

# What Factors Stimulate Impulse Buying? A Study on Live Commerce Users

Made Pradnyan Permana Usadi<sup>1</sup> I Putu Wahyu Dwinata JS<sup>2</sup> I Wayan Sucipta Wibawa<sup>3</sup>

<sup>1,2,3</sup>*Universitas Mahasaraswati Denpasar*

*Email Correspondent : mdpradnyan@unmas.ac.id*

**Abstract:** *The emergence of live streaming commerce has become evidence that the e-commerce has developed rapidly since Covid-19 pandemic. Consumers who shop at live commerce mostly don't have a previous plan. This behavior is certainly influenced by various stimuli created by sellers. This study aims to investigate factors in stimulating purchase decisions. The sample used is 100 respondents. Data analysis used is Partial Least Square. The results indicate that interactivity has a significant effect on arousal, and leads to impulse buying. Attractiveness and perceived scarcity have no effect on arousal. This study implies that sellers should focus on improving the way they communicate with consumers. Hence, consumers can feel the togetherness and intimacy and enable impulse purchase to occur.*

**Keywords :** *live commerce, impulse buying, attractiveness, perceived scarcity, interactivity*

## INTRODUCTION

Technological developments have changed consumer behavior in online shopping. At first, online shopping was only done through forums and websites (e-commerce), then it developed into mobile commerce. Since the Covid-19 pandemic, consumer activity in cyberspace has increased. The Covid-19 pandemic has actually affected the changing business climate and created a new trend related to digital transformation. Business people

must also have creativity in offering their products, including MSMEs. Apart from social media, so far MSMEs have only relied on physical stores or stalls in the market for marketing that interacts directly with consumers. The presence of the live commerce feature on e-commerce and social media applications makes it easy for MSME actors to be able to interact directly with consumers without having to meet physically.

Live commerce has changed the direction of future e-commerce

development because it reduces communication problems in online shopping through the direct interaction feature between sellers and consumers (Lo et al., 2022). In specific, a two-way synchronous communication is realized where vendors can specifically acknowledge and react to buyers, and buyers can effectively participate through composed communication (Kang et al., 2020). Live commerce is an activity that utilizes live streaming as a means to market and sell products. Consumers can have two-way communication with sellers and with other consumers watching the live stream. Consumers can also easily ask product details, how to care for the product, how to use it, so that their expectations are clear. iiMedia Research's research shows that the live streaming feature pushed China's e-commerce transactions up to 433 billion yuan or around IDR 885 trillion in 2019. In 2020, e-commerce revenue from this feature is estimated at 961 billion yuan or IDR 1,973 trillion due to Covid-19 pandemic (Katadata.co.id, 2021). In a survey conducted in mid-2022 regarding live shopping platforms, Shopee is ranked first with 83.4 percent users, followed by TikTok in second place with 42.2 percent and Instagram in third position with 34.1 percent users (Databoks.katadata.co.id, 2022). Ipsos (2022) in its survey stated that 78 percent of respondents said they had heard of live streaming shopping, 78 percent said they had accessed this feature, and 56 percent said they had shopped through this feature.

The incredible potential of live commerce makes increasingly MSMEs take part. Strongly competition requires them to think about how to create a way for consumers to watch and stay on their live streams. So that's anticipated to extend the plausibility of consumers to purchase. This study uses the concept of Stimuli-

Organismic-Response (SOR) to help translate the process of consumer behavior in this topic. Several empirical studies show that there are factors that become stimuli that influence consumer decisions to shop via live streams, namely attractiveness, trustworthiness, expertise, interaction, professionalism, limited promotion (Lee & Chen, 2021; Luo et al., 2021; Zhong et al., 2022). To make consumers feel at home and enjoy a live streaming, something that has an attraction in the seller is needed (Cai et al., 2018). Apart from being a shopping medium, live commerce is also a place for consumers to enjoy hedonic and social benefits through attractions and interactions that occur in the real-time buying process (Xu et al., 2020). The hedonic benefit is when consumers get pleasure by watching attractions offered by live stream sellers and promotions in limited quantities and for a limited time. Social benefits are social interactions that occur during live streams between sellers and consumers that stimulate emotional shopping arousal which encourages unplanned purchases.

Shopping arousal is explained as an Organismic process that is formed from the received stimuli. The results of empirical studies found that organismic that were formed emotionally were influenced by the attractiveness of the seller and the social activities that occurred (Xu et al., 2020). Scarcity promotion was found to have an influence on consumers' impulse buying intentions by stimulating consumer arousal. The promotion of scarcity conditions consumers in a situation that is urgent by time and quantity, so that competitive pressures increase consumer enthusiasm (Guo et al., 2022). This will make impulsive buying behavior easier to occur.

The focus of attention of researchers is increasingly focused on the concept and practice of live commerce, but this

business model is still new and must continue to be developed, where there are still not many scientific articles that discuss live commerce more deeply (Lee & Chen, 2021). This study intends to examine specifically what factors cause impulse buying in live commerce from the emotional point of view of consumers. Based on this explanation, this research is expected to provide a better understanding of consumer behavior in the context of: (1) How does attractiveness affect shopping arousal? (2) How does interactivity affect shopping arousal? (3) How does perceived scarcity affect shopping arousal? (4) How does shopping arousal affect impulse buying?

### Research Purposes

Based on the previous explanation, this study aims to examine:

- 1) To explain the impact of attractiveness on shopping arousal of live commerce users.
- 2) To explain the impact of interactivity on shopping arousal of live commerce users.
- 3) To explain the impact of perceived scarcity on shopping arousal of live commerce users.
- 4) To explain the impact of shopping arousal on impulse buying of live commerce users.

## LITERATURE REVIEW

### Live Commerce

Live commerce is one of the innovations of e-commerce that successfully combines online shopping systems and face-to-face shopping experiences through the live stream feature. Live commerce is defined as media that provide a virtual environment in real-time interaction, entertainment, social activities, and commerce (Lee & Chen,

2021). Compared to traditional e-commerce, live commerce is able to meet the needs of consumers to be able to communicate directly with sellers, thereby improving their shopping experience (Ma, 2021). Live commerce not as it were empowered user to encounter shopping benefits i.e. product quality and specification, but moreover helps in creating virtual social connections with seller amid real-time interaction and creating sense of adjacency (Hilvert-Bruce et al., 2018).

### Stimuli-Organismic-Response (S-O-R)

S-O-R is defined as a framework that studies individual perceptions and behaviors in response to external stimuli (Lee & Chen, 2021). This framework suggests that stimuli can trigger emotional and cognitive processes (organismic), which can result in behavioral changes (responses) (Xu et al., 2020). S-O-R is a model of environmental stimuli that affect cognitive and affective, which are referred to as organismic, which will lead to behavioral changes in response.

### Live Commerce Stimuli

Stimuli is something that can trigger the emergence or change of individual perceptions and affect their response to something (Chan et al., 2017). This study identifies attractiveness, perceived scarcity, and interactivity as stimulation factors that can influence emotional reactions in using live commerce. Attractiveness is defined as the personality, appearance, and talent of broadcasters perceived by viewers based on the live commerce process taking place (Ha & Lam, 2017). An attractive broadcaster will make viewers enjoying watching for a longer time. Empirical studies have found that attractiveness has a significant effect on shopping arousal (Lee & Chen, 2021; Xu et al., 2020).

Live commerce provides viewers to interact and socialize with the broadcaster (Hu et al., 2017). Interactivity is defined as a form of two-way communication carried out by broadcasters and viewers. Direct interaction aims to make potential consumers better understand the product to be purchased. The results of previous studies found that social presence had a significant effect on arousal (Li et al., 2022; Lo et al., 2022). Products that are being discounted generally have a limited quantity (Guo et al., 2022). This tends to trigger competition among consumers which causes them not to have much time in the buying decision-making process. Sellers usually use this scarcity promotion method to create perceived scarcity for consumers. Previous studies have found that scarcity has a significant effect on arousal (Guo et al., 2022; Zhang & Choi, 2021). Based on the explanation, the following hypotheses can be formulated:

- H<sub>1</sub> : Attractiveness has a positive and significant effect on shopping arousal
- H<sub>2</sub> : Perceived scarcity has a positive and significant effect on shopping arousal
- H<sub>3</sub> : Interactivity has a positive and significant effect on shopping arousal

**Live Commerce Organismic**

Organismic is a phase between stimuli and response, where individuals will process incoming stimuli that can influence their cognitive and emotional states (Liu et al., 2013). This study focuses on the emotional states of consumers where impulse buying occurs more as a result of emotional impulses. In the S-O-R framework, arousal can be a reflection of the emotional state of consumers which will determine whether their response is (Xu et al., 2020). This study identifies impulse buying as a response to arousal. Impulse buying is the result of an overwhelming response activated by frequent and intentional stimuli (Chen et

al., 2022). Previous studies have found that arousal has a significant effect on impulse buying (Guo et al., 2017; Xu et al., 2020; Zhang & Choi, 2021). Therefore, this study proposes:

- H<sub>4</sub> : Shopping arousal has a positive and significant effect on impulse buying

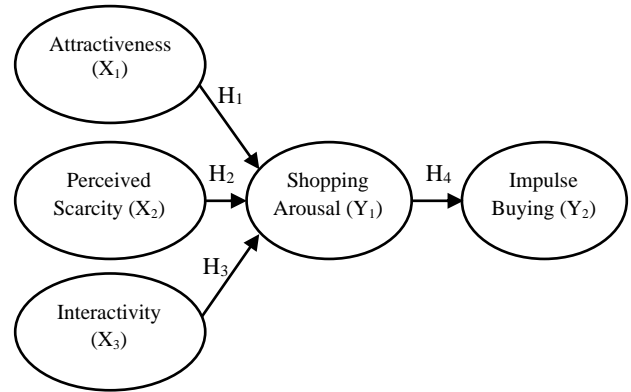


Figure 1. Research Model

**RESEARCH METHOD**

**Data**

Quantitative data in this study consists of e-commerce revenue data during the 2020 Covid-19 pandemic and live shopping platform user data in mid-2022. Qualitative data consists of previous research results related to live commerce, respondent identity (such as name, gender, education, occupation), and respondents' statements from the questionnaire. These data were obtained through primary sources derived from respondents' statements on the questionnaire and through secondary sources originating from Katadata.co.id.

**Population and Sample**

Indonesian live commerce users on several platforms such as TikTok and Shopee are used as population. The number of samples determined was 100 respondents with the criteria of respondents having made transactions in

live commerce. Purposive sampling technique was used in determining the sample criteria. The sample size has met the suggested necessities for Partial Least Square analysis, which ranges from 30 to 100 (Ghozali, 2011:5).

**Data Collection**

Questionnaire was developed in English and then translated into Indonesian for the respondents. Online questionnaire via Google Form and physical questionnaire are used, and distributed to the respondents through research team. Respondents who were willing were asked to complete the questionnaire provided and forward the invitation to participate to their colleagues and recruit other respondents. The survey was conducted in approximately five weeks. They were asked questions about personal data, what platform was used to watch live commerce, and how many online shopping transactions in a month. While the statements given to respondents used a Likert Scale of 1 to 5 (1 = strongly disagree and 5 = strongly agree).

**Variabel**

The independent variable in this study consist of attractiveness, perceived scarcity, interactivity. And for the dependent variable consists of shopping arousal and impulse buying. The indicators of the attractiveness, perceived scarcity, interactivity, shopping arousal, impulse buying variables were adopted from Xu et al. (2020) and the perceived scarcity from Chen et al. (2022). The following scale indicators used in this study for each variable are presented in Table 1.

**Table 1. Measurement of Variable**

Variable	Items
Attractive-ness	I feel the seller who does the live stream has talent (X <sub>1.1</sub> )

(X <sub>1</sub> )	I feel the seller has enjoyable streaming style (X <sub>1.2</sub> )
	I find the seller who does the live stream has an attractive personality (X <sub>1.3</sub> )
	I feel that the seller who does the live stream looks appealing (X <sub>1.4</sub> )
	I feel like I'm competing with a lot of people in buying products while watching live streaming (X <sub>2.1</sub> )
Perceived Scarcity (X <sub>2</sub> )	While watching live streaming shopping promotions, I thought the promoted products would run out quickly (X <sub>2.2</sub> )
	I think the limited quantity product strategy was intentionally created by the seller for live streaming (X <sub>2.3</sub> )
	When watching the live stream, I feel as if the seller is like a friend (X <sub>3.1</sub> )
Interactivity (X <sub>3</sub> )	When watching the live stream, I feel a sense of togetherness with the seller (X <sub>3.2</sub> )
	I feel as if the seller cares about my comments during the live stream (X <sub>3.3</sub> )
	If I ask a question, live streaming seller always answered positively (X <sub>3.4</sub> )
	I feel enthusiastic to buy the product or share the live stream while watching it (Y <sub>1.1</sub> )
Shopping Arousal (Y <sub>1</sub> )	I feel excited to participate during the seller's live stream (Y <sub>1.2</sub> )
	I feel interested in getting involved in the seller's live stream (Y <sub>1.3</sub> )
	While watching the live stream, sometimes I buy things that I didn't originally plan on doing (Y <sub>2.1</sub> )
Impulse Buying (Y <sub>2</sub> )	While watching the live stream, sometimes I buy things spontaneously (Y <sub>2.2</sub> )
	While watching the live stream, sometimes I buy things without thinking (Y <sub>2.3</sub> )
	While watching the live stream, I felt like buying more stuff than I needed (Y <sub>2.4</sub> )

Source: Data processed (2023)

**Data Analysis**

This study uses descriptive statistics to explain respondents' demographic data and inferential statistics to test the hypotheses using Partial Least Square (PLS) analysis. SmartPLS 2.0.M3. To ensure the consistency of the results, bootstrapping was carried out with 500 samples (Ghozali, 2011:38).

**RESULT AND DISCUSSION**

**Demographic Characteristics**

As presented in Table 2, survey results show that 77 percent of respondents are female, and the remaining 23 percent are male. The female tendency to use live commerce compared to male was also found in several other studies (Lee &

Chen, 2021; Song & Liu, 2021; Xu et al., 2020; Zhang & Choi, 2021). This may be because female is more attracted to immersive experiences with social interactions while shopping around. All respondents are aged 20 to 29 years. Majority of respondents have a high school education (62 percent), followed by bachelors (23 percent), diplomas (13 percent), and masters (2 percent).

Based on occupation, the most respondents were students (59 percent), then private employees (33 percent), civil servants (4 percent), state-owned enterprise employees (2 percent), and housewives (2 percent). The most used platforms to watch live commerce by respondents are TikTok (57 percent), Shopee (32 percent), and Instagram (11 percent). Respondents who claimed to do online shopping every day were 4 percent, 10 percent twice a week, 11 percent once a week, 34 percent once a month, rarely 39 percent.

**Table 2. Demographic Characteristics**

Variable	Classification	Number of Respondent
Gender	Male	23
	Female	77
	<b>Total</b>	<b>100</b>
Age	20 – 29 years old	100
	<b>Total</b>	<b>100</b>
Educational background	High school	62
	Diploma	23
	Bachelor	13
	Master	2
	<b>Total</b>	<b>100</b>
Occupation	Student	59
	Private employee	33
	State-owned enterprise employees	2
	Civil servants	4
	Housewives	2
	<b>Total</b>	<b>100</b>
Live commerce platform	Tiktok	57
	Shopee	32
	Instagram	11
	<b>Total</b>	<b>100</b>
Purchase frequency	Everyday	4
	Twice a week	10

Once a week	11
Once a month	34
Rarely	39
<b>Total</b>	<b>100</b>

Source: Data processed (2023)

### Hypothesis Testing

The PLS analysis requires outer model and inner model test to measure the fit of the model. In outer model, the test results show that all items are valid because the outer loadings and AVE are greater than 0,50. Composite reliability and Cronbach's alpha also show that all items are reliable because its value is greater than 0,70. More details are shown in Table 3.

**Table 3. Descriptive Statistics for Variable**

Item	Outer Loadings	AVE	Composite Reliability	Cronbach's Alpha
X <sub>1.1</sub>	0,834	0,737	0,918	0,881
X <sub>1.2</sub>	0,895			
X <sub>1.3</sub>	0,841			
X <sub>1.4</sub>	0,863			
X <sub>2.1</sub>	0,826	0,677	0,863	0,763
X <sub>2.2</sub>	0,830			
X <sub>2.3</sub>	0,813			
X <sub>3.1</sub>	0,895	0,740	0,919	0,882
X <sub>3.2</sub>	0,889			
X <sub>3.3</sub>	0,839			
X <sub>3.4</sub>	0,815			
Y <sub>1.1</sub>	0,873	0,832	0,937	0,898
Y <sub>1.2</sub>	0,948			
Y <sub>1.3</sub>	0,913			
Y <sub>2.1</sub>	0,883	0,778	0,933	0,904
Y <sub>2.2</sub>	0,935			
Y <sub>2.3</sub>	0,858			
Y <sub>2.4</sub>	0,849			

Source: Data processed (2023)

In testing the inner model, the R-square value on the effect of attractiveness, perception of scarcity, interactivity on shopping arousal is 0,699. It can be interpreted that the variability of shopping arousal is explained by the variability of attractiveness, perception of scarcity, and

interactivity of 69,9 percent, the remaining 30,1 percent is explained by other variables outside this study. The R-square value of the influence of shopping arousal on impulse buying is 0,570, which means that the variability of impulse buying is explained by the variability of shopping arousal by 57 percent, while 43 percent is explained by other variables not included in this study.

$$\begin{aligned}
 \text{Q-square} &= 1 - (1 - \text{R-square}_1) (1 - \text{R-square}_2) \dots (i) \\
 &= 1 - (1 - 0,699) (1 - 0,570) \\
 &= 0,870
 \end{aligned}$$

Next step is the Q-square calculation, to discover how good observation value generated by the model and its parameter estimates are. The Q-square value must be in the range of 0 to 1, where the closer to 1, the better the model. The results obtained Q-square value of 0,870, it can be explained that the model has good predictive relevance.

**Table 4. Hypothesis Test**

Path	Coefficient Correlation	T- Statistics	Results
X <sub>1</sub> → Y <sub>1</sub>	0,074	0,757	Rejected
X <sub>2</sub> → Y <sub>1</sub>	0,233	1,874	Rejected
X <sub>3</sub> → Y <sub>1</sub>	0,598	6,427	Accepted
Y <sub>1</sub> → Y <sub>2</sub>	0,755	13,179	Accepted

Source: Data processed (2023)

Table 4 show that attractiveness was found to have no significant effect on shopping arousal. This can be shown from the T-Statistics value of 0,757 (T-Statistics < 1,98). The test results also show that attractiveness is the weakest variable in influencing shopping arousal in this study with a correlation coefficient of only 0,074. Thus, hypothesis 1 is rejected. The results of hypothesis testing show that perceived scarcity also does not have a significant effect on shopping arousal with T-Statistics of 1,874 (T-Statistics < 1,98)

and correlation coefficient of 0,233. Thus, hypothesis 2 is rejected.

The results of hypothesis testing indicate that interactivity is the only stimuli found to have a significant effect on shopping arousal in this study. This significant effect is shown by the T-Statistics value of 6,427 (T-Statistics > 1,98). Interactivity has a positive effect on shopping arousal with a correlation coefficient of 0,598. Thus, hypothesis 3 is accepted. Shopping arousal was also found to have a significant effect on impulse buying. The results show the T-Statistic value of 13,179 (T-Statistics > 1,98). The positive effect of shopping arousal on impulse buying has a correlation coefficient value of 0,755. Thus, hypothesis 4 is accepted.

**Discussion and Implication**

Based on hypothesis testing, there are several important points that can be discussed in this study. First, interactivity has a positive and significant effect on shopping arousal. It can be stated that the better interaction occurred by seller in their live commerce, the higher the possibility of shopping arousal. This finding is supported by Xu et al. (2020) and Lo et al. (2022) who found that social interaction has a significant influence on arousal or consumer affection. Li et al. (2022) statement also support this finding that the seller’s social presence in live commerce sellers greatly affects to promote shopping arousal.

Second, the more consumers feel the excitement when watching live commerce, the greater the likelihood of impulsive purchase behavior. It can be stated that the higher the shopping arousal of consumers who watch live commerce, the higher their tendency to make impulse buying. These results are in line with the findings of previous studies (Guo et al., 2017; Liu et al., 2013; Xu et al., 2020).

Third, attractiveness in previous studies was found to have a significant effect on arousal, but not in this study. There are several reasons provided for this discovery. Consumers are only interested in the appearance and personality of the seller. That will keep them watching the live stream longer, but it not immediately triggers shopping arousal. Other phase may be needed, i.e. consumers at first need to interact with the seller regarding product specifications, user guide, maintaining product lifetime, etc. If the interaction between the seller and the consumer runs smoothly, then shopping arousal may possible. Several studies also found the same result that attractiveness had no correlation to impulse behavior (Rungruangjit, 2022; Sawmong, 2022).

Many previous studies have discussed attractiveness as the main factor that must be owned by figures who become endorsers or sellers who represent products. In fact, these factors are not enough to achieve live commerce success. Consumers in the end do not want a seller figure who has an attractive appearance and personality, but basically wants someone who is friendly, communicative, and has good interaction skills (Rungruangjit, 2022). In spite of the fact that this study found that the attractiveness does not have significant impact on impulse buying, these findings negate the results of (Xu et al., 2020).

Fourth, perceived scarcity was also found to have no significant effect on shopping arousal. This finding is not in line with previous studies (Lo et al., 2022; Wu et al., 2021). This is possible because most consumers feel that their information can have product specifications that have not been maximized, as a result of limited promotions due to product scarcity. It is troublesome for them to get it all the information of the products amid the brief promotional period (Huang & Suo, 2021).

The limited number of products which also force them to make decisions in a short time, and does not always promote their arousal. Where this situation can actually raise the risk of buying. This finding is supported by Huang & Suo (2021), Lo et al. (2022) who found that scarcity had no effect on arousal.

## CONCLUSION AND SUGGESTION

### Conclusions

From the results discussed, it can be concluded that:

- 1) Attractiveness have no effect on shopping arousal. Consumers who see the attraction may enjoy the stream just because the seller is physically attractive or talented. But it failed to trigger shopping arousal.
- 2) Perceived scarcity has no effect on shopping arousal. Consumer may know the scarcity promotion is a strategy conditioned by most sellers to gain their emotions.
- 3) Interactivity have a positive and significant effect on shopping arousal. This means that the more interactive sellers do in the live commerce, the higher possibility to promote their consumer shopping arousal.
- 4) Shopping arousal was also found to have a positive and significant effect on impulse buying. This explain that the higher shopping arousal, the higher the possibility of impulse buying.

### Suggestions

From the conclusions that discussed, this study offers several suggestions:

- 1) For sellers, especially MSMEs who use live commerce, must focus on improving communication quality with consumers. For example, they must respond questions positively and interact more to customer. Hence, that



will promote customer shopping experience.

- 2) For future research to further examine other variables that can mediate the relationship between attractiveness and perceived scarcity on arousal.

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