches, these scarcity cues act as a powerful catalyst for psychological reactance.

Furthermore, Khetarpal & Singh (2024) provide evidence that "Limited Time Offers" in online promotions have a profound impact on inducing FoMO. They argue that when consumers are faced with a ticking clock or a "flash sale" during a livestream, their cognitive processing shifts toward the fear of losing the deal, which is consistent with the S-O-R (Stimulus-Organism-Response) framework as discussed by Zhang et al. (2022). Additionally, Djamhari et al. (2024) highlight that in the digital age, especially within the Indonesian market, sales promotions and scarcity cues are primary drivers of FoMO, which subsequently forces consumers to prioritize immediate action over rational deliberation.

The statistical analysis for H3 reveals that Scarcity Messages (SM) exert a positive and highly significant influence on Perceived Value (PV) (O = 0.688; P = 0.000), which means H3 is supported. This finding suggests that when streamers on Shopee Live highlight the rarity or limited availability of fashion items, consumers perceive those products as having higher worth, quality, and social appeal.

This result aligns with the multidimensional value theory proposed by Sweeney and Soutar (2001), which posits that perceived value is not merely about price but also encompasses emotional and social dimensions. In the context of livestreaming, scarcity messages enhance the "prestige" and "exclusivity" of fashion products like bags or accessories, thereby increasing their overall value in the eyes of the consumer.

Furthermore, Costa Pacheco et al. (2025) emphasize that in live shopping environments, scarcity cues act as a signal of high demand, which subsequently inflates the perceived hedonic and utilitarian value of the items being sold. This is further supported by Zhao et al. (2021), who found that streamer behavior specifically the use of scarcity tactics effectively shapes how consumers evaluate a product's worth during a live session. For fashion consumers on Shopee, the "now-or-never" pressure created by the streamer transforms a standard clothing item into a "must-have" high-value asset, confirming that scarcity is a primary driver of value perception in digital commerce.

The statistical results for H4 indicate that Perceived Value (PV) does not have a significant direct effect on Impulsive Buying (IB) (O = 0.097; P = 0.133), leading to the rejection of H4. This finding suggests that even when fashion products on Shopee Live are perceived as having high quality, good function, or reasonable price-to-value ratios, this perception does not automatically trigger a spontaneous purchase.

This result is consistent with the perspective provided by Mittal et al. (2017) in their qualitative exploration of impulse buying, which suggests that the purchase process often involves a transition from cognitive evaluation to affective response. When consumers focus on "value," they are engaging in a more cognitive and rational assessment. price perception and value alone may not be enough to bypass a consumer's rational control unless accompanied by high time pressure or immediate emotional arousal.

Furthermore, Kaur (2024) notes that in the digital age, consumers have become more adept at evaluating product worth due to the ease of price comparison. For fashion items on Shopee Live, a high perceived value might actually lead to deliberate or planned buying rather than impulsive behavior. Consumers may recognize the item's value but choose to "save it for later" or wait for further confirmation, confirming that in a livestreaming context, value is a necessary condition for attraction but not a sufficient direct trigger for impulsivity.

The statistical results for H5 reveal that Fear of Missing Out (FM) has a positive and highly significant effect on Impulsive Buying (IB) (O = 0.536; P = 0.000), thus H5 is supported. This indicates that when fashion consumers on Shopee Live experience an internal state of anxiety about missing a trendy item or a deal, they are significantly more likely to perform an immediate, unplanned purchase.

This finding is consistent with Djamhari et al. (2024) and Cengiz & Şenel (2024), who emphasize that in the fast fashion industry, FoMO acts as a primary psychological driver. For Shopee users, the visual and social pressure during a livestream reinforces the "now or never" mentality. As highlighted in the study by Zhang et al. (2022), the digital age has amplified this phenomenon, where social validation and the fear of exclusion drive consumers to bypass rational thinking and follow their impulsive urges.

The most critical finding of this study is the support for H6, which confirms that Fear of Missing Out (FM) significantly mediates the relationship between Scarcity Messages (SM) and Impulsive Buying (IB) (O = 0.349; P = 0.000). Given that the direct effect (H1) was found to be insignificant, this result represents a Full Mediation effect.

This discovery implies that scarcity messages on Shopee Live do not automatically lead to sales; their effectiveness is entirely dependent on their ability to trigger FoMO within the consumer. According to the S-O-R (Stimulus-Organism-Response) framework discussed by Khetarpal & Singh (2024), the scarcity message (Stimulus) must first be processed as a psychological threat of loss (Organism/FoMO) before it can result in an impulsive purchase (Response). This finding provides a vital strategic insight: for fashion streamers on Shopee, merely mentioning "limited stock" is ineffective unless it is delivered in a way that creates a genuine emotional "fear of missing out" among the audience. This aligns with Sun et al. (2021), who noted that without this emotional bridge, scarcity cues remain mere information rather than a behavioral trigger.

Conclusion

This study concludes that scarcity messages do not directly drive impulsive buying behavior among fashion consumers on Shopee Live. Instead, the effectiveness of these marketing stimuli is entirely dependent on their ability to trigger a psychological state known as Fear of Missing Out (FoMO). While scarcity messages significantly

enhance both FoMO and perceived value, only FoMO acts as a full mediator that successfully bypasses rational deliberation and leads to spontaneous purchase actions. Interestingly, a high perceived value while successfully established by scarcity cues was found insufficient to trigger impulsivity, suggesting that value-centric perceptions tend to encourage cognitive evaluation rather than emotional impulse.

Scientific Contributions Theoretically, this research contributes to the S-O-R (Stimulus-Organism-Response) framework by demonstrating that in a highly interactive and fast-paced livestreaming environment, the "Organism" (internal emotional state) is the mandatory bridge for external stimuli to produce a behavioral response. This study specifically clarifies the role of FoMO as a dominant emotional catalyst in the digital fashion industry, providing a more nuanced understanding of the mediation mechanism that was previously debated in traditional e-commerce literature.

Practical Applications and Developments Practically, these findings suggest that Shopee Live streamers and fashion brands should not rely solely on repetitive "limited stock" announcements. Marketing strategies must be developed to prioritize emotional urgency and social validation. Streamers should focus on creating a narrative of "potential loss" that resonates with the audience's FoMO, as this emotional engagement is the primary driver of conversion in live commerce.

Limitations and Suggestions for Further Research This study is limited by its focus on fashion products and a single platform (Shopee Live), which may limit the generalizability of the results to other product categories or platforms with different demographic profiles. Additionally, the study only explored two mediating variables. Future research should consider incorporating other psychological factors, such as streamer attractiveness, parasocial interaction, or consumer trust, and expanding the scope to cross-platform comparisons (e.g., TikTok Live vs. Shopee Live) to provide a more comprehensive view of the dynamics of live commerce.

Acknowledgement

We are grateful to the colleagues at Sultan Ageng Tirtayasa University and Banten University for their valuable expertise and support, which significantly assisted in the development of this research.

Author Contributions Statement

ZM, AD, YA. ZM conceptualized the research, designed the methodology, performed data collection and PLS-SEM analysis, and wrote the original draft of the manuscript. AD and YA provided supervision, reviewed the research framework, and contributed to the final editing and proofreading of the article

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Conflict of Interest

This section is a statement from the author that this article has a conflict of interest or not.

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