

The Mediating Effect of Risk Perception on The Relationship Between Social Presence and Impulsive Buying in Live Streaming Shopping

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Abstract.

This study aimed to examine the impact of social presence on impulsive buying mediated by risk perception in live streaming shopping using social presence theory. The phenomenon of live streaming shopping had become a major trend in e-commerce in Indonesia, with a large audience through various marketplace applications. Celebrity endorsers played an important role in grabbing the attention of the audience, so direct interaction with them could trigger impulsive buying behavior. This study was exploratory research, proposing four problem formulations related to the social presence of celebrity endorsers, viewers, and products, as well as risk perceptions that affected impulsive purchases. The purpose of the study involved testing the influence of the social presence of celebrity endorsers, viewers, and products on consumer risk perception, as well as the role of risk perception mediation on impulsive purchases. This study used a survey method with a population consisting of people in the South Kalimantan province who were viewers of live streaming shopping. Data collection was carried out by distributing questionnaires online to 186 respondents. Data analysis involved testing the validity and reliability of the instrument, and using SEM-PLS. The results of this study found that (1) the social presence of celebrity endorsers, viewers, and products had a significant effect on risk perception, (2) the social presence of viewers and products had a significant effect on impulsive purchases, while the social presence of celebrity endorsers had no influence on impulsive purchases, and (3) risk perception had a mediating role in the relationship between the social presence of celebrity endorsers, viewers, and products with impulsive purchase behavior.

Keywords: Risk Perception, Social Presence, Impulsive Buying, Live Streaming Shopping

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1. Introduction

The development of the digital world has accelerated in creating innovations so that it has become a trend. The concept of selling products and services online through e-commerce to marketplaces has changed. Customers are not only presented with information services through websites or sales applications but also presented with the latest services, namely sales during live streaming shopping (Z. Chen et al., 2019). Starting in 2016, Alibaba's large Chinese company "Taobao Live" became a pioneer of a new method of sales, namely by presenting live broadcasts with e-commerce so that online audiences can watch and they can shop at the same time. Live streaming shopping sales are increasingly becoming the flagship strategy of the Taobao Live company, in 2020 the company obtained a fantastic transaction value (Arora et al., 2021).

The wave of the e-commerce revolution continues to run in tandem with many digital innovations such as online commerce with live streaming shopping. Sales through live streaming shopping channels can increase consumer surplus. Consumers who shop show an increase in trust in product quality, so consumer perception and utility levels increase (T. Zhang & Tang, 2023). In Indonesia, the live streaming shopping system has become a new paradigm in the world of e-commerce commerce. Combining aspects of comfort, entertainment and interaction to amaze customers. The results of the survey are known that as many as 83.7% of Indonesians have been viewers of live streaming shopping through several marketplace applications (Annur, 2022).

The high interest of live streaming shopping viewers cannot be separated from the support of celebrities (celebrity endorsers). Celebrity endorsers are well-known figures or public figures as a form of marketing strategy by using the store's affiliation to promote the products or services traded (Freire et al., 2018). Many companies with big brands are starting to use celebrity endorsers to drive sales performance of their products during live streaming shopping. The types of companies that use celebrity endorsers range from companies engaged in fashion, beauty, food, to retail.

The opportunity to interact directly with celebrity endorsers makes customers interested in communicating about the products offered during live streaming shopping. Customers will feel that they have an interesting experience because they interact directly with celebrity endorsers. The interaction can be in the form of questions about product information that is being offered during live streaming shopping. This condition is clearly different if the interaction is carried out through the chat column through e-commerce operators (Sun et al., 2020). There is direct interaction, so the questions asked by customers to buyers can be immediately answered by celebrity endorsements, then customers make purchases.

The live streaming shopping method has increased the close interaction between sellers and buyers at the same time. Trading through live streaming shopping can spur individuals to make Impulsive purchases. Many celebrity endorsers sell products on a live streaming platform, in real time luring viewers to buy impulsively (Cheng, 2020). The findings of an empirical study conducted on e-commerce users in Malaysia show that product sales through live streaming shopping on Instagram social media generate Impulsive buying behavior by customers (Hazrini et al., 2021). Commodity price, quality, and promotion factors can stimulate purchasing behavior (Zhang et al., 2023). Consumers are not necessarily satisfied

with the goods purchased through live streaming shopping because they depend on celebrity endorsers.

The high interest in live streaming shopping does not mean that the audience has qualified knowledge so that they are willing to be part of the streaming commerce viewer. Many factors can be the driver of Impulsive purchases during live streaming. However, knowledge about Impulsive buying in live streaming shopping is still very limited (Al Mutanafisa & Retnaningsih, 2021). The concept of retaining consumers and stimulating Impulsive purchases is an important focus for policymakers such as live streaming platform managers.

It is necessary to conduct a study related to the mechanism of consumer acceptance to impulsive behavior responses while still watching live streaming shopping. This study was conducted to find out what factors encourage Impulsive purchases by involving social presence theory which includes several main constructs, namely Social Presence from the context of celebrity endorsers, viewers, and products. The mediation construct in this study is that the cognitive system focuses on risk perception. The impulsive buying construct is placed as a construct that is influenced by these factors.

Impulsive buying is the purchase of a product suddenly and immediately without any intention to shop. This happens after the buyer experiences an urge to buy, and it often happens spontaneously without hesitation. The feeling of doing something that an individual shouldn't do does when the individual can't hold back. The buying experience is increasingly dependent on the interaction between people and the environment of the point of sale, but it is not just the atmosphere that stimulates the impulsive behavior of consumers. Sensory and psychological factors related to the type of product, knowledge of the product, and brand loyalty, often overlap with the interests associated with the physical environment (Goel et al., 2023)

Impulsive purchases lead to a lack of emotional control caused by the conflict between the immediate reward and the negative consequences of those purchases, which can trigger compulsive behaviors that can become chronic. While all Impulsive purchases can be considered unplanned purchases, not all unplanned purchases can be considered impulsive (Li et al., 2023)

Unplanned purchases can occur, simply because the consumer needs to buy a product, but for whatever reason it hasn't been placed on the shopping list before. This shows that unplanned purchases are not necessarily accompanied by urgent desires that are generally characteristic of impulsive purchases. Impulsive purchases arise from sensory experiences. This type of shopping is generated from the stimuli of the five senses and the internet does not have this capacity (Zhang et al., 2023), so online shopping may be less encouraging Impulsive purchases than shopping in physical stores.

This study uses the basic theory of social presence as the theoretical framework. This theory refers to the extent to which a person perceives the participant's presence in communication. Social Presence Theory argues that media differ in their ability to convey the psychological perception that others are physically present, due to the ability of different media to transmit visual and verbal cues (e.g., physical distance, eye contact, posture, facial expressions, voice intonation, and so on). Some media (e.g., video conferencing or telephone) have a greater social presence than others (e.g., email), and media that are higher in social

presence are more efficient for relational communication (e.g., building and maintaining interpersonal relationships), as they involve social/personal issues and thoughts (Goel et al., 2023)

Social Presence assumes that the outcome of an interaction is determined by the capacity of the media chosen to support the type of communication needed (Weidlich et al., 2023). More specifically, Short et al. argue that F2F interactions, thanks to their broader capacity in conveying social presence, are more effective for relational communication than text-based media, such as email, which does not send any cues and then, is more effective for task-focused communication (Attar et al., 2023; Tran, 2022). Finally, the theory of Social Presence has also been found to be a strong indicator of satisfaction, that is, the higher the sense of social presence conveyed by a media, the higher the satisfaction felt by participants when communicating (Attar et al., 2023; Li et al., 2023)

1.1. **The relationship between the social presence of celebrity endorsers and the perception of risk and Impulsive purchases in consumers.**

A person easily builds trust in others when he feels like a face-to-face interaction between two parties (Chou & Nordgren, 2017). This is because it is difficult to hide real information or identity in an environment with a high social presence. As mentioned above, live streaming commerce contributes to mutual awareness between live broadcasters and consumers through real-time audio and video dissemination technology, which makes conversations resemble face-to-face interactions.

Previous literature on social commerce has confirmed that a seller's social presence is a driver for the development of trust in online sellers which in turn reduces the perceived risks and uncertainties associated with products when transacting with such sellers (Lee et al., 2023). *Celebrity endorsers* are basically in charge of promoting products during *live streaming shopping* (Sun et al., 2020; Zhang et al., 2023)..

1.2. **The relationship between the social presence of other viewers on the perception of risk and Impulsive purchases in consumers.**

In the online shopping environment, consumers usually know very little about the quality of the product and have difficulty verifying the authenticity of the information provided by the seller. However, they can get indirect cues related to the product from their peers who have visited the storefront (Liu et al., 2023).

In live streaming services, consumers can understand the whereabouts of other consumers by posting or observing comments scrolling on the screen in real time, which allows them to discuss and exchange product information in real time. In this way, consumers can gain more knowledge about the product, which contributes to a decrease in the potential risks associated with purchasing the product. The marketing literature also postulates that the perception of others plays an important role in shaping consumer trust (Ahmadova & Nabiyeva, 2023; Lee et al., 2023; Zhang et al., 2023).

1.3. **The relationship between the social presence of the product and the perception of risk and Impulsive purchases in consumers.**

Products cannot be touched, tried on, and felt online, consumers may face a higher level of risk when buying online than when buying offline (Chen, 2023). Higher product presence rates contribute to a reduction in perceived risks related to product quality as it narrows the psychological barrier between consumers and products by creating a sense of no-brainer.

Product trials via live streaming allow consumers to imagine physical interaction with the product psychologically; Therefore, consumers consider the products presented to be more real. As a result, consumers can evaluate whether the product will perform as expected, thus feeling a low perceived level of risk (Zhang et al., 2023).

1.4. **Relationship Risk perception to Impulsive Buying in consumers.**

The perceived product risk increases when the quality of the product cannot be guaranteed. Plenty of evidence suggests that consumers are hesitant to buy a product when they feel the potential for high risk (Ciobanu & Bogluț, 2014; Juita et al., 2023). Recent research tries to correlate perceived risk with Impulsive purchases. While a low level of risk perception may not always lead to a strong Impulsive drive, consumers will be less likely to make Impulsive purchases if they perceive high risk (Chen, 2023). The increased risk perceived leads to a decrease in impulsive desire for tourism destinations. Based on the existing literature, it is assumed that the perceived level of risk can inhibit consumers' intention to buy impulsively. Meanwhile, the perception of low risk will further increase Impulsive buying (Tran, 2022; Zhang et al., 2023).

1.5. **The Role of Risk Perception as a Mediator of the Relationship between Social Presence and Impulsive Buying**

Based on the previous explanation, in our opinion, risk perception has the potential to mediate the relationship between social presence and Impulsive purchases. In the context of the social presence of celebrity endorsers, interactions that resemble face-to-face through live streaming shopping tend to build consumer trust and reduce product-related risks, thereby increasing the desire to make Impulsive purchases (Weidlich et al., 2023). The social presence of other viewers, especially through real-time comments and interactions, provides consumers with direct access to product information from other consumers' experiences, reduces uncertainty about product quality, and encourages Impulsive purchases.

In addition, the high presence of products in live streaming allows consumers to test products virtually, create a more realistic experience, and reduce perceived risks related to product quality, thereby increasing the tendency to Impulsive purchases (Liu et al., 2023). Risk perception towards Impulsive purchases also plays a role, where high perceived risk can inhibit consumers' intention to Impulsive purchases, while low risk perception will further increase the desire for Impulsive purchases.

As a result, it can be concluded that risk perception can function as a mediator that links the influence of social presence with consumers' tendency to make Impulsive purchases in the context of live streaming trading.

2. **Research Method**

The methodology used in this study is quantitative research and SEM-PLS. SEM-PLS is a powerful analysis method because it is not based on many assumptions, the data does not have to be distributed normally, namely indicators with category scales (ordinal, interval, ratio) can be used in the same model and do not have to be large in the range of 30 – 100 (Hair et al., 2021). The path analysis model of all latent variables in PLS consists of three sets of relationships: (1) the inner model that specifies the relationship between the latent variables (structural model), (2) the outer model that specifies the relationship between

the latent variable and its indicator or manifestation variable (measurement model) and (3) the weight relation in which the case value of the latent variable can be estimated.

This study uses a survey method with a population in the form of people in the province of South Kalimantan who are viewers of live streaming shopping. The sampling technique uses the *purposive sampling* method where only elements of the population who have made purchases through online live streaming will be used as samples and the minimum number of samples is obtained using the slovin formula (Arikunto, 2012). This study used a sample number of 186 samples.

The instruments used were offline and online questionnaires, where the answers to each instrument item used a Likert scale with 5 alternative answers. The measurement technique uses 20 statement items. The variables of celebrity endorsement, viewer and product, risk perception, and Impulsive buying were measured by 4 statement items as suggested by Liu et al (2023), Zhang et al (2023), and Tran (2022). The hypothesis model in the study is presented as shown in the following figure.

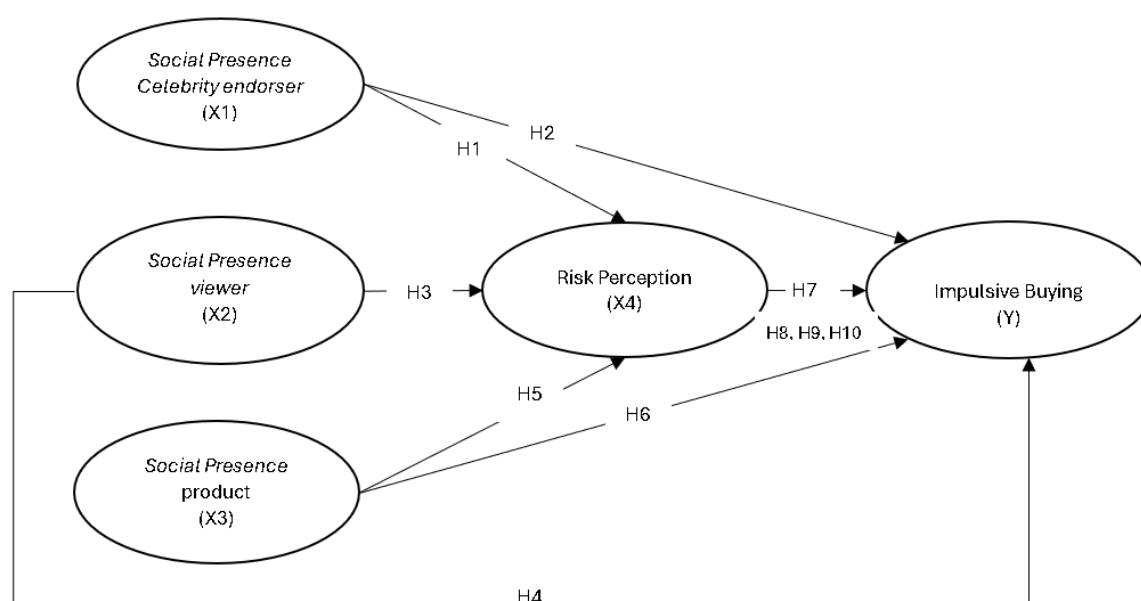


Figure 1. Conceptual Model

3. Results and Discussion

Measurement Model Analysis (Outer Loading)

The analysis of the measurement model was carried out through four stages of testing, namely individual item reliability, internal consistency reliability, average variance extracted and discriminant validity (Hair et al., 2021).

This test is carried out by looking at the value of the standard loading factor. This value describes the magnitude of the correlation between each indicator measurement item and its latent variables. A loading factor value above 0.7 can be said to be valid as an indicator that measures latent variables (Hair et al., 2021). From the results of the outer loading factor test, it can be seen that there are 4 indicator indicators with values below 0.70 so that they must be removed from the model because they are unable to construct the existing variables, namely indicators X1.3 (0.647), X3.2 (0.674), X4.2 (0.662) and X4.4 (0.433). So the test is carried out

without including the excluded indicators from the model.

Discriminant Validity Test

This test is done by looking at the cross loading value and then comparing it to the root value of AVE. The cross loading size is by comparing the correlation of the indicator with other constructs and blocks, this shows that the construct predicts their block size better than other blocks. The results in the table above show that the loading value on the intended construct is greater than the loading value on other constructs, so it can be concluded that there is no problem in testing the validity of the discrimination.

Internal Consistency Reliability Test

This test was carried out using a Composite Reliability (CR) value with a threshold of 0.7. CR is better at measuring internal consistency than Cronbach's alpha for SEM models because CR does not assume all indicators are equal in a variable. The results of the Composite Reliability Test are presented in the following table.

Table 1. Composite Reliability Test

	Cronbach's Alpha	rho_A	Composite Reliability
Impulsive Buying	0.850	0.869	0.897
Risk Perception	0.587	0.598	0.828
Social Presence Celebrity Endorser	0.788	0.798	0.864
Social Presence Product	0.791	0.822	0.862
Social Presence Viewer	0.817	0.83	0.88

Source: Output SEM-PLS, 2024

From the table above, it can be seen that all CR values are above 0.7 so it can be concluded that there are no problems in the Composite Reliability Test test.

Average Variance Extracted (AVE)

The next test is to look at the AVE value, this value describes the magnitude of variance or diversity of manifest variables that can be contained by the latent variable. A minimum AVE value of 0.5 indicates a good measure of convergent validity. The following are the test results in table 2.

Table 2. Hasil Average Variance Extracted Test

Variabel	Average Variance Extracted (AVE)
Impulsive Buying	0.685
Risk Perception	0.706
Social Presence Celebrity Endorser	0.730
Social Presence Product	0.686
Social Presence Viewer	0.648

Source : SEM-PLS Output, 2024

From table 2, it can be seen that none of the AVE values are below 0.5 so it can be concluded that there are no problems in the *Average Variance Extracted test*.

Structural Model Analysis (Inner Model)

This analysis was carried out with several stages of testing, namely path coefficient (β), determination coefficient (R^2), t-test with bootstrapping method.

Path Coefficient (β)

This test is performed by looking at a threshold value above 0.1 to state that the path in question has an influence in the model. The results of the path coefficient can be seen below where there are eight significant paths.

Table 3. Path Coefficient

	Impulsive Buying	Risk Perception
Impulsive Buying		

Risk Perception	0.157	
Social Presence Celebrity Endorser	0.058	0.162
Social Presence Product	0.265	0.255
Social Presence Viewer	0.049	0.392

Source: SEM-PLS Output , 2024

The table above shows that there are 7 significant pathways where this corresponds to the eight direct effect hypotheses proposed in the study. That all existing paths have a value above 0.1 so it can be concluded that all existing paths have an influence on the model.

Coefficient of Determination (R²)

This test was carried out to explain the variance of each endogenous target variable (endogenous variables are variables that are influenced by other variables in the model) with a measurement standard of around 0.670 declared strong, 0.333 moderate, and 0.190 or below weak. The following are the measurement results that can be seen in the following table.

Table 4. Coefficient of Determination (R²)

	R Square	R Square Adjusted
Impulsive Buying	0.17	0.156
Risk Perception	0.486	0.477

Source : SEM-PLS Output, 2023

The results above show that the actual variable used to explain the impulsive buying variable has an R Square Adjusted value of 0.156, which means that the ability to explain the impulsive buying variable variable is at the level of 15.6%. Then the actual variable used to explain the risk perception variable has an R Square Adjusted value of 0.477, which means that the ability to explain the risk perception variable variable is at the level of 47.7%. Furthermore, the actual variable used to explain the social presence viewer variable has an R Square Adjusted value of 0.524, which means that the ability to explain the Impulsive buying variable variable is at the level of 52.4%.

This test was carried out by *bootstrapping method* using a two-way test with a significance level of P value of 0.05 (5%) to test the hypothesis in this study. The hypothesis will be Supported if it has a t-test greater than 1.96 and a P-value below 0.05. The results of the t-test are presented in the following table.

Table 5. T-test results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Social Presence Celebrity Endorser -> Risk Perception	0.161	0.155	0.076	2.169	0.035
Social Presence Celebrity Endorser -> Impulsive Buying	0.073	0.071	0.097	0.620	0.449*)
Social Presence Viewer -> Impulsive Buying	0.178	0.172	0.112	0.378	0.111*)
Social Presence Viewer -> Risk Perception	0.384	0.387	0.076	4.788	0.000
Social Presence Product -> Impulsive Buying	0.265	0.27	0.109	2.423	0.016
Social Presence Product -> Risk Perception	0.268	0.269	0.076	3.079	0.000

Risk Perception -> Impulsive Buying	0.225	0.232	0.091	1.615	0.014
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Source : SEM-PLS Output, 2024

The results of the t-test showed that there were 2 relationship pathways that had a t-test value below 1.96 and a significance level *P value* below 0.05, namely the relationship between *social presence celebrity endorser* and *impulsive buying* and *social presence viewer with impulsive buying*.

Direct effect testing is carried out to see the level of significance and whether the hypothesis can be supported or rejected as well as to see the research model (model path). Hypothesis testing requires that the level of significance can be seen in the *P value* at a significance level below 0.05 and the t-test result above 1.96.

The following is an image explaining the path diagram from the research model to hypothesis testing.

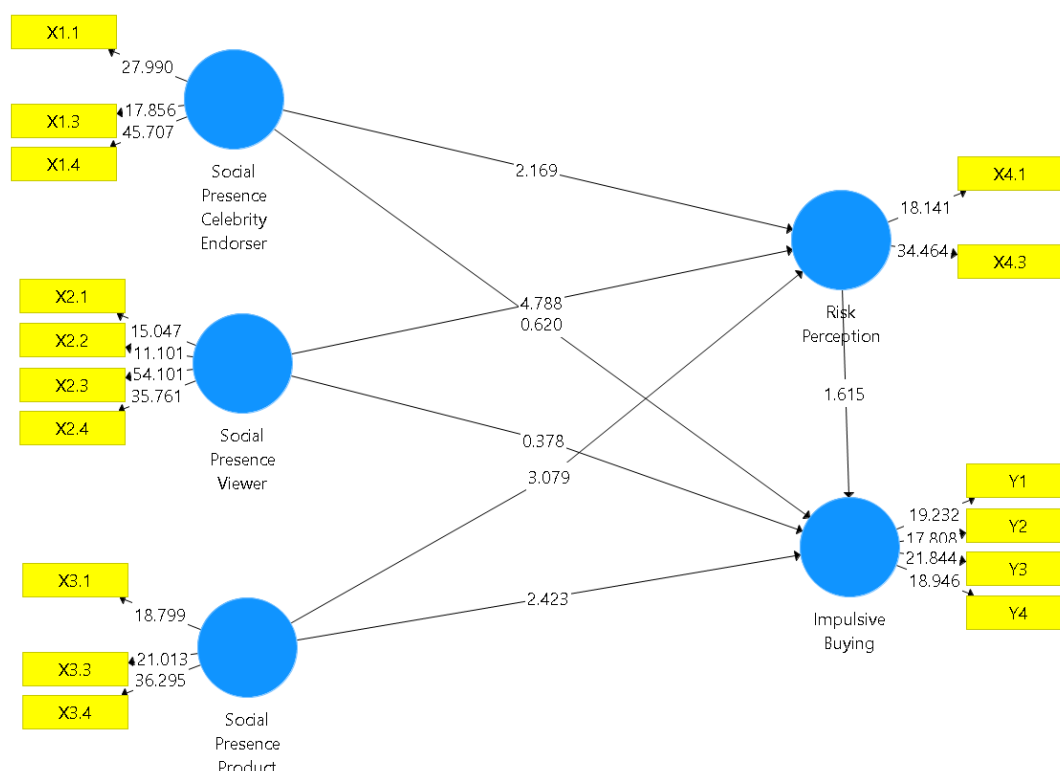


Figure 2. Hypothesis Test Path Diagram

Table 6. Hypothesis Test Results

	Original Sample (O)	T Statistics (O/STDEV)	P Values	Result	Conclusion
Social Presence Celebrity Endorser -> Risk Perception	0.161	2.169	0.035	Significant	H1 Supported
Social Presence Celebrity Endorser -> Impulsive Buying	0.073	0.620	0.449*)	Not Significant	H2 Not Supported
Social Presence Viewer -> Risk Perception	0.384	0.378	0.000	Significant	H3 Supported

Social Presence Viewer -> Impulsive Buying	0.178	4.788	0.111*)	Significant	H4 Not Supported
Social Presence Product -> Risk Perception	0.268	2.423	0.000	Significant	H5 Supported
Social Presence Product -> Impulsive Buying	0.265	3.079	0.016	Significant	H6 Supported
Risk Perception -> Impulsive Buying	0.225	1.615	0.014	Significant	H7 Supported

Source : SEM-PLS Output, 2024

Testing of the mediation/indirect effect was carried out to see the level of significance to the hypothesis stating whether the risk perception of mediating *social presence* can be supported or rejected and to see the research model. Hypothesis testing requires that the level of significance can be seen in the P value at a significance level below 0.05 and the t-test result above 1.96.

Table 9. Mediation Effect Testing Results	Original Sample (O)	T Statistics (O/STDEV)	P Values	Result	Conclusion
Social Presence Celebrity Endorser -> Risk Perception -> Impulsive Buying	0.863	2.256	0.028	Significant	H8 Didukung (Full Mediasi)
Social Presence Product -> Risk Perception -> Impulsive Buying	0.914	3.412	0.001	Significant	H9 Didukung (Mediasi Parsial)
Social Presence Viewer -> Risk Perception -> Impulsive Buying	0.855	11.047	0.000	Significant	H10 Didukung (Mediasi Parsial)

Source : SEM-PLS Output, 2024

The results of the study show that *Social Presence of Celebrity Endorsers* has a significant effect on consumer risk perception because the CR value > 1.96 and the P value < 0.05 so that H1 is supported. These results are in line with previous research conducted by Zhang et al (2023) and Sun et al (2020) which also found the same results. This can happen because the seller's social presence is a driver for the development of trust in online sellers which in turn reduces the perceived risks and uncertainties associated with the product when transacting with the seller.

The results showed that *Social Presence Celebrity Endorser* did not have a significant effect on Impulsive purchases because the CR value > 1.96 and the P value < 0.05 so that H2 was not supported. These results are not in line with previous research conducted by Zhang et al (2023) and Sun et al (2020) which found different results. This can happen due to several factors. First, the methodology used in this study may differ from previous studies, including the study design, sample size, or measurement instruments used.

In addition, the population and demographic characteristics of the respondents in this study may differ from previous studies, such as differences in age, gender, education level, or geographical location that may affect the results of the study. The cultural context in which the research is conducted can also play an important role, as consumer risk perceptions and

celebrity endorser effectiveness may be influenced by different cultural norms and values in different countries or regions. The type of product or industry being researched can also be different, where Social Presence Celebrity Endorsers may be more effective in the context of a particular product or industry, while less effective in other contexts. In addition, changes in trends or changes in consumer behavior over time can also affect the results of the study, so newer research may reflect changes in consumer perceptions and preferences not found in previous studies.

The results of the study show that the social presence felt by the audience has a significant influence on consumer risk perception. This is evident from the Critical Ratio (CR) value greater than 1.96 and the P value which is less than 0.05, which indicates statistical significance, so H3 is supported. These findings are consistent with the results of previous studies conducted by Yue et al (2023) and Zhang et al (2023), which also found that social presence has a significant impact on consumers' risk perceptions. Their research supports the conclusion that social presence can influence how consumers assess and respond to the risks associated with a product or service.

The results showed that Social Presence viewer did not have a significant effect on Impulsive purchases because the CR value < 1.96 and the P value > 0.05 so that H4 was supported. This result is not in line with the findings of Yue et al (2023) and Zhang et al (2023) which found different results, namely that *Social Presence Viewer* has a significant influence on Impulsive buying behavior. This difference in results can be due to differences in situational context during the study, such as economic or social conditions at the time of the study may affect consumers' Impulsive purchasing behavior. In addition, this study also does not consider moderation variables that can affect the relationship between social presence products and consumer risk perception

The development of technology and social media can also affect the way consumers interact with Social Presence Viewers, resulting in different impacts. Previous research may have been conducted in a period where Social Presence Viewer was more prominent or relevant in influencing consumer behavior. Unmeasured psychological and emotional factors in this study can also be the cause of differences in results such as the level of stress, mood, or the level of emotional engagement of respondents when exposed to Social Presence Viewer can affect their impulsivity in shopping.

Additionally, an individual's perception of social presence may vary depending on their personal experience and comfort level with technology. In some cases, respondents may not feel the same intensity of social presence, thus influencing their decision to make Impulsive purchases. Therefore, the difference in the results of this study may reflect the complexity of consumer behavior which is influenced by various factors that interact with each other.

The results of the study show that the social presence of a product has a significant influence on consumer risk perception. This is evidenced by a Critical Ratio (CR) value greater than 1.96 and a P value of less than 0.05, indicating that the influence is statistically significant so that H5 is supported. These findings are consistent with the results of research conducted by Zhang et al. in 2023 and Tran in 2022, which also found that the social presence of a product significantly affects consumers' perception of risk. Their research supports the conclusion that the higher the social presence perceived by consumers, the lower their risk perception of the product.

These results confirm the importance of paying attention to the element of social presence in marketing strategies and product communication to reduce risk perception among consumers. By doing so, companies can increase consumer trust and comfort in the products offered, which in turn can encourage more positive purchasing decisions. The study also highlights the important role of social interaction and engagement in shaping consumer perceptions, which should be considered in product development and marketing strategies.

The results of the study show that the social presence felt by the audience has a significant influence on Impulsive buying behavior. This is evident from the Critical Ratio (CR) value greater than 1.96 and the P value of less than 0.05, which indicates a strong statistical significance so that H6 is supported. These findings are consistent with the results of research by Yue et al (2023) and Zhang et al (2023), which also found that social presence significantly influenced Impulsive purchases.

This study supports the conclusion that high social presence can increase consumers' tendency to make impulsive purchases. This suggests that social interaction and the feeling of someone else's presence in the context of selling or marketing a product can trigger an urge to buy without prior planning.

The results of the study show that risk perception has a significant influence on Impulsive buying behavior. This is evidenced by a Critical Ratio (CR) value greater than 1.96 and a P value of less than 0.05, which indicates a strong statistical significance so that H7 is supported. These findings are consistent with the results of Yue et al (2023) and Zhang et al (2023), which also found that risk perception significantly influenced Impulsive buying behavior.

This research supports the conclusion that the higher the risk perception perceived by consumers, the greater their tendency to make impulsive purchases. This indicates that the feeling of uncertainty or doubt experienced by consumers can trigger the Impulsive to buy spontaneously in an effort to reduce the psychological discomfort felt.

These results have important implications for marketing strategies and risk management in business. Understanding that risk perception can encourage impulsive buying behavior allows companies to develop a more effective approach to addressing consumer concerns. This strategy can involve providing more transparent information, offering product guarantees, or providing reviews and testimonials from other customers to reduce risk perceptions.

Additionally, companies can leverage this understanding in designing marketing campaigns that emphasize special offers or limited-time promotions, which can increase urgency and encourage Impulsive purchases. The research highlights the importance of managing consumer risk perceptions as part of a broader marketing strategy to increase sales and maximize profits.

The results of the study further showed that risk perception had a mediating role for the relationship between social presence, celebrity endorsements, viewers and products, because the CR value > 1.96 and the P value < 0.05 so that H8, H9 and H10 were supported. These results support our intuitive logic of stating that risk perception has a mediating effect. Risk perception has the potential to mediate the relationship between social presence and Impulsive purchases.

In the context of the social presence of celebrity endorsers, interactions that resemble face-to-face through live streaming shopping tend to build consumer trust and reduce product-related risks, thereby increasing the desire to make Impulsive purchases. The social presence of other viewers, especially through real-time comments and interactions, provides consumers with direct access to product information from other consumers' experiences, reduces uncertainty about product quality, and encourages Impulsive purchases. In addition, the high presence of products in live streaming allows consumers to test products virtually, create a more realistic experience, and reduce perceived risks related to product quality, thereby increasing the tendency to Impulsive purchases. Risk perception towards Impulsive purchases also plays a role, where high perceived risk can inhibit consumers' intention to Impulsive purchases, while low risk perception will further increase the desire for Impulsive purchases. As a result, it can be concluded that risk perception can function as a mediator that links the influence of social presence with consumers' tendency to make Impulsive purchases in the context of live streaming trading.

Through interactions similar to face-to-face in live streaming shopping, the social presence of a celebrity endorser can increase consumer trust and lower product-related risks, ultimately encouraging Impulsive purchases. On the other hand, the social presence of other audiences, especially through comments and direct interactions, provides consumers with instant access to product information based on the experiences of others, reduces uncertainty regarding product quality, and encourages impulsive purchasing behavior. Furthermore, the high exposure of products in live streaming allows consumers to try products virtually, creating a more real experience and lowering perceived risks related to product quality, thereby increasing the tendency to make Impulsive purchases. Risk perception also plays an important role in Impulsive buying; When perceived risk is high, consumers' intention to make Impulsive purchases decreases, while low risk perception can increase the desire for Impulsive purchases.

The results of the study strengthen the understanding that risk perception functions as a mediator that connects the influence of social presence with the tendency of consumers to make Impulsive purchases in the context of *live streaming commerce*.

4. Conclusion

The results of this study show several important findings regarding the influence of social presence on risk perception and Impulsive purchases of consumers in the context of live streaming shopping. First, the study found that Celebrity Endorser's Social Presence has a significant influence on consumers' risk perceptions. These findings suggest that the social presence of celebrity endorsers can reduce the perceived risk of consumers by increasing trust in online sellers. However, the study also showed that Celebrity Endorser's Social Presence had no significant influence on Impulsive purchases. This may be due to differences in methodology, respondent demographic characteristics, cultural context, product type, and changes in consumer behavior.

Furthermore, this study found that the social presence felt by the audience (Social Presence Viewer) has a significant influence on consumer risk perception. These findings suggest that social interaction can affect consumers' risk perceptions. However, the results of this study also show that Social Presence Viewer does not have a significant influence on

Impulsive purchases, which may be caused by situational, technological, social media, and psychological and emotional factors that influence Impulsive purchase decisions.

This study also shows that the social presence of products has a significant influence on consumer risk perception. These findings suggest that social interaction can reduce consumers' perception of risk towards products. In addition, the social presence of the product also has a significant influence on Impulsive purchases. These findings suggest that social interaction can encourage Impulsive purchases.

In addition, the study found that risk perception has a significant influence on consumers' Impulsive purchases. These findings suggest that uncertainty and doubt can trigger Impulsive purchases. Further, risk perception serves as a significant mediator in the relationship between social presence (celebrity endorsers, viewers, and products) and Impulsive purchases. Face-to-face interaction in live streaming shopping with celebrity endorsers can reduce risk and increase Impulsive purchases. Real-time interactions with other viewers provide information that reduces product uncertainty and encourages Impulsive purchases. The presence of products in live streaming provides a real-life experience that reduces risk and increases Impulsive purchases. Low risk perception increases the desire for Impulsive purchases.

The results of this study have several important implications for marketing practitioners and business managers, especially in the context of live streaming shopping. First, the finding that the social presence of celebrity endorsers can reduce consumer risk perceptions shows the importance of choosing and making good use of celebrities in marketing campaigns. Celebrity social presence can increase consumer trust in products and sellers, so marketing strategies involving celebrity endorsers should be designed to maximize their interaction and presence in live streaming.

In addition, although the social presence of celebrity endorsers does not have a significant effect on Impulsive purchases, it still emphasizes the importance of understanding the demographics and characteristics of the target audience to improve the effectiveness of marketing campaigns. Factors such as methodology, cultural context, and product type should be considered in depth when designing a marketing strategy.

The study also shows that the social presence of the audience has a significant influence on consumers' risk perception, but not on Impulsive purchases. These implications are important for live streaming platforms to improve social interaction features between viewers, such as real-time comments, product reviews, and sharing experiences to reduce consumer-perceived risks. The finding that a product's social presence has a significant influence on risk perception and Impulsive buying suggests that business managers need to create a more real and interactive shopping experience in live streaming. For example, live product demonstrations and real-time interactions with products can increase consumer trust and encourage Impulsive purchases.

For further research, it is recommended to examine more deeply the factors that influence the relationship between social presence and Impulsive purchases, including moderation variables such as the economic, social, and psychological conditions of consumers. Further research can also explore how evolving technology and social media affect consumers' risk perceptions and purchasing decisions. In addition, future studies could expand the research sample to take into account various demographics and more diverse

geographical characteristics. This will help understand how cultural and regional factors affect the results of the study.

Further research may also consider different methodological approaches, such as field experiments or longitudinal studies, to look at changes in consumer behavior over time and how social interactions in live streaming affect their purchasing decisions in the long term. Finally, it is advisable to test the influence of different types of products or industries in the context of social presence and Impulsive buying. This will provide more specific insights into how marketing strategies can be tailored to specific product or industry characteristics to maximize their effectiveness.

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