Original Article

The Effect of Live Streaming, Product Reviews, and Product Quality on Purchase Decisions

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Abstract: This study examines the effect of live streaming, product reviews, and product quality on consumer purchasing decisions in e-commerce. Data was obtained quantitatively by distributing questionnaires to fifty people who shopped online. Then, the data was tested using regression analysis. The results show that live streaming significantly influences consumer purchasing decisions, proving that live interaction is crucial to increasing buyer interest. Product reviews are also shown to be one of the important factors in consumer purchasing decisions. However, interesting findings were found from the product quality factor, which showed that product quality did not significantly influence consumers' purchase decisions. Nonetheless, the F-test results show that live streaming, product reviews, and product quality significantly affect consumers' decisions to purchase products. These results show how complex online consumer behaviour is, reminding businesses to understand better how digital dynamics affect consumer perceptions. The upshot is that this research offers a broader perspective on the elements that influence online consumer purchasing behaviour. This has practical consequences for building competitive and efficient marketing strategies in the e-commerce era.

Keywords: Purchase decision, Live streaming, Product review, Product quality.

1. Introduction

The increasing use of Internet technology has become a way of life for some people in Indonesia and the world (Ellitan, 2020). In online commerce, digital technology has revolutionised consumer behaviour, giving rise to a new paradigm in purchasing decisions (Chauhan & Sarabhai, 2018; Faulds et al., 2018; Shukla & Nigam, 2018). Live streaming experience, product reviews and product quality are three factors that constantly influence consumer choices in the vast digital marketplace. This study aims to uncover the intricate relationship between these components and explain their impact on consumers' purchase decisions. According to Qazzafi (2019), purchasing decisions are part of consumer behaviour in choosing, buying, and using how goods, services, ideas or experiences to satisfy their needs and wants. According to

Kotler and Keller (2009), this purchasing decision process has five stages: problem recognition, information search, alternative evaluation, purchase decision, and post-purchase behaviour. Apart from promotions, several things can influence purchasing decisions in online shopping. One of them is product reviews from other consumers, which is important information for consumers, while information search is included in the stages of making a person's purchasing decision.
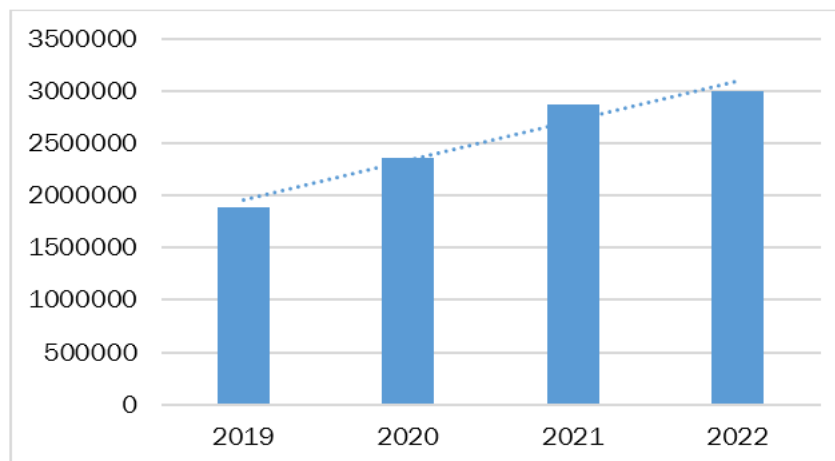

Figure 1. Number of e-Commerce

Source: Central Bureau of Statistics (2023)

Figure 1 presents the number of e-commerce in Indonesia, which increases yearly. The growing number of e-commerce platforms and the surge in online transactions underscore the need to understand the influence of the diverse aspects that shape consumer choices (Felix& Rembulan, 2023). Live streaming is an increasingly popular online marketing strategy (Wongkitrungrueng et al., 2020; Zhang et al., 2020; Kingsnorth, 2022). In this live-streaming feature, there is already an option for business owners to post products according to the available storefront. When the live streaming starts, each product can be clearly explained in detail, from the price and quality of materials to how to use them. They can even interact directly with the audience by answering questions from potential buyers who watch the live streaming. In the live streaming feature, business owners can also see insights about how many accounts have been reached and watched their product promotion videos within a certain time frame. Live streaming is an effective way to promote products as it allows direct interaction with the audience, provides explanations about the product, and provides real-time demos (Wang & Wu, 2019; Wongkitrungrueng et al., 2020).

Meanwhile, consumers' opinions about products and reviews greatly influence their buying decisions (Von Helversen et al., 2018; Thomas et al., 2019). Consumers usually rely on the experience of others to judge the quality of the product and their level of satisfaction before deciding to buy products (Xu, 2020). According to Bhatti and Rehman (2019), consumers must first look for information about the product they want to buy because it minimises the negative impact or risk they will get. This online customer review is very useful for prospective buyers to determine purchasing decisions, with reviews from previous buyers making prospective buyers confident in deciding on a purchase. Online product reviews are a form of word-of-mouth communication where potential buyers get information about products from consumers who have bought and benefited from the product (Hussain et al., 2018). Furthermore, according to Sri Rezeki & Ninie (2019), reviews are one of the factors that determine a person's purchasing decision; determine a person's purchasing decision, because the review is an indicator of popularity that will affect the willingness to buy a product (Kim et al., 2020). Understanding the relationship between these components is crucial for companies trying to optimise their marketing strategies; it is also very important for researchers who want to understand the complexities of modern consumer behaviour.

Consumers decide to buy a product or use their money for other purposes based on the need for a product, offering various product variants in various stores and product quality (Limpo et al., 2018). Product quality is the ability of a product to perform its functions, including durability, reliability, accuracy, ease of operation and repair, and other valuable attributes (Djaelani & Darmawan, 2021). Sugandha (2022) states that quality is the driving force for customer satisfaction. So, the easiest way to increase the trust of potential buyers is to make good quality products worth selling. Thus, product quality is an important factor influencing consumer purchasing decisions.

While existing literature has explored certain aspects such as live streaming, product reviews, and product quality, the intricate relationships among these elements warrant closer examination. Several previous studies have detailed important aspects of online consumer behaviour, but studies that

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comprehensively investigate the interactions between live streaming, product reviews, and product quality are limited. Some studies focus on a single element, such as the influence of live streaming on consumer perception (Zhang et al., 2022) or the impact of product reviews on purchase decisions (Von Helversen et al., 2018). Others focus on aspects of product quality without detailing how live streaming and product reviews work together to shape consumer perceptions of that quality (Limpo et al., 2018). As for the existing research findings, there are different opinions and conflicting hypotheses regarding the extent to which live streaming and product reviews can influence product quality perceived by consumers. Therefore, this study aims to fill this gap by thoroughly analysing the role of live streaming, product reviews, and product quality in online consumer purchasing decisions. The main objective of this study is to uncover the relationship between live streaming, product reviews and product quality to improve our understanding of their collective influence on consumer decisions. The potential of this research to inform businesses on effective marketing strategies, increase consumer confidence, and aid product development initiatives is potential. This work adds to the academic discussion on consumer behaviour by bridging the theoretical gap. In addition, it offers practical perspectives for businesses in addressing competition in the digital marketplace.

2. Materials and Methods

This study utilises a quantitative approach to investigate the relationship between live streaming, product reviews, and product quality influencing online consumer purchasing decisions. The decision to adopt a quantitative methodology is rooted in the need to gain statistical insights and establish empirical relationships among the variables under study (Fellows & Liu, 2021). The participants in this study consisted of individuals who have done online shopping through various e-commerce platforms, with a total sample size of 50 respondents selected based on the principle of central limit theory to ensure representative and reliable results (Zhang et al., 2022). The sampling technique used in this study is purposive sampling, which selects respondents with a history of online shopping, ensuring that the sample is relevant to the research objectives (Campbell et al., 2020).

The data for this study was obtained through distributing questionnaires to selected participants. This research instrument aims to capture relevant information regarding respondents' experience with live streaming, product reviews, product quality, and purchasing decisions. Variable measurement uses a Likert scale, which has five categories. The five categories include score 1 = strongly disagree (STS), score 2 = disagree (TS), score 3 = neutral (N), score 4 = agree (S), and score 5 = strongly agree (SS). Questionnaires facilitated systematic and standardised data collection, allowing for a comprehensive analysis of the variables in this study. Quantitative data analysis was conducted using regression analysis to test the relationship between the variables under study. Regression analysis allows for a differentiated exploration of how live streaming, product reviews and product quality collectively influence the decision-making process of online consumers.
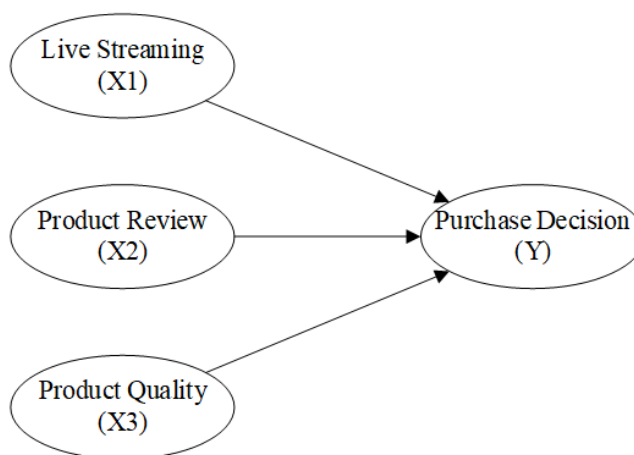

Figure 2. Research Framework

H1: Live streaming has a significant effect on purchase decision
H2: Product review has a significant effect on purchase decision
H3: Product quality has a significant effect on purchase decision

Regression analysis was used to study how the relationships between live streaming, product reviews and product quality affect online shoppers' decisions. The basis of the decision to use quantitative

methodology was creating empirical relationships between the variables under study and obtaining statistical insights. The findings from this analysis will contribute to a deeper understanding of the individual and simultaneous impact of these factors on purchase decisions.

3. Results

3.1. Linearity Test

In statistical modelling, information about the relationship pattern between variables is needed to determine whether a method is used through a parametric or non-parametric approach (Chambers & Hastie, 2017). The Ramsey Reset test determines whether the relationship between variables is linear or non-linear. Linearity assumption testing uses the Ramsey Reset Test with R software. Linearity assumption testing is carried out on each exogenous and endogenous variable relationship. The Ramsey Reset Test results on the relationship between exogenous variables and endogenous variables provide a p-value of 0.9706 (X1 with Y), 0.9605 (X2 with Y) and 0.9763 (X3 with Y). Based on these results, the relationship between exogenous variables and endogenous variables has a p-value greater than $\alpha = 0.05$, thus providing a decision to accept H0, which means that the relationship between exogenous variables and endogenous variables is linear.

3.2. Classical Assumption Test

Linear regression analysis determines the relationship between exogenous variables and endogenous variables. There are classical assumptions that underlie multiple regression analysis, including the assumptions of residual normality, homoscedasticity of residual variance, and non-multicollinearity. Ensuring the fulfilment of these assumptions is important so that the analysis results are reliable and generalisations can be made to a larger population. First, the normality of the residuals is tested to check whether the distribution of the residuals from the multiple linear regression model is normal. The test statistics have invalid results if the residual data is not normally distributed. On the other hand, if the residual data is normally distributed, the test statistics have valid results. The test results show that the p-value is 0.3302, exceeding the significance level $\alpha = 0.05$, so it can be concluded that the residuals are normally distributed. Second, according to Harlan (2018), homoscedasticity assumes that the residuals have a constant variance. The regression model must have a constant variation from one observation to another. Homoscedasticity testing is carried out to ensure that the variance of the residuals is homogeneous. The test results show a p-value of 0.3905, which exceeds $\alpha=0.05$. Thus, it can be concluded that the assumption of homoscedasticity is met.

Third, the non-multicollinearity check looks at the Variance Inflation Factor (VIF) for exogenous variables. Harlan (2018) describes how to detect whether there is a case of multicollinearity by calculating the VIF (Variance Inflation Factor) value or its inverse, called tolerance. A VIF value greater than 10 or a tolerance value less than 0.10 indicates a case of multicollinearity. The results show that all exogenous variables have VIF values of less than 10, indicating no multicollinearity among these variables. Thus, the assumption of non-multicollinearity in the model is considered met. Based on the results of testing these assumptions, it can be concluded that the data used in the regression analysis has met the classical assumptions of regression analysis. Therefore, the resulting model is considered valid and reliable to describe the relationship between the variables studied.

3.3. Hypothesis Testing

Parameter estimation is used to estimate the regression coefficients. This is used to determine the relationship between variables to detect the magnitude of the relationship. Parameter estimation is done with the help of the R program. The regression parameter estimates formed after all assumptions are met are $Y = 1.3719 + 0.1766X1 + 0.3717X2 + 0.1087X3$; Partial test (t-test) is used to assess whether each exogenous variable (live streaming, product review, product quality) has a significant influence on the endogenous variable (purchase decision) when other variables are considered constant. Table 1 below presents the results of the partial test (t-test), which reveals each independent variable's regression coefficient and statistical significance on the purchase decision. This analysis is important to understand the relative contribution of each variable individually to the purchase decision of the customer.

Table 1. Hypothesis Testing

H	Path Analysis			Coefficient	P-Value	Decision
1	Live Streaming	→	Purchase Decision	0.1766	0.0498	Accepted
2	Product Review	→	Purchase Decision	0.3717	0	Accepted
3	Product Quality	→	Purchase Decision	0.1087	0.2663	Rejected

Table 1 shows the regression coefficient for the relationship between live streaming and purchase decision is 0.1766 with a P value <0.05. The positive regression coefficient indicates that the better the live streaming, the higher the customer's purchase decision. With a P value less than the real level of 0.05, it can be concluded that live streaming significantly affects the purchase decision. Also, the regression coefficient for the relationship between product review and purchase decision is 0.3717, with a P value <0.05. The positive regression coefficient indicates that the better the product review, the higher the customer's purchase decision. With a P value that is less than the real level of 0.05, it can be concluded that the product review significantly affects the purchase decision. The regression coefficient for the relationship between product quality and purchase decision is 0.1087, with a P value> 0.05.

The positive regression coefficient indicates that the better the product quality, the higher the customer's purchase decision. However, with a P value greater than the real level of 0.05, it can be concluded that product quality does not significantly affect the purchase decision. In addition to conducting the t-test, which is used as a partial test, this study also conducted an F-test to examine the effect of all independent variables on purchasing decisions. The results of the F test obtained a p-value of 0.000, which is much lower than the significance level $\alpha = 0.05$. The live streaming, product review, and product quality variables significantly influence purchase decisions. Therefore, this finding confirms that the factors examined in this study significantly contribute to the customer's overall purchase decision.

4. Discussion

In this study, three hypotheses are tested for the relationship between variables. The first hypothesis states that there is a significant influence between live streaming and purchase decisions. The second hypothesis, product review, significantly affects purchase decisions. Then, the third hypothesis states that product quality significantly affects purchase decisions. The three hypotheses were tested using a partial test (t-test), the results of which are presented in the results chapter. In addition, a simultaneous test (f test) was also conducted, which examined the effect of all exogenous variables on purchase decisions. The result of testing hypothesis 1 is accepted, which means there is enough evidence to conclude that live streaming significantly affects a customer's purchase decision. This means that live streaming done by businesspeople can decide whether the customer will buy the product offered or not. Live streaming sales affect consumer buying interest. This research is based on findings (Zhang, 2020; Lu & Chen, 2021). The study's results prove that live-streaming shopping positively and significantly affects purchase intention. Meanwhile, this study shows that live streaming positively impacts consumer buying interest. This condition can help increase sales.

The results of hypothesis testing provide a solid basis to understanding why live streaming can play an important role in customer interest in purchasing goods. Its ability to present product information in real-time allows live streaming to provide customers with an interactive experience that may not be accessible through conventional marketing approaches (Chai & Whon, 2019). Live streaming can offer an immediate understanding of the product, capture the customer's attention more closely, and create an emotional connection between the customer and the brand (Kang et al., 2021). These are the main reasons for the success of live streaming in influencing purchasing decisions. The results of previous studies show that live streaming can increase purchase interest, and overall, these findings provide a strong reason to use live streaming as a good marketing strategy to increase sales and influence the purchasing decisions of e-commerce customers.

Product review is a comment consumers make when buying goods, products, or services on the acceptance of good or bad goods or service products offered by writing or evaluating these products or services (Fakhira & Simanjuntak, 2023). Hypothesis 2, which examines the effect of product review on consumer purchasing decisions, provides t-test results showing a partial influence between the product review variable and purchasing decisions. This research aligns with the results of Von Helversen et al. (2018) and Chen et al. (2018) which found that product reviews influence consumer decisions. The success of product reviews in influencing consumer purchasing decisions is drawn from their nature, which provides direct insight from previous consumer experiences (Zhong et al., 2019). Product reviews provide important information about quality, performance, and previous customer satisfaction in e-commerce, where customers cannot inspect or try the product directly. Also, such reviews are genuine and reliable, instilling trust among potential customers. How customers perceive a product is greatly influenced by this. Businesses can find out that reviews directly reflect customers' perceptions of the product, so they can discover the strengths and weaknesses of the product and refine which features need to be improved (Zhang et al., 2019). Therefore, utilising the benefits of product reviews as a strategic tool is essential when building marketing campaigns that focus on consumer satisfaction and creating a positive image of the brand or product in the minds of potential consumers.

Hypothesis 3 states that the effect of product quality on purchase decisions should be tested. Based on Table 1, hypothesis 3 is rejected because the p-value exceeds alpha (0.05). This explains that product

quality has no significant effect on purchase decisions. The rejection of Hypothesis 3, which examines the effect of product quality on purchase decisions, as in Table 1, provides an interesting understanding of consumer behaviour in an e-commerce environment. These results do not align with the research conducted by Darmawan (2018) and Nasution et al. (2022), which stated that product quality significantly affects purchasing decisions. This insignificant result can be explained by the characteristics of e-commerce that do not allow consumers to test or see product quality directly before making a purchase (Nadiya & Wahyuningsih, 2020). In the context of e-commerce purchases, consumers are likely to rely more on information that can be accessed online, such as live streaming and product reviews, as a key determinant in making purchase decisions. Product quality does not influence purchase decisions and suggests that other components, such as information presented through online media and virtual interactions, have a greater influence in an e-commerce environment (Maiza et al., 2022). Therefore, businesses should be more active and innovative in promoting the value of products digitally by clearly explaining their features and benefits and creating an online experience that gives customers the confidence to decide to buy the product without having to inspect it in person. By knowing this, businesses can convert customer interest into a purchase decision, even without a physical product.

In this comprehensive analysis of research variables, individual assessments through the t-test are carried out. F testing is conducted to determine how live streaming, product reviews, and product quality affect overall purchasing decisions. The F-test results show that the independent variables, namely live streaming, product reviews, and product quality, significantly influence the dependent variable, namely purchasing decisions. The significance of the F test shows how important it is to assess the joint effect of various factors on the desired outcome. In such a situation, product purchasing is influenced mainly by the interaction between live streaming, product reviews, and product quality. These variables suggest that a broader approach to marketing and product presentation is essential for companies looking to increase their impact on consumer decision-making.

The synergy between these variables aligns with trends in online customer behaviour. Increased digital interactions and reliance on virtual experiences have increased the influence of live streaming, product reviews and perceived product quality on buyer decisions. The results confirm the related nature between these components and emphasise that businesses should strategically integrate them in marketing to interact with and influence consumers effectively. Overall, the F-test results show that the factors studied, such as quality, live streaming, and product reviews, collaborate to play an important role in customers' purchasing decisions. These findings offer information that can be used to optimise marketing strategies, improve customer satisfaction, and, ultimately, drive successful online transactions for businesses facing a complex e-commerce landscape.

5. Conclusions

This study provides a better understanding of online consumer behaviour by investigating the relationship between live streaming, product reviews, and product quality with consumer purchase decisions in an e-commerce context. The t-test results show that live streaming and product reviews influence purchase decisions. These findings align with previous research that emphasises the importance of live streaming in increasing customer engagement and encouraging them to purchase goods. In the same way, reviews serve as an essential source of information for customers who want to know how reliable and quality a product is before buying. However, an interesting finding that deserves further attention is related to Hypothesis 3: product quality. The results show that product quality does not significantly influence purchasing decisions. This finding gives a better understanding of the different ways of e-commerce. This decision indicates that directly checking product quality is complex, and customers tend to rely on other things, such as live streaming and product reviews when choosing a product.

However, it has been shown that these three factors significantly influence purchasing decisions, although product quality is not shown to have a partial impact. Their collective strength forms the basis of a significant e-commerce marketing strategy. Therefore, the results give companies the impetus to develop more innovative and efficient marketing strategies to increase their influence in driving online consumer purchasing decisions. It provides a broad understanding of the components that make up online consumer purchase behaviour. For future research, conducting more in-depth research on the three variables' contribution to purchasing decisions is recommended. In particular, the product quality does not significantly affect purchasing decisions. It is hoped that in future research, other variables will be added that influence purchasing decisions, such as price, trust, celebrity endorsers, and others. So, it can provide a higher index value and produce a broader picture of the research problem being studied. This research can also be used as a reference or reference material for future researchers on the same topic.

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