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Perceived Interactivity of TikTok Shop Live and Impulse Buying: The Mediating Role of Urge to Buy Impulsively among Female Gen Z Skincare Consumers in Jakarta

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Abstract— **The growing popularity of TikTok Shop Live has created new opportunities for interactive product promotion while potentially encouraging spontaneous purchasing behavior. This study examines the relationship between perceived interactivity and impulse buying among female Generation Z consumers purchasing skincare products through TikTok Shop Live, with urge to buy impulsively as a mediating variable. Drawing on the Stimulus–Organism–Response (S-O-R) framework, the study conceptualizes perceived interactivity as a stimulus, urge to buy impulsively as an internal psychological state, and impulse buying as a behavioral response. A quantitative approach was employed using a cross-sectional survey of 200 female Generation Z consumers aged 18–29 residing in Jakarta. Respondents were selected through purposive sampling based on their experience watching skincare-related TikTok Shop Live sessions within the previous three months and purchasing skincare products through the platform within the previous six months. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS. The results indicate that perceived interactivity is positively associated with urge to buy impulsively ($\beta = 0.573$, $p < 0.001$) and impulse buying ($\beta = 0.471$, $p < 0.001$). Urge to buy impulsively also exhibits a positive relationship with impulse buying ($\beta = 0.372$, $p < 0.001$). Furthermore, urge to buy impulsively significantly mediates the relationship between perceived interactivity and impulse buying ($\beta = 0.213$, $p < 0.001$), with the direct relationship remaining significant, indicating complementary partial mediation. These findings contribute to the application of the S-O-R framework in explaining impulse buying in livestream commerce by demonstrating the role of consumers' spontaneous purchase urges as one psychological mechanism linking interactive experiences to actual purchasing behavior. Practically, the findings highlight the importance of responsive, timely, and relevant seller interactions in facilitating consumer engagement and purchasing decisions during TikTok Shop Live sessions.**

Keywords— Perceived interactivity; urge to buy impulsively; impulse buying; livestream commerce; TikTok Shop Live; Generation Z.

Intisari— **Meningkatnya popularitas TikTok Shop Live membuka peluang baru bagi promosi produk secara interaktif sekaligus berpotensi mendorong perilaku pembelian spontan. Penelitian ini menguji hubungan antara persepsi interaktivitas (*perceived interactivity*) dan pembelian impulsif (*impulse buying*) pada konsumen perempuan Generasi Z yang membeli produk perawatan kulit (*skincare*) melalui TikTok Shop Live, dengan dorongan untuk membeli secara impulsif (*urge to buy impulsively*) sebagai variabel mediasi. Mengacu pada kerangka *Stimulus–Organism–Response* (S-O-R), penelitian ini mengonseptualisasikan persepsi interaktivitas sebagai stimulus, dorongan untuk membeli secara impulsif sebagai kondisi psikologis internal, dan pembelian impulsif sebagai respons perilaku. Pendekatan kuantitatif digunakan melalui survei *cross-sectional* terhadap 200 konsumen perempuan Generasi Z berusia 18–29 tahun yang berdomisili di Jakarta. Responden dipilih dengan teknik *purposive sampling* berdasarkan pengalaman menonton siaran langsung TikTok Shop Live terkait produk perawatan kulit dalam tiga bulan terakhir serta pernah membeli produk perawatan kulit melalui platform tersebut dalam enam bulan terakhir. Data dianalisis menggunakan *Partial Least Squares Structural Equation Modeling* (PLS-SEM) dengan SmartPLS. Hasil penelitian menunjukkan bahwa persepsi interaktivitas berhubungan positif dengan dorongan untuk membeli secara impulsif ($\beta = 0{,}573$, $p < 0{,}001$) dan pembelian impulsif ($\beta = 0{,}471$, $p < 0{,}001$). Dorongan untuk membeli secara impulsif juga menunjukkan hubungan positif dengan pembelian impulsif ($\beta = 0{,}372$, $p < 0{,}001$). Selanjutnya, dorongan untuk membeli secara impulsif secara signifikan memediasi hubungan antara persepsi interaktivitas dan pembelian impulsif ($\beta = 0{,}213$, $p < 0{,}001$), dengan hubungan langsung yang tetap signifikan sehingga menunjukkan mediasi parsial komplementer (*complementary partial mediation*). Temuan ini berkontribusi pada penerapan kerangka S-O-R dalam menjelaskan pembelian impulsif pada *livestream commerce* dengan menunjukkan peran dorongan pembelian spontan konsumen sebagai salah satu mekanisme psikologis yang menghubungkan pengalaman interaktif dengan perilaku pembelian aktual. Secara praktis, hasil penelitian ini menekankan pentingnya interaksi penjual yang responsif, tepat waktu, dan relevan dalam memfasilitasi keterlibatan konsumen dan keputusan pembelian selama sesi TikTok Shop Live.**

Kata kunci— Persepsi interaktivitas; dorongan membeli secara impulsif; pembelian impulsif; *livestream commerce*; TikTok Shop Live; Generasi Z.

I. INTRODUCTION

Livestream commerce combines product demonstrations, audience comments, and transaction facilities within a single live session. Unlike a static product page, this format allows viewers to request clarification while the seller is presenting an item. The exchange can therefore shape the information available to a consumer at the moment of evaluation. This study examines that setting as a context in which perceptions of seller–viewer interaction may be associated with unplanned purchasing.

In this study, perceived interactivity refers to the viewer's assessment of how well the seller responds during a live session. Three features are central: whether questions receive a response, whether the response arrives promptly, and whether the information addresses the question asked. The existence of a comment facility alone does not establish interactivity; what matters is the quality of the exchange as experienced by the viewer. Prior research on TikTok livestream shopping has connected interactivity with perceived enjoyment and, in turn, impulse buying [1].

Impulse buying is commonly understood as purchasing that takes place without prior planning and with limited deliberation [3]. The psychological urge that may precede such a purchase is conceptually distinct from the transaction itself. Beatty and Ferrell [4] identify this felt urge as part of the process leading to impulse buying. A consumer can experience a strong desire to purchase yet refrain from doing so because of price, budget constraints, product suitability, or other considerations. Treating the urge and the completed purchase as separate variables therefore allows the study to examine two different stages of the response.

The Stimulus–Organism–Response framework offers the conceptual structure for examining these stages. In livestream commerce, characteristics of the shopping environment have been studied in relation to consumers' internal experiences and subsequent purchasing responses. For example, Li et al. [5] examine social presence and emotional responses in an impulse-buying model, whereas Huo et al. [2] consider flow experience alongside social presence and sales promotion. Cui et al. [6] investigate factors associated with the urge to buy impulsively in livestream settings. This literature provides a basis for testing a model that distinguishes the interactive stimulus, the purchase urge, and the buying response.

The present research focuses on female Generation Z consumers in Jakarta who have bought skincare through TikTok Shop Live. Within the proposed model, perceived interactivity represents the environmental stimulus, urge to buy impulsively represents the consumer's internal state, and impulse buying represents the behavioral response. The model does not presume that a responsive seller will necessarily cause a purchase. Instead, it evaluates whether respondents' perceptions of interaction covary with their reported purchase urges and unplanned buying.

Four relationships are examined: the association of perceived interactivity with urge to buy impulsively; the association of that urge with impulse buying; the direct association between perceived interactivity and impulse buying; and the indirect association operating through the purchase urge. The empirical setting is limited to female Gen Z skincare consumers in Jakarta, allowing the proposed relationships to be assessed within a clearly defined livestream-shopping context.

II. THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

Stimulus–Organism–Response (S-O-R) Theory

The Stimulus–Organism–Response (S-O-R) perspective explains consumer responses by distinguishing conditions in the environment from the internal states and actions associated with those conditions. A stimulus is an external feature encountered by the individual; the organism denotes the individual's cognitive or affective response; and the response refers to the resulting behavior. In online shopping, these elements can be used to organize the relationship between features of the shopping interface, consumers' psychological reactions, and purchase-related actions.

Applied to this research, the stimulus is perceived interactivity because the construct captures how viewers evaluate communication with a seller during a live broadcast. The organism is urge to buy impulsively, namely the immediate psychological inclination to make an unplanned purchase. The response is impulse buying, which concerns the purchase behavior rather than the desire alone. This allocation is consistent with the use of S-O-R in livestream-commerce studies examining social presence, emotion, flow, and impulsive purchasing [2], [5], [6].

The framework is used to test both a direct link from perceived interactivity to impulse buying and an indirect link in which the purchase urge serves as an intervening variable. The conceptual sequence specifies the relationships to be examined; whether those relationships are supported is determined by the survey results.

Perceived Interactivity and Urge to Buy Impulsively

Perceived interactivity captures the extent to which a viewer experiences seller communication as reciprocal and responsive. In a skincare livestream, this may involve asking about ingredients or product suitability, receiving an answer without undue delay, and judging whether the answer is relevant to the question. These exchanges can make product information more accessible while the viewer is considering an offer.

Prior work in TikTok live shopping has found that interactivity is related to perceived enjoyment, which is subsequently associated with impulse buying [1]. Enjoyment and urge to buy impulsively are not interchangeable concepts. However, the reported relationship provides a reason to investigate whether the interactive experience is also associated with a more immediate motivational response: the desire to purchase the product being presented. Other livestream studies likewise locate consumer reactions between environmental cues and impulsive behavior [5], [6].

Accordingly, the proposed relationship is that viewers who evaluate a session as more interactive will, on average, report a stronger urge to buy the featured skincare products. This

proposition concerns an expected association at the group level; it does not imply that every question answered by a seller will produce a purchase urge.

H1: Perceived interactivity in TikTok Shop Live positively influences the urge to buy impulsively.

Urge to Buy Impulsively and Impulse Buying

Urge to buy impulsively describes the felt inclination to acquire an item spontaneously, without having formed a purchase plan beforehand. Rook [3] characterizes the buying impulse as sudden and compelling, while Beatty and Ferrell [4] place the felt urge among the precursors of impulse buying. The distinction matters because wanting an item and completing an unplanned transaction are not the same event.

A purchase urge may remain unacted upon. A consumer might decide that the item is too expensive, question whether it is appropriate for their skin, or give priority to another need. Nevertheless, when the product is readily available and the consumer does not reconsider the decision, a stronger urge may coincide with a greater likelihood of an unplanned purchase.

On this basis, the study expects a positive relationship between respondents' reported urge to purchase skincare spontaneously during TikTok Shop Live and their reported impulse-buying behavior.

H2: The urge to buy impulsively positively influences impulse buying.

Perceived Interactivity and Impulse Buying

Perceived interactivity may also be associated with impulse buying without operating solely through the measured purchase urge. During a live product presentation, viewers can obtain product-specific answers while the item remains available for purchase. The information exchange may therefore accompany product evaluation and the decision to buy, including in cases where the purchase was not planned before the session.

Research on TikTok livestream shopping has linked interactivity to enjoyment and connected enjoyment with impulse buying [1]. Other studies have considered social presence, sales promotion, and related livestream cues in explaining impulsive purchasing [2], [5]. These findings provide a rationale for examining the direct relationship in the present model, while recognizing that the current study tests perceived interactivity rather than those other predictors.

The analysis therefore tests whether perceived interactivity retains a positive relationship with impulse buying after the urge to buy impulsively is included as a mediator.

H3: Perceived interactivity in TikTok Shop Live positively influences impulse buying.

The Mediating Role of Urge to Buy Impulsively

The proposed mediation concerns the possibility that a viewer's evaluation of seller–viewer communication is associated with an internal desire to purchase, which is in turn associated with an unplanned transaction. In S-O-R terms, the interactive experience is the stimulus, the purchase urge is the organismic state, and impulse buying is the response. This structure allows the indirect relationship to be estimated separately from the direct relationship.

For example, a viewer may receive a timely answer about a skincare product and become more inclined to own it. If that inclination is related to an unplanned purchase, part of the association between perceived interactivity and impulse buying may be statistically transmitted through the urge. The existence and magnitude of this indirect effect must be established empirically rather than assumed from the conceptual sequence.

Livestream-commerce research has examined several internal processes, including flow, emotional reactions, and purchase urges, in relation to impulsive behavior [2], [5], [6]. This study narrows the focus to urge to buy impulsively and evaluates its mediating role for female Gen Z skincare consumers in Jakarta.

H4: The urge to buy impulsively mediates the relationship between perceived interactivity in TikTok Shop Live and impulse buying.

III. Research Methodology

Research Design and Research Model

A quantitative cross-sectional survey was used to examine the relationships among perceived interactivity, urge to buy impulsively, and impulse buying in TikTok Shop Live skincare shopping. The S-O-R framework informed the specification of the model: perceived interactivity was the stimulus, urge to buy impulsively the organism, and impulse buying the response. Figure 1 presents the model tested.

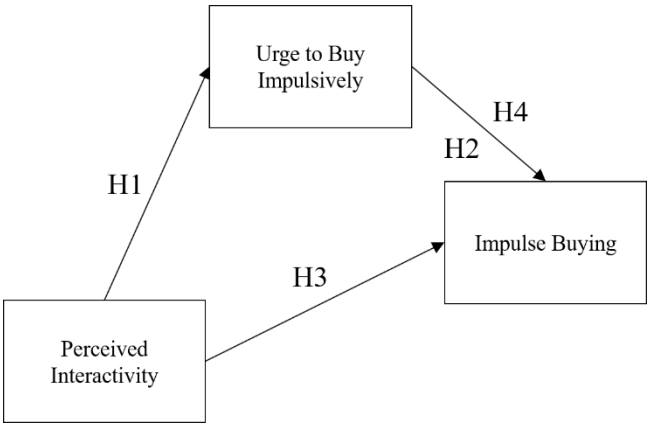


Figure 1. Proposed Research Model

The model specifies four hypotheses: the effects of perceived interactivity on urge to buy impulsively (H1) and impulse buying (H3), the effect of urge to buy impulsively on impulse buying (H2), and the mediating role of urge to buy impulsively in the relationship between perceived interactivity and impulse buying (H4).

Population, Sampling, and Sample Size

Respondents were recruited through non-probability purposive sampling. Eligibility was restricted to women aged 18–29 who lived in Jakarta, had watched a skincare-related TikTok Shop Live session during the preceding three months,

and had purchased skincare through TikTok Shop Live during the preceding six months.

The final dataset comprised 200 valid responses. The recruitment target allowed for the possibility that some submitted questionnaires would be incomplete, fail the screening criteria, or show inadequate response quality. The achieved sample was used for the PLS-SEM analysis reported below.

Operational Definitions and Measurement Items

Three constructs were measured: perceived interactivity, urge to buy impulsively, and impulse buying. Items were drawn from earlier studies and adapted to the setting of skincare purchases during TikTok Shop Live. The first construct concerns viewers' evaluations of seller responsiveness; the second captures the immediate desire to purchase; and the third records unplanned purchasing behavior.

Table 1 lists each construct, its operational definition, item codes, measurement statements, and source. The questionnaire was administered in Indonesian. A five-category Likert response format was used, from 1 (strongly disagree) to 5 (strongly agree); English item wording is shown in the table for publication purposes.

Table 1. Operational Definitions and Measurement Items

Construct	Operational definition	Code	Measurement item	Source
Perceived Interactivity (PI)	Consumers' perceptions of sellers' responsiveness to viewers during TikTok Shop Live sessions.	PI1	Skincare sellers on TikTok Shop Live actively respond to viewers' questions.	Adapted from Tian et al. [7]
		PI2	Skincare sellers on TikTok Shop Live answer viewers' questions and requests in a timely manner.	Adapted from Tian et al. [7]
		PI3	Skincare sellers on TikTok Shop Live provide relevant responses to viewers' questions.	Adapted from Tian et al. [7]
Urge to Buy Impulsively (UBI)	The spontaneous psychological urge to purchase skincare products while watching TikTok Shop Live, which may or may not result in an actual purchase.	UBI1	When I see skincare products offered on TikTok Shop Live, I suddenly want to own the products.	Adapted from Gong and Jiang [8]
		UBI2	When watching a seller offer skincare products on TikTok Shop Live, I feel a strong urge to buy the products being presented.	Adapted from Gong and Jiang [8]
		UBI3	While watching TikTok Shop Live, I feel that the skincare products being presented are products I want to own.	Adapted from Gong and Jiang [8]
		UBI4	Even when I had not planned to buy a particular skincare product, I feel tempted to purchase it after seeing the offer on TikTok Shop Live.	Adapted from Gong and Jiang [8]
Impulse Buying (IB)	Actual skincare purchasing behavior through TikTok Shop Live that occurs spontaneously or without prior purchase planning.	IB1	During the past six months, I have made a spontaneous purchase of skincare while watching TikTok Shop Live.	Contextualized item; informed by impulse-buying literature
		IB2	During the past six months, I have purchased skincare through TikTok Shop Live that was not on my original shopping list.	Contextualized item; informed by impulse-buying literature
		IB3	During the past six months, I have completed a skincare purchase through TikTok Shop Live without having planned that purchase before the livestream.	Contextualized item; informed by impulse-buying literature

Note: All measurement items will be administered in Indonesian. The English statements are presented for reporting in the article. The final wording of adapted items should be reviewed and pilot-tested before the main survey.

Data Collection Procedure

Responses were gathered through an online questionnaire. At the beginning of the survey, participants received information about the study and voluntary participation, followed by screening questions covering the eligibility requirements. Only respondents who satisfied those requirements proceeded to the construct measures.

The questionnaire avoided requesting personal identifiers that were not needed for the research. Participants were informed of the academic purpose of the survey and the confidential treatment of their answers. Before analysis, the responses were checked for eligibility, completeness, identifiable duplicate submissions, and patterns suggesting insufficient engagement. Any exclusions were to be based on these screening criteria.

Data Analysis Technique

PLS-SEM was conducted in SmartPLS. The analysis first evaluated the measurement model, covering indicator reliability, internal consistency, convergent validity, and discriminant validity. The structural model was then examined to assess the hypothesized paths among the three constructs.

For the structural model, the assessment considered path estimates and their significance, confidence intervals, R^2, and effect sizes. Bootstrapping was applied to test the direct paths and the specific indirect effect. Mediation was evaluated using the estimated indirect path from perceived interactivity through urge to buy impulsively to impulse buying.

The hypotheses were evaluated against the results of these analyses. The reported conclusions therefore reflect the observed survey data rather than assumptions made when the model was proposed.

IV. Results

Respondent Profile

A total of 200 respondents participated in this study, and all responses were considered valid for further analysis. All respondents met the predetermined screening criteria, including being female, belonging to Generation Z (aged 18–29), residing in Jakarta, having watched skincare-related TikTok Shop Live sessions within the previous three months, and having purchased skincare products through TikTok Shop Live within the previous six months.

Regarding age distribution, 33 respondents (16.5%) were aged 18–21, 70 respondents (35.0%) were aged 22–25, and 97 respondents (48.5%) were aged 26–29. The largest proportion of respondents belonged to the 26–29 age group. These characteristics ensured that the respondents had relevant experience with the livestream shopping context examined in this study.

Measurement Model Assessment

The measurement model was assessed in terms of indicator reliability, internal consistency reliability, convergent validity, and discriminant validity.

Indicator Reliability

Outer loadings were used to assess how strongly each indicator represented its assigned construct. The values in Table 2 extend from 0.743 to 0.930; each is above the 0.708 criterion applied in this study.

For impulse buying, the loadings fall between 0.914 and 0.930. The corresponding range is 0.823–0.858 for perceived interactivity and 0.743–0.898 for urge to buy impulsively. UBI4 has the smallest loading (0.743), but it remains above the stated cut-off and was retained.

On the basis of these estimates, none of the indicators was removed from the measurement model.

Table 2. Outer Loadings

Construct	Indicator	Outer Loading
Impulse Buying	IB1	0.914
	IB2	0.930
	IB3	0.929
Perceived Interactivity	PI1	0.829
	PI2	0.858
	PI3	0.823
Urge to Buy Impulsively	UBI1	0.842
	UBI2	0.785
	UBI3	0.898
	UBI4	0.743

Internal Consistency Reliability and Convergent Validity

Reliability was examined with Cronbach's alpha, rho_A, and composite reliability. Convergent validity was evaluated using average variance extracted (AVE).

The three constructs produced Cronbach's alpha and rho_A estimates above 0.70. Their composite reliability coefficients ranged from 0.875 to 0.946, within the 0.70–0.95 interval used as the assessment criterion.

AVE values were between 0.671 and 0.854. Since each value exceeded 0.50, the results support convergent validity for all three constructs.

Table 3. Construct Reliability and Convergent Validity

Construct	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Impulse Buying	0.915	0.920	0.946	0.854
Perceived Interactivity	0.786	0.788	0.875	0.700
Urge to Buy Impulsively	0.834	0.844	0.890	0.671

Discriminant Validity

The HTMT procedure was applied to examine whether the constructs were empirically distinguishable. Each value in Table 4 is below 0.85: 0.804 for impulse buying with perceived interactivity, 0.730 for impulse buying with urge to buy impulsively, and 0.707 for perceived interactivity with urge to buy impulsively.

The observed ratios provide evidence that the three constructs meet the discriminant-validity criterion adopted for this analysis.

Table 4. Heterotrait–Monotrait Ratio (HTMT)

Construct Relationship	HTMT
Impulse Buying – Perceived Interactivity	0.804
Impulse Buying – Urge to Buy Impulsively	0.730

Perceived Interactivity – Urge to Buy Impulsively	0.707

Taken together, the indicator, reliability, convergent-validity, and discriminant-validity assessments provide support for proceeding to the structural-model evaluation.

Structural Model Assessment

The structural model was evaluated by examining collinearity, coefficient of determination (R^2), and effect size (f^2).

Collinearity Assessment

The inner VIF statistics were used to check whether predictor constructs showed problematic collinearity. Values ranged from 1.000 to 1.489, below the 3.0 threshold applied in the analysis.

For the path predicting urge to buy impulsively, perceived interactivity had a VIF of 1.000. In the impulse-buying equation, the VIF was 1.489 for each of the two predictors. The estimates do not indicate a collinearity problem in this model.

Coefficient of Determination (R^2)

The model's explanatory capacity was examined through R^2 and adjusted R^2. Perceived interactivity accounted for 32.8% of the variance in urge to buy impulsively ($R^2 = 0.328$; adjusted $R^2 = 0.325$), as reported in Table 5.

For impulse buying, the combined contribution of perceived interactivity and urge to buy impulsively corresponded to an R^2 of 0.562 and an adjusted R^2 of 0.557. Thus, the model accounted for 56.2% of the observed variance in impulse buying and 32.8% in the mediator.

Table 5. Coefficient of Determination

Endogenous Construct	R^2	Adjusted R^2
Urge to Buy Impulsively	0.328	0.325
Impulse Buying	0.562	0.557

Effect Size (f^2)

The f^2 statistic was used to gauge the contribution of each predictor to its endogenous construct. Perceived interactivity had an f^2 of 0.489 for urge to buy impulsively, classified as large. Its effect size for impulse buying was 0.340, while the effect of urge to buy impulsively on impulse buying was 0.212; both were classified as medium.

These estimates indicate that perceived interactivity contributes strongly to explaining the purchase urge. For impulse buying, both perceived interactivity and the urge make meaningful contributions according to the f^2 results.

Table 6. Effect Size (f^2)

Structural Relationship	f^2	Effect Size
Perceived Interactivity → Urge to Buy Impulsively	0.489	Large
Perceived Interactivity → Impulse Buying	0.340	Medium
Urge to Buy Impulsively → Impulse Buying	0.212	Medium

Bootstrapping in SmartPLS was used to evaluate the direction and statistical significance of the hypothesized structural paths. The three direct relationships are reported in Table 7.

The hypotheses were tested using the bootstrapping procedure in SmartPLS to assess the significance and direction of the structural relationships. The analysis examined three direct relationships among perceived interactivity, urge to buy impulsively, and impulse buying. The results of the direct hypothesis testing are presented in Table 7.

Table 7. Results of Direct Hypothesis Testing

Hypothesis	Relationship	Path Coefficient (β)	STDEV	t-value	p-value	Decision
H1	PI → UBI	β = 0.573	STDEV = 0.085	t = 6.774	p < 0.001	Supported
H2	UBI → IB	β = 0.372	STDEV = 0.073	t = 5.088	p < 0.001	Supported
H3	PI → IB	β = 0.471	STDEV = 0.083	t = 5.699	p < 0.001	Supported

Note: PI = Perceived Interactivity; UBI = Urge to Buy Impulsively; IB = Impulse Buying.

The estimates in Table 7 show positive and statistically significant coefficients for all three direct paths. Perceived interactivity is positively related to urge to buy impulsively (β = 0.573, t = 6.774, p < 0.001), providing support for H1. In this sample, respondents who rated seller interaction more favorably also tended to report a stronger immediate desire to purchase the skincare products presented.

The path from urge to buy impulsively to impulse buying is also positive (β = 0.372, t = 5.088, p < 0.001), supporting H2. Respondents reporting a stronger purchase urge also reported more unplanned skincare purchases.

The direct path from perceived interactivity to impulse buying is significant and positive (β = 0.471, t = 5.699, p < 0.001). H3 is therefore supported. This coefficient represents the relationship that remains in the model alongside the mediator.

Mediation Analysis

The specific indirect path from perceived interactivity to impulse buying through urge to buy impulsively was assessed with bootstrapping. The resulting estimate and significance statistics are presented in Table 8.

Table 8. Specific Indirect Effect of Perceived Interactivity on Impulse Buying through Urge to Buy Impulsively

Indirect Relationship	Path Coefficient (β)	STDEV	t-value	p-value	95% Bootstrap Confidence Interval
PI → UBI → IB	β = 0.213	STDEV = 0.054	t = 3.927	p < 0.001	[0.116, 0.331]

Note: PI = Perceived Interactivity; UBI = Urge to Buy Impulsively; IB = Impulse Buying. The confidence interval does not include zero, indicating a statistically significant indirect effect.

The estimated indirect effect is positive and statistically significant (β = 0.213, t = 3.927, p < 0.001). Its 95% bootstrap confidence interval extends from 0.116 to 0.331 and does not

cross zero, supporting the presence of an indirect association through urge to buy impulsively.

The direct path also remains significant ($\beta = 0.471$, $p < 0.001$). The pattern is therefore consistent with complementary partial mediation: the mediator accounts for part, but not all, of the relationship between perceived interactivity and impulse buying.

Summary of Hypothesis Testing

The results of the direct and indirect effect analyses provide support for all four proposed hypotheses. A summary of the hypothesis testing results is presented in Table 9.

Table 9. Summary of Hypothesis Testing

Hypothesis	Hypothesis Statement	Result
H1	Perceived interactivity positively influences urge to buy impulsively.	Supported
H2	Urge to buy impulsively positively influences impulse buying.	Supported
H3	Perceived interactivity positively influences impulse buying.	Supported
H4	Urge to buy impulsively mediates the relationship between perceived interactivity and impulse buying.	Supported

The four hypothesized relationships received statistical support. In this sample, perceived interactivity was associated with both the urge to buy impulsively and impulse buying; the urge was also associated with impulse buying. The indirect path through the urge was significant, while the direct path remained significant as well.

V. DISCUSSION

The Effect of Perceived Interactivity on Urge to Buy Impulsively

Perceived interactivity had a positive association with urge to buy impulsively ($\beta = 0.573$, $t = 6.774$, $p < 0.001$). Of the three direct paths estimated, this coefficient was the largest. The result indicates that respondents who experienced seller communication as responsive, timely, and relevant tended to report a stronger desire to purchase the skincare items shown during the live session.

The finding is compatible with the stimulus–organism sequence in the S-O-R model. In this context, the stimulus is not simply the technical availability of comments or chat. It is the respondent's evaluation of how the seller handles the exchange: whether questions are acknowledged, answered promptly, and addressed with useful information. The present survey supports an association between that evaluation and the reported purchase urge; it does not establish that a particular seller response causes the urge.

Tian et al. [7] describe livestream interactivity through aspects that include responsiveness, timeliness, and information relevance, and relate these features to streamer trust. Trust is not the outcome examined in the current model. Their work is therefore useful as contextual support for the importance of communication quality, rather than as direct evidence for the specific urge measured here.

Gong and Jiang [8] examine product involvement and impulse buying in livestream commerce, including the role of consumers' urge to buy impulsively. Their analysis offers a relevant comparison for interpreting the current association. In the skincare context studied here, it is plausible that a useful response helps viewers assess an item while the livestream is taking place; however, the present data do not identify the precise informational process behind the relationship.

The result supports the proposed association between an external shopping cue and an internal consumer state. It should be interpreted within the limits of the measured variables: the study captures perceived interactivity and reported purchase urge, not the content of individual seller–viewer exchanges.

The Effect of Urge to Buy Impulsively on Impulse Buying

The coefficient linking urge to buy impulsively with impulse buying is positive and significant ($\beta = 0.372$, $t = 5.088$, $p < 0.001$), supporting H2. Respondents who described a stronger immediate inclination to purchase during a livestream also tended to report having made purchases that were not planned beforehand.

The distinction between these constructs is important for interpreting the result. Urge to buy impulsively concerns a psychological inclination, whereas impulse buying refers to the purchase behavior. The association found here is consistent with the organism-to-response sequence in S-O-R, but it does not mean that every urge results in a transaction.

Gong and Jiang [8] also consider the role of consumers' purchase urges in livestream commerce. Their work provides a relevant point of comparison because it treats the urge as part of the process associated with impulse buying, while also considering product involvement.

In the skincare setting, a viewer may want a product after seeing it demonstrated even when it was absent from the original shopping plan. Whether that desire becomes a purchase can still depend on affordability, perceived suitability, and individual priorities. These factors were not tested as moderators in the present model, so they are possible explanations rather than established findings.

The result is consistent with the proposition that an internal purchase inclination is related to subsequent unplanned buying. It also reinforces the need to retain the conceptual distinction between the desire to buy and the act of buying.

The Direct Effect of Perceived Interactivity on Impulse Buying

Perceived interactivity was directly and positively associated with impulse buying ($\beta = 0.471$, $t = 5.699$, $p < 0.001$), even with urge to buy impulsively included in the model. H3 is supported. The remaining direct coefficient indicates that the measured purchase urge does not account for the whole association between seller–viewer interaction and unplanned purchasing.

Within the S-O-R interpretation, this direct path connects an environmental feature with the behavioral outcome without passing through the one mediator specified in the model. It leaves open the possibility that other processes are involved.

Because those processes were not measured, the current analysis cannot identify which of them may account for the remaining association.

One possible explanation concerns the information exchanged during a product demonstration. Viewers asking about ingredients, skin types, application, or expected benefits may receive details that inform their evaluation while the product is available for purchase. Such information could be relevant to an immediate decision, but information uncertainty and decision confidence were not measured in this study. This explanation should therefore be treated as a proposition for future testing.

Dong et al. [9] examine livestream information-source characteristics in relation to impulsive consumption intention. Their outcome is intention, not a completed purchase, and should not be treated as equivalent to the impulse-buying measure used here. The study nevertheless provides related context for considering the role of information in livestream consumer responses.

Huo et al. [2] report relationships involving social presence, sales promotion, flow experience, and impulse buying. Although their explanatory variables differ from perceived interactivity in the present study, their findings similarly place livestream-environment characteristics and consumers' internal experiences within an account of impulsive purchasing.

For sellers, the result points to the potential relevance of clear, accurate responses during product presentations. It does not establish that increasing interaction alone will produce more purchases; the quality and usefulness of the information remain important, particularly for skincare products.

The Mediating Role of Urge to Buy Impulsively

The indirect association from perceived interactivity to impulse buying through urge to buy impulsively was significant ($\beta = 0.213$, $t = 3.927$, $p < 0.001$), with a 95% bootstrap interval of 0.116–0.331. Because the direct path also remained significant ($\beta = 0.471$, $p < 0.001$), the results indicate complementary partial mediation and support H4.

This pattern suggests that the purchase urge is one pathway connecting perceived interactivity with impulse buying, rather than the only pathway. In the model, the interactive experience is associated with an internal inclination to purchase, which is in turn associated with unplanned buying. The remaining direct relationship shows that this mediator does not capture the entire association.

Gong and Jiang [8] provide a related account of purchase urges in livestream commerce. The current study builds on that line of inquiry by placing urge to buy impulsively between perceived interactivity and impulse buying, and by testing the relationship among female Gen Z skincare consumers in Jakarta.

The partial mediation result also sets a boundary on the interpretation. Other factors—such as the information available about a product, perceived suitability, or decision processes—may contribute to the remaining direct relationship. Since these variables were not included in the model, they should be treated as candidates for subsequent research, not as explanations demonstrated by this dataset.

Previous S-O-R studies of livestream commerce have considered internal responses such as pleasure, arousal, and flow in relation to impulse buying [5], [10]. By examining urge to buy impulsively, the present study tests a more purchase-proximal motivational state. The result supports its role as a mediator in this particular model, without implying that it is the only relevant organismic response.

Overall, the findings identify both a direct association and an indirect association through urge to buy impulsively. The mediation result is meaningful, but it does not provide a complete account of why viewers make unplanned purchases during TikTok Shop Live.

Theoretical Implications

The contribution of this study is to test a specific S-O-R configuration in livestream skincare commerce. Perceived interactivity is treated as the environmental stimulus, urge to buy impulsively as the internal state, and impulse buying as the behavioral response. The observed direct and indirect relationships provide empirical support for examining these three components together in the selected consumer and product context.

First, the results position perceived interactivity as a relevant environmental correlate of both the purchase urge and impulse buying. The findings extend the application of the S-O-R perspective to female Gen Z skincare consumers using TikTok Shop Live. They do not establish that all forms of platform interactivity have the same effect; the construct measured here concerns respondents' perceptions of seller responsiveness, timeliness, and relevance.

Second, the significant indirect effect identifies urge to buy impulsively as one intervening psychological variable in the relationship between perceived interactivity and impulse buying. This finding gives empirical attention to the distinction between an internal desire and a completed unplanned purchase. It also complements livestream-commerce research that has examined other internal responses, including enjoyment and flow [2], [11].

Third, the direct relationship remained significant after the mediator was included. The purchase urge therefore explains only part of the association captured by the model. This result provides a basis for testing additional variables—such as trust, perceived value, or product involvement—in future work, but it does not demonstrate that any of these variables explains the remaining path.

Finally, the study adds evidence from a defined setting: female Generation Z consumers in Jakarta who purchase skincare through TikTok Shop Live. The context helps delimit the population and product category to which the results most directly apply. Generalization to other age groups, locations, product types, or platforms requires further evidence.

Managerial Implications

The practical implication is not simply to increase the number of live sessions or promotional messages. The findings

instead point to the relevance of interaction quality: viewers should be able to obtain timely and pertinent answers while a product is being presented.

Skincare sellers can organize the communication process before and during a livestream. A moderator may monitor incoming questions, identify recurring concerns, and ensure that questions about ingredients, skin types, usage, suitability, and product limitations receive accurate answers. Preparing verified product information in advance can help maintain consistency across responses. These practices correspond to the dimensions of perceived interactivity assessed in this study.

Product demonstrations can be structured around the questions viewers actually raise. For a moisturizer, for example, the presenter can explain the formulation and intended use, clarify which skin types the product is designed for, and respond to follow-up questions. The aim should be to make the demonstration informative and responsive, rather than repeating promotional claims without addressing viewers' concerns.

A strong purchase urge does not necessarily lead to a completed transaction. Sellers can therefore make the transition from product evaluation to checkout straightforward: connect the product link to the item currently being discussed, display variants and prices clearly, and explain the purchase steps. Claims about ingredients and benefits should remain accurate and should not rely on manufactured urgency, especially in a category where product suitability matters.

For platforms, the results suggest supporting the quality of seller–viewer exchanges through interface and moderation features. Question filtering, visibility for unanswered comments, and tools for grouping frequently raised product concerns may help sellers and moderators identify what viewers need to know during a session.

Seller-development programs could include training in real-time communication and product knowledge. In skincare, this should cover accurate ingredient descriptions, appropriate claims, and clear explanations of product use and suitability. The objective is to improve the informational value of the session, not simply to extend its duration or increase promotional frequency.

Platforms could also monitor interaction-quality measures alongside conventional indicators such as viewership and sales. Examples include response time, the share of questions receiving relevant answers, and consistency of product information. These measures are possible management indicators; they were not tested as outcomes in the present research.

Taken together, the practical recommendations emphasize three connected elements: responsive communication, dependable product information, and an uncomplicated purchasing process. Sellers can focus on the quality of their answers, while platforms can provide the tools and training needed to support those exchanges.

Research Limitations and Future Research

Despite its contributions, this study has several limitations that should be considered when interpreting the findings and developing future research.

The cross-sectional design measured the study variables at one point in time. It can establish statistical associations among perceived interactivity, urge to buy impulsively, and impulse buying, but it cannot establish temporal order or definitive causality. The mediation estimate should consequently be read as a significant indirect association within the specified model. Longitudinal research could track purchase urges and later behavior, while experiments could manipulate levels or types of seller interactivity.

The sample consisted of 200 female Generation Z consumers living in Jakarta who had watched skincare-related TikTok Shop Live sessions in the previous three months and had purchased skincare through the platform in the previous six months. Purposive recruitment ensured that participants had relevant experience, but the sample does not represent all TikTok users or consumers. Further studies could include men, other age groups, and participants from different regions; probability-based recruitment may improve representativeness where feasible.

The research was limited to skincare products sold through TikTok Shop Live. Consumers may seek different information and apply different decision criteria when purchasing fashion, electronics, or household goods. The findings should therefore not be assumed to apply uniformly across categories. Comparative studies could test whether the proposed relationships differ by product type or by livestream-commerce platform.

The model included urge to buy impulsively as the mediator between perceived interactivity and impulse buying. Although the indirect effect was significant, partial mediation indicates that the model does not capture the full relationship. Future studies could test additional psychological or situational variables, including trust, perceived risk, product involvement, and flow experience, to assess whether they account for further variation in impulse buying.

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