



THE ROLE OF STREAMING, ONLINE REVIEWS, RATINGS IN INCREASING CUSTOMER ENGAGEMENT WITH TRUST AS A MODERATOR VARIABLE

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Abstract

This quantitative research takes data that is used as a survey target or object of data collection is market place users in West Java. SmartPLS version 4 used to process and analyse data collection result and its results are: The Customer engagement affected significantly by Customer trust, the customer trust affected significantly by live streaming variable, customer engagement affected significantly by the live streaming, online review variable no effect on customer Trust, customer trust variable affected significantly rating, customer engagement affected significantly by rating variable, the effect of live streaming to the customer engagement mediated by the customer trust meet the requirements in this study. the online review effect to the customer engagement mediated by the customer trust does meet the requirements in this study, the rating effect to customer engagement mediated by the customer trust meet the requirements in this study.

Keywords: live streaming; online reviews; rating; customer engagement; customer trust

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INTRODUCTION

In this digital era where everything is connected, online marketplace platforms have become the main place for consumers to buy various products and services. The technological development facilitates the behavior of customers who previously made purchases directly at offline shops, to make purchases through marketplaces or e-commerce. In addition, the existence of various types of marketplaces also provides opportunities for sellers to increase product marketing at a small cost but provides extraordinary benefits in the economic activities carried out. The high growth of internet users in Indonesia will have a very good business effect on market places in Indonesia, such as Blibli, Bukalapak, Lazada, Matahari Mall, Shopee, Tokopedia, and others. The large number of e-commerce users is a promising prospect for business people in marketplaces such as Blibli, Bukalapak, Lazada, Matahari Mall, Shopee, Tokopedia, and others. The following is supporting data for marketplace users in Indonesia, predicted to reach 219 million and an estimated

transaction value of 850 million dollars in 2024. This number is expected to continue to increase from year to year. This explanation can be illustrated in the graph below.

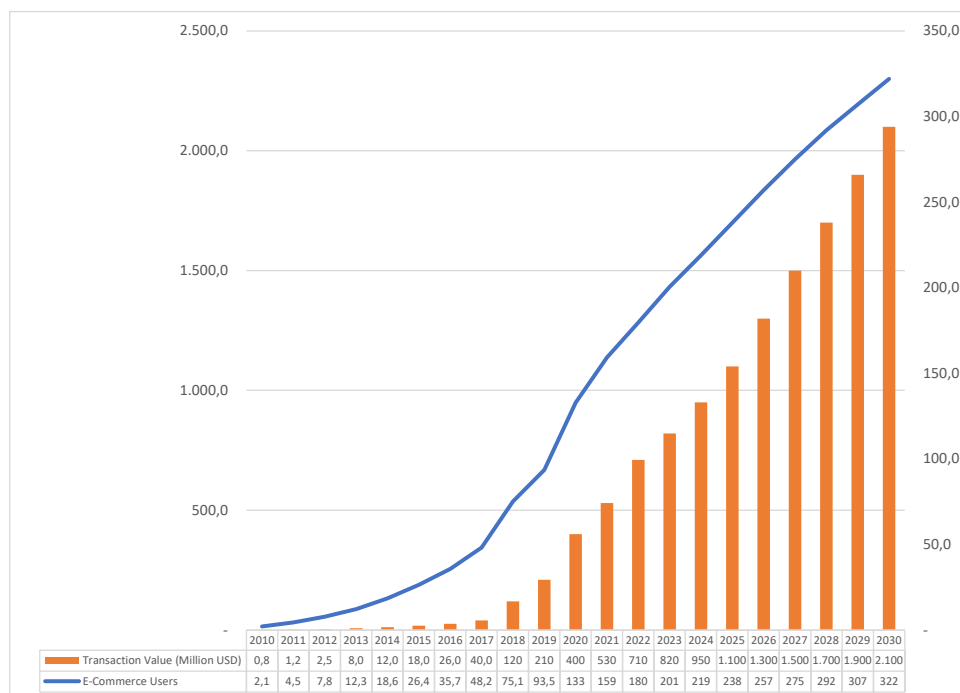


Figure 1. Historical Data and its Projections of e-commerce users and Values of transaction in Indonesia 2010 – 2029
Source: Data processing result by Author, 2025 (Kemenkominfo, Statistika, iDEA and others)

The implementation of digital technology has brought the changing behavior of consumer, especially in the realm of marketplace. In West Java, as one of the provinces with a high internet penetration rate and rapid growth of marketplace users, This phenomenon is shown by research conducted (Judijanto et al., 2024), this study provides an in-depth understanding of how digital economic networks influence SME growth within the context of e-commerce platforms in West Java. Empirical findings emphasize the importance of robust broadband infrastructure, combined with digital skills, online payment systems, and supportive policies, in driving positive outcomes for SMEs. E-commerce platforms are now not only a place for buying and selling transactions, but also a dynamic interaction space between sellers and buyers. Variables of live streaming, online reviews, and customer ratings are the main weapons for businesses to attract attention and build relationships with consumers. Sellers can utilize live streaming to present products in a live and interactive manner, however rating and reviews of customer have a significant effect on potential buyers' perceptions especially about the product or service quality. The importance of live streaming, reviews and ratings is part of digital marketing, supported by the concept of digital marketing theory carried out by (Armstrong & Kotler, 2015), digital marketing refer to marketing via the internet using company websites, online advertising and promotion, email marketing, online video and blogs, research that discusses the importance of live streaming is research (X. Luo et al., 2025) which mentions live streaming commerce (LSC) a subset of electronic commerce that combines real time social interaction with digital marketing, LSC is increasingly used for enhancing customer engagement, product promotion, transaction facilitation and improving online shopping experiences. The importance of online reviews and ratings was also discussed by researcher (De Pelsmacker et al., 2018), digital marketing strategies and tactics affect both the volume and valence of online reviews and, indirectly, hotel performance, online reviews lead to a better business performance, improvement in reviewers' rating can increase sales up to more than five percent.

The increase in digital interaction does not necessarily directly impact customer engagement to the fullest. In the context of marketplace users in West Java, customer trust is an important element which discusses the extent to which consumers are willing to engage more deeply with a particular brand of product offered by a seller. Customer trust can be an important bridge that mediates the live streaming, reviews, and ratings influence on the level of customer engagement.

The phenomenon of the rampant use of marketplaces in West Java shows a significant change in people's shopping behavior, which now increasingly relies on digital platforms to meet their daily needs. Interactive items are live streaming, online reviews, and ratings used as key strategies by sellers to attract attention and build a good relationship with consumers. However, although these features are increasingly used by businesses in the marketplace, the reality is that the level of customer engagement is still not fully optimized. Many consumers remain passive, only browsing products without providing feedback, comments, or building long-term relationships with brands or sellers. This problem can be caused by the low level of customer trust in the information presented digitally. Not a few marketplace users in West Java have doubts about the authenticity of products, the honesty of reviews, or the quality of seller services despite the live streaming and review features. Research Kholifatul Maulida et al. (2023), explains that Product reviews have an insignificant positive effect on purchasing interest of Shopee e-commerce users in Kudus Regency. Research (Kamisa et al., 2022), The results of this study indicate that online customer reviews and online customer ratings have a positive and significant effect on consumer trust in the Shopee Marketplace.

Research related to customer engagement includes research by (Busalim et al., 2021), The results of the study show that customer engagement behavior is significantly influenced by social interaction factors, technology (interactivity and system quality), and motivational factors (hedonistic and utilitarian motivations and perceived value).. For research related to the role of customer trust as a moderator variable in the customer engagement approach is the research of Agyei et al. (2020). The results of the study revealed that trust in service providers, regulators, economic-based trust, and information-based trust significantly affect customer engagement variables. The results also revealed that customer engagement significantly increases customer loyalty and mediates the relationship between trust dimensions and customer loyalty. The findings of the study highlight the importance of building convincing customer trust to increase customer engagement and customer loyalty. (Rahmawati & Aji, 2015) explains that the results of the study show that customer engagement positively affects customer satisfaction and brand trust. .Li et al. (2020), explains, These findings indicate that brand attachment and customer trust fully mediate the relationship between customer engagement and brand loyalty, especially the mediating role of brand attachment. Therefore, to improve customer engagement, it is not enough to only improve brand loyalty and brand attachment, but customer trust must be considered to be improved. This shows the importance of the role of consumer trust so that when there is trust, consumers will easily provide their involvement in the existing market, including by giving likes, positive comments, and sharing existing information.

This shows that there is a gap between the information displayed and customer perceptions about the specifications of products that have been purchased and used. Customer trust can be a moderating variable that can bridge the effect of live streaming, online reviews and ratings on customer engagement. Research with this theme can help businesses to design strategies to establish good relationships with short-term and long-term consumers, especially in West Java.

Study entitled live streaming, online reviews, ratings in increasing customer engagement with trust as an intervening variable, starting from previous studies. Previous research related to live streaming, Research (Wongsunopparat & Deng, 2021), which discusses that there is a significant influence of the variables Product Quality and Customer Loyalty on Purchasing Decisions, while price, promotion, public image carried out through live streaming interactions have an insignificant influence on purchasing decisions. Research ((Zhang et al., 2023), the results of the study show that the LVS strategy can increase customers' online purchasing intentions by reducing psychological distance and perceived uncertainty. Research (Guo et al., 2021), explains that the live streaming variable has a significant effect on increasing purchase intentions. Research by Ma et al. (2022), trust and involvement fully mediate the effect of social presence on purchase intentions, involvement has a positive effect on purchase intentions. Research Suhyar & Pratminingsih (2023), from the research that has been conducted, it was found that Live Streaming and Product Quality have a positive and significant effect on e-Trust. Research by Wongkitrungrueng & Assarut (2020), shows how the live streaming mechanism can create transactions by increasing customer trust. The novelty in this study compared to previous studies is the existence of a live streaming variable in all market places in Indonesia, where this variable is related to other variables that have not been studied by other researchers, for example the role of other variables, namely online reviews, ratings, trust, and engagement simultaneously.

Previous research related to variable Online Customer Review, Research (Prilia Naomi & Ardhiyansyah, 2021; Sugianto & Astuti, 2023; Ventre & Kolbe, 2020), discuss in detail how online customer reviews have a significant influence on purchasing decisions. Based on research (Filieri et al., 2021), explains that online reviews play an important role in shaping consumer perceptions of product quality and purchasing intentions. Several previous research results (Prilia Naomi & Ardhiyansyah, 2021), discusses the significant influence between online customer review variables, ratings and customer trust on purchasing decisions. The research conducted (Liu & Ji, 2018) used the variables of online customer reviews, promotional marketing and consumer trust in purchasing decisions. Research (Kamisa et al., 2022a), The results of this study indicate that online customer reviews and online customer ratings have a positive and significant effect on consumer trust in the Shopee Marketplace. The update in this study compared to previous studies is the existence of an online customer review approach in all market places in Indonesia, which explains the relationship between online reviews, ratings, customer trust and customer engagement. Most previous researchers studied the relationship between online reviews and purchase intention.

Previous research related to ratings, research (Smironva et al., 2020), which explains the comparison of online ratings and offline ratings, research (Naumzik et al., 2022), explain the Prediction of Business Failures from Customer Ratings, Research (Geetha et al., 2017), explains the existence of a good relationship between customer sentiment and online customer ratings for hotel services. Research Magdalena et al. (2023), The results of the study concluded that the factors that influence respondents with bad ratings are factors of perceived ease of use, social influence, and customer satisfaction. Based on previous research related to rating variables, the new thing in this study is to see the relationship between customer ratings and customer engagement through customer trust, which has never been done by other researchers.

Previous research related to variable Customer Trust, Research (Ventre & Kolbe 2020), explain the significant influence of three variable: customer risk, customer trust and online reviews in purchase intention. Research (Agyei et al., 2020), explains that trust in service providers, regulators, economic-based trust, and information-based trust significantly affect customer engagement and customer engagement will significantly increase customer loyalty and mediate the relationship between trust dimensions and customer loyalty. The findings highlight the importance of building convincing customer trust to advance customer engagement and customer loyalty. Research (Leninkumar, 2017), customer trust is influenced by customer satisfaction which proves that customer satisfaction is an antecedent of customer trust. The novelty of this study compared to previous studies is that there is a significant relationship between customer trust and customer engagement, especially for the marketplace market.

Previous research related to variable Customer engagement, (Chuah et al., 2020) is an empirical study applied to the airline industry, which explains that there is a significant relationship and influence between perceived corporate social responsibility-brand fit and sustainable customer engagement behavior serially mediated by self-cause and/or brand integration and moderated by environmental concern and green belief. Research (Chen et al., 2021), examining Customer engagement research in hospitality and tourism, (Gao & Huang, 2021) which explains the integration between product quality and customer loyalty with the omni channel retail target market. The emphasis of my research compared to other research, customer engagement is associated with the existence of trust that is formed in customers after seeing positive live streaming and positive online reviews, while other researchers customer engagement cases in the airline industry, hospitality, tourism while in this study the emphasis of customer engagement in the marketplace.

This study aims to dig deeper into how customer reviews and customer ratings play a role in building customer trust and how to improve it in the marketplace, as well as the challenges faced by marketplace users in West Java in utilizing these features. The variables in this study consist of 4 variables, namely live streaming, rating, customer trust and customer engagement, which makes the analysis more complex and the results will be able to enrich previous research. This Research also explore consumer behavior, especially marketplace users so that it can become additional new knowledge for other researchers, business people, both consumers and producers as well as new marketing knowledge, especially related to the case under study. This research provides benefits both theoretically and practically. The theoretical benefit is the development of a trust-based customer engagement model through live streaming and online customer reviews, especially for cases in

marketplaces in Indonesia. Practical benefits provide recommendations for marketplace features that increase trust and engagement by considering input from existing online reviews.

This study will examine the extent to which the variables of live streaming, online reviews, and ratings influence increasing customer engagement, where trust is a moderating variable. The scientific novelty of this research is the integration of several digital marketing variables in one comprehensive model, namely the combination of live streaming, online reviews, and ratings to analyse their impact on customer engagement, making trust a moderator variable that provides a new perspective in understanding how trust affects the strength of the influence of digital content on customer engagement, amid the dominance of live streaming platforms in consumers' digital lives, this research expands the understanding of the role of streaming in creating customer interactions and emotional engagement - which has not been widely explored empirically in combination with reviews and ratings. The results of this study provide a new approach for digital marketers in building content strategy-based customer engagement filtered by the level of consumer trust in the platform or brand. This research is relevant to the consumer behaviour of millennials and Gen Z who are heavily influenced by streaming content and online reviews, making it the latest empirical contribution in the digital consumer behaviour domain.

METHOD

This research uses a quantitative and associative method approach which specifically focuses on determining the relationship between two or more variables. (Sekaran & Bougie, 2010). Population and sample: the target data consists of consumers using the marketplace since the total number of marketplace users is unknown, the size of sample was calculated using the Cochran formula, producing sample 337 data. The sampling technique used was non-probability sampling because the sample size was unknown due to the lack of a sample frame and the focus on a specific case. Purposive sampling was chosen for several reasons, namely: selecting appropriate and specific respondents and the specific objectives of this study: Consumers must have a marketplace account and respondents must be domiciled in the province of West Java and respondents aged at least 15 years old who already understand the marketplace.

The research instrument used was a questionnaire, the method to collect data used in this study by online survey via Google Forms. The data collection process is carried out by distributing questionnaires through social media with targets who have made transactions in the marketplace and are domiciled in the province of West Java. The questionnaire was created using Google Form which had been prepared in accordance with the objectives of this study with the aim of respondents filling out the questionnaire online, time-limited and the results could be monitored online. If the respondents who filled out were domiciled outside West Java and had never made transactions in the Marketplace, then the respondent will be excluded. To make it easier for respondents, the questionnaire form is prepared using a Likert scale from value 1 up to value 5, that can be describe" to "The survey employed a Likert scale ranging from 1 to 5, where: (5) Strongly Agree, (4) Agree, (3) Neutral, (2) Disagree, and (1) Strongly Disagree." The total data 337 respondents were processed using the SEM PLS Version 4 application.

The data analysis technique used Smart PLS version 4 software (Hair et al., 2010) SmartPLS has the advantages of being able to be used for primary and secondary data, small data samples, for non-normal data distribution, easy to use and interpret. The data processing stages are: first, testing the validity and reliability of the outer model; Second, testing the validity and reliability of the inner model, and in the final stage, testing the hypothesis using bootstrapping.

The stages of the research methodology can be explained in Figure 2 below.

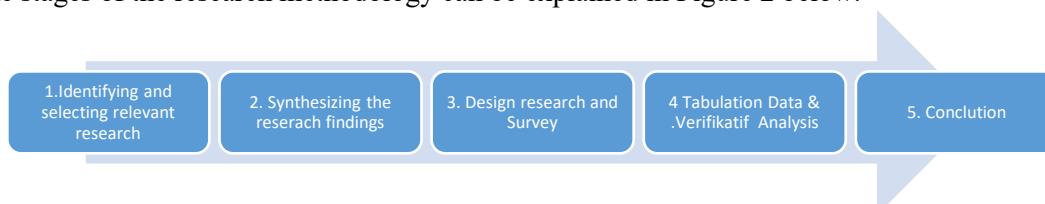


Figure 2. Research Stage

In the research methodology stage, the steps we took were: (1) Identify journals that are relevant to the research theme using the keyword live streaming, online customer review, rating, trust and customer engagement. (2) Synthesize the findings of relevant journals. (3) Creating a research design on how to compile closed questions on each variable used and then poured into a google form, to be sent to respondents in West Java via social media. To attract respondents to fill out the questionnaire, the researcher gave prizes to 15 people selected at random. (4) Tabulate data and then conduct descriptive data analysis using quantitative analysis with verification approach with SmartPLS version 4. (5) Conclusion.

RESULTS

The data was obtained from data collection of 337 respondents and then the data was processed using SEM PLS.Version 4 application. The outer model is used to test the validity and reliability of data, where this model can explain how each indicator block connected to its latent variables. According to research by Jogiyanto and Abdillah, 2014 this model used to assess the validity and reliability of research data. Referring to JF Hair's research (2014), explains that validity test will use two measurement methods are: Validity of Convergent and Discriminant measurement.

Convergent validity is used to test the extent to which indicators in a construct (latent variable) are strongly correlated and represent the same construct. In the Smart PLS (Partial Least Squares Structural Equation Modeling) application, convergent validity is evaluated by considering three factors, namely: factor loading, composite reliability, and average variance extracted (AVE). Referring to the research of Hair et al. (2010) which explains that the practical method commonly used for initial examination of factor matrices with values less than or equal to 0.5 is considered ineligible, while values greater than or equal to 0.6 are considered eligible and the higher the value, the better. The greater the value of the loading factor, the more important its role in the relationship between variables. In this study, a factor loading value of 0.5 and the average variance extracted (AVE) value is used as the convergent validation value. The results of the convergent validation test are declared valid if the external loading value and the average variance extracted (AVE) value are greater than 0.5. In Figure 1, the path diagram value show the relationship between the loading of each indicator and the causal relationship between its components.

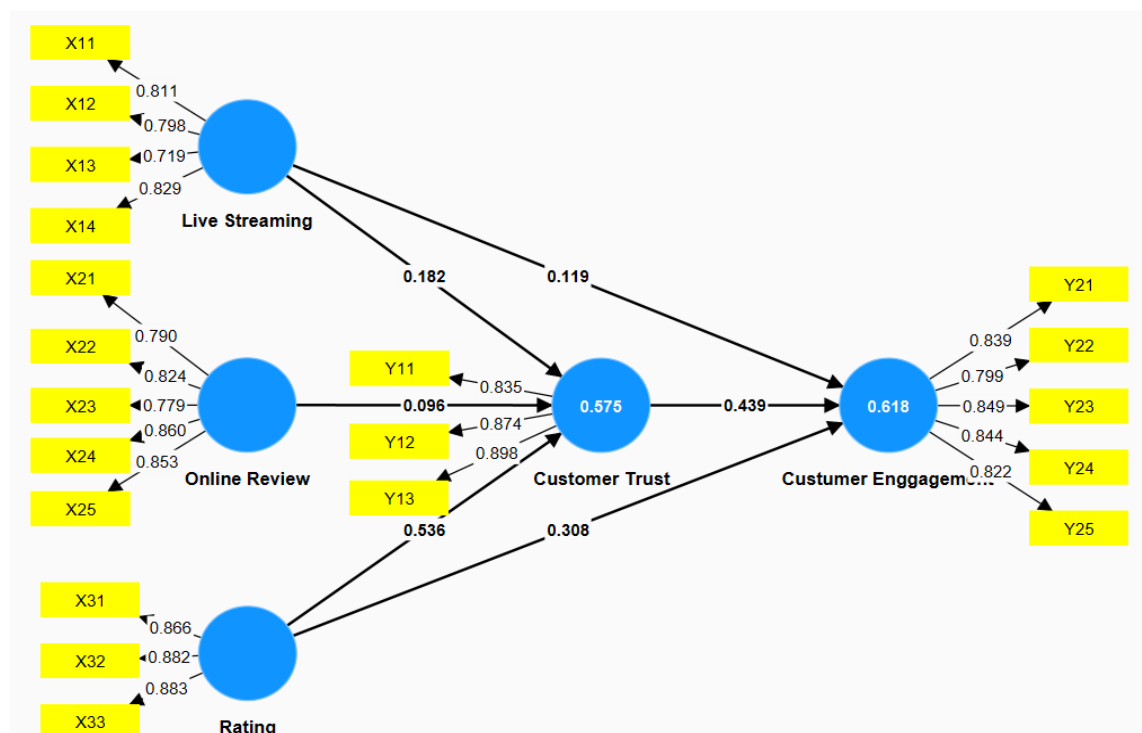


Figure 3. Outer Model
Source: SMART PLS4 Process (2025)

Table 1. Outer Loading Test

Variable	Indicator	Customer Trust	Customer Engagement	Live Streaming	Online Review	Rating
Live Streaming	X ₁₁ =Interactivity			0.811		
	X ₁₂ =Visualization			0.798		
	X ₁₃ =Entertainment			0.719		
	X ₁₄ =Profesioanlism			0.829		
Online Customer Review	X ₂₁ =Perceived Usefulness				0.790	
	X ₂₂ = Source Credibility				0.824	
	X ₂₃ = Argument Quality				0.779	
	X ₂₄ =Valence				0.860	
	X ₂₅ =Volume of Review				0.853	
Ratings	X ₃₁ = Credibility Marketplace					0.866
	X ₃₂ =Expert Marketplace					0.882
	X ₃₃ =Interest to buy					0.883
Customer Trust	Y ₁₁ =Benovalence marketing	0.835				
	Y ₁₂ =Integrity	0.874				
	Y ₁₃ =Competence	0.898				
Customer Engagement	Y ₂₁ =Enthusiasm		0.839			
	Y ₂₂ =Attention		0.799			
	Y ₂₃ =Absorption		0.849			
	Y ₂₄ = Interaction		0.844			
	Y ₂₅ =Identification		0.822			

Source: Data processing result by Author, 2025

The value of outer loading of the components of the 4 variables studied can be seen at Table 1 and the value for all variables is above 0.5 where the smallest value is 0.719 for the live streaming variable on the entertainment indicator. Because the outer loading test values of the 4 variables studied all have an outer value higher than 0.5, so that based on the comparison of these values, conclusions can be drawn that all components of the 4 variables studied are valid.

Table 2. Value of AVE

Variable	Average Variance Extracted (AVE)
Customer Trust	0.756
Custumer Enggagement	0.690
Live Streaming	0.625
Online Review	0.676
Rating	0.770

Source: Data processing result by Author, 2025

In Table 2 can be seen the value of AVE for all variables studied obtained the smallest value of 0.625 for the content marketing variable and the largest value of 0.770 for the purchase intention variable. Refer to all AVE values for all variables studied are higher than 0.5, so that based on the comparison of these values, conclusions can be drawn that the convergent validity test for all variables is valid.

Discriminant validity test used in statistical analysis, especially in the development of research instruments such as questionnaires or measurement scales, to evaluate the extent to which a construct (the theoretical concept being measured) can be clearly distinguished from other constructs. This test is used to ensure that items in an instrument measuring a construct do not overlap or correlate too highly with items measuring other constructs. The Cross-Loading value is used to test Discriminant Validity. The results of the discriminant validity test are declared to meet the requirements if the value of each variable of a construct is always greater than the correlation value of the construct with other latent variables.

Table 3. Cross Loading

Indicator	Customer Trust	Customer Engagement	Live Streaming	Online Review	Rating
X11	0.471	0.407	0.811	0.606	0.557
X12	0.422	0.443	0.798	0.622	0.528
X13	0.439	0.458	0.719	0.522	0.462
X14	0.619	0.587	0.829	0.639	0.637
X21	0.449	0.481	0.660	0.790	0.672
X22	0.541	0.606	0.598	0.824	0.621
X23	0.583	0.582	0.637	0.779	0.559
X24	0.568	0.556	0.645	0.860	0.712
X25	0.556	0.598	0.579	0.853	0.715
X31	0.574	0.570	0.617	0.742	0.866
X32	0.687	0.670	0.583	0.658	0.882
X33	0.675	0.635	0.641	0.704	0.883
Y11	0.835	0.611	0.608	0.685	0.731
Y12	0.874	0.622	0.508	0.488	0.586
Y13	0.898	0.698	0.520	0.539	0.603
Y21	0.662	0.839	0.511	0.604	0.603
Y22	0.566	0.799	0.446	0.523	0.503
Y23	0.581	0.849	0.452	0.542	0.575
Y24	0.635	0.844	0.544	0.563	0.635
Y25	0.626	0.822	0.567	0.627	0.640

Source: Data processing result by Author, 2025

On Table 3, all value of cross loading for each variable (in blue) is always greater the value of other latent variables. Refer to data processing result on the table above be concluded that the test of discriminant validity is valid.

Test of Reliability used to measure a research instrument (such as a questionnaire, measurement scale, or test) produces consistent and stable results when used to measure the same construct or variable. Reliability refers to the degree of reliability and consistency in measuring what it is supposed to measure. Reliability is an important aspect of research because unreliable instruments can produce inaccurate data, thus affecting the validity of the research results. If an instrument is reliable, the measurement results will be consistent even if they are carried out at different times or different people.

Reliability Test is used to measure the consistency and accuracy of latent variables by considering the Cronbach's alpha variability value and composite reliability. If the Cronbach's alpha value and composite reliability are greater than 0.7, it can be concluded that the reliability test is accepted or it can be interpreted that the data obtained from data collection in this study and processed with the SMART PLS p application have good consistency and accuracy.

Table 4. Realibility Test

Variable	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Customer Trust	0.838	0.839	0.903	0.756
Customer Enggagement	0.888	0.890	0.918	0.690
Live Streaming	0.801	0.818	0.869	0.625
Online Review	0.880	0.883	0.912	0.676
Rating	0.851	0.856	0.909	0.770

Source: Data processing result by Author, 2025

The smallest Cronbach's alpha value of all variables is 0.801 for the live streaming variable and the smallest composite reliability value of all variables is 0.818 for the live streaming variable. The Cronbach's alpha and composite reliability values for all variables studied, the values for all variables are greater than 0.7, so based on the explanation of the reliability test provisions, it can be concluded that the results of the reliability test in this study have strong consistency and accuracy.

This internal model is measured using the R^2 or R-Square determination coefficient test on the results of data processing. This R-square value explains the extent to which the variability of exogenous variables has a significant effect on endogenous variables. R square value is grouped into 3 parts: 1 R square value > 0.67 , its indicates strong relationship, 2 R square value between 0.33 to 0.67 show medium relationship and R square value < 0.19 indicates a weak relationship.

Table 5. R Square Value

Variable	R-square	R-square adjusted
Customer Trust	0.575	0.571
Customer Engagement	0.618	0.614

Source: Data processing result by Author, 2025

In Table 5, the R-Square value is 0.575 for the customer trust variable and 0.618 for the customer engagement variable. This value shows that the live streaming, online review and rating variables contribute 57.5% to customer trust and the remaining 42.5% is affected by other variables. Furthermore, the live streaming, online review and rating variables contributed 61.8% to the customer engagement variable and the remaining 38.2% was affected by other variables.

If all the data that has been tested meets the specified requirements, then it will be continued with the hypothesis testing process. In the data processing process, the bootstrapping algorithm will be selected in the SEM PLS version 4 application. The Bootstrapping algorithm will eliminate large sample sizes assuming the data processed uses a normal distribution, in accordance with the research results (Ghozali & Laten, 2012). By using the no sign change scheme, and the number of data processed is 322 data, the significance value is 5% and the T-statistic value is 1.96. Referring to the research (Hair, 2013), if the value meets the requirements above, it can be concluded that the hypothesis test is acceptable.

The hypothesis directly proposed in this study will be tested using the results of data processing, structural models (Inner Models), and then it will be assessed whether the hypothesis is accepted or rejected. Whether a hypothesis can be accepted or not will be seen from the results of the comparison of the T-statistic value obtained from the results of data processing using the Smart PLS 4 tool and a value of 1.96. The hypothesis being tested is accepted if the T-statistic value is greater than 1.96 and if it is less than 1.96 then the hypothesis is not accepted. Table 6 shows the results of testing each hypothesis.

Table 6. Direct Hypothesis

Direct Hypothesis	Original sample (O)	T statistics (O/STDEV)	P values	Information
Customer Trust → Customer Engagement	0.439	7.843	0.000	Accepted
Live Streaming → Customer Trust	0.182	3.066	0.002	Accepted
Live Streaming → Customer Engagement	0.119	2.087	0.037	Accepted
Online Review → Customer Trust	0.096	1.325	0.185	Not Accepted
Rating → Customer Trust	0.536	7.384	0.000	Accepted
Rating → Customer Engagement	0.308	5.098	0.000	Accepted

Source: Data processing result by Author, 2025

In Table 6, the direct hypothesis and its value of T Statistics show a hypothesis of the influence of one variable on another variable will be accepted or not accepted. It can be seen that the smallest value is 1.325 (online review → customer trust) and the largest value is 7.843 (customer trust → customer engagement). According the table above can be summarized the conclusion of direct hypothesis as follows :

H₁: direct influence of customer trust → customer engagement is accepted because T Statistic 7,843 > 1.96 .

H₂: the direct influence of live streaming → customer trust is accepted because T Statistic 3.066 > 1.96 .

H₃: the direct influence of live streaming → customer engagement is accepted because T Statistic 2.087 > 1.96 .

H₄: the direct influence of online review → customer trust is not accepted because T Statistic 1.325 < 1.96 .

H₅: the direct influence of rating → customer trust accepted because T Statistic 7.384 > 1.96 .

H₆: the direct influence of rating → customer engagement accepted because T Statistic 5.098 > 1.96 .

Inner Model is used to test the hypothesis of indirect influence. If the T-statistic value obtained from the data processing results is greater than 1.96, then it can be concluded that this indirect hypothesis is accepted, and if the value is less than 1.96 then the hypothesis is rejected. The results of data processing related to the indirect hypothesis can be seen in Table 7 which will test 3 hypotheses.

Table 7. Indirect Hypothesis

Indirect Hypothesis	Original sample (O)	T statistics (O/STDEV)	P values	Information
Live Streaming → Customer Trust → Customer Engagement	0.080	3.008	0.003	Accepted
Online Review → Customer Trust → Customer Engagement	0.042	1.235	0.217	Not Accepted
Rating → Customer Trust → Customer Engagement	0.235	5.863	0.000	Accepted

Source: Data processing result by Author, 2025

Table 7 shows the T statistic value used to conduct an indirect hypothesis test and refer to T statistic value on the table 7, it can be summarized that:

H₇: Indirect influence of Live Streaming → Customer Trust → Customer engagement, is accepted because value of T statistic is $3.008 > 1.96$.

H₈: Indirect influence of Online Review → Customer Trust → Customer engagement, is not accepted because value of T statistic is $1.235 < 1.96$.

H₉: Indirect influence of Rating → Customer Trust → Customer engagement, is accepted because value of T statistic is $5.863 > 1.96$.

DISCUSSION

The value of the output path between the customer trust and customer engagement with a coefficient parameter of 0.439 with a significance of 0.000, obtained a T statistic value of 7.843. Because the T Statistic value is greater than 1.96 or $7.843 > 1.96$ ($\alpha = 0,05$: $df=336$), it can be concluded that the first hypothesis test is accepted. This means that when consumers already have trust in the market place, these consumers will have an attachment to the market place, for example by giving good comments, giving good ratings and recommending the marketplace to other consumers.

Research explains that when a marketplace has gained the trust of consumers, consumer engagement with the marketplace will be good, where the trust factor is very important for consumers in making purchase transactions in the marketplace. If consumers already have trust in the market supported by the existence of features that provide convenience, then the reaction and perception of consumers as users of information technology will influence their attitudes in receiving information delivered through information technology. This is in accordance with the Technology Acceptance Model theory developed by (Davis, 1989), which is a theory that offers a basis for studying and understanding user behavior in receiving and using information systems, (Handayani, 2007), explaining the TAM Model developed from psychology theory, explaining computer user behavior based on beliefs, attitudes, intentions, and user behavior relationships.

Another study that supports this study, especially the relationship between customer trust and customer engagement, is the study (Agyei et al., 2020), which examines the influence of trust dimensions on customer engagement and the impact of customer engagement on customer loyalty in the context of life insurance. This study also examines the mediating role of customer engagement in the relationship between trust dimensions and customer loyalty. The findings of this study highlight the importance of building convincing customer trust to increase customer engagement and customer loyalty.

The correlation value of the output path of the relationship between the Live streaming variable and Customer Trust is 0.62 with a significance of 0.002 and the T statistic value of the results of this study is 3.066, because the T Statistic value is greater than 1.96 or $3.066 > 1.96$ ($\alpha = 0,05$: $df=336$), it can be concluded that the second hypothesis test on the Effect of Live Streaming on Customer Trust can be accepted. Live streaming variables will influence consumer trust in the market, therefore if sellers provide positive information regarding

product knowledge, prices and facilities provided through live streaming, consumer trust will increase. This is in line with research (Liang, 2022), which explains the effect of consumer behavior on live streaming, as well as research (Apasrawirote & Yawised, 2022), which explains the positive effect of live streaming on purchase intentions that can increase consumer confidence. Research by (Wang et al., 2022), explains how live streaming significantly changes purchasing decisions in the marketplace.

The test results produce a path coefficient output value that explains the relationship between the live streaming variable and the customer engagement variable, which has a coefficient parameter value of 0.119 with a significance of 0.0037, so that a statistical T value of 2.087 or $2.087 > 1.96$ ($\alpha = 0,05 : df = 336$) is obtained, so it can be concluded that the third hypothesis test can be accepted. Live streaming has a significant on Customer engagement. This means that when live broadcasts in the market go well, consumer engagement with the market will develop, for example, consumers will provide ratings, comments, share information, and even engage in transactional behavior. Previous research related to this variable, for example, (Kang et al., 2021), We argue that interactivity of live streaming commerce platforms has a considerable impact on consumer engagement. the results support that interactivity as a social stimulus reported a nonlinear effect on customer engagement behaviors in live streaming commerce platforms. More precisely, increasing the interaction between customers and broadcasters or among customers will promote customers to thumb up and send gifts actively.,Research Putri, (2024), stated that the results of this study show that there is a significant influence of content marketing (live streaming) on the customer engagment of Shopee live users on the application in Padang City. Furthermore Ma et al. (2022)which explains that the live streaming variable is able to increase purchase intention and can have a positive influence on customer engagement in the form of customer loyalty, social media platforms, as the emerging and live streaming commerce platforms,should improve their interctivity,vsualization and professionlization. Based on this explanation, it shows that previous research strengthens this research.

The value of output path coefficient shows the relationship between Online Review and Customer Trust has a parameter coefficient of 0.096 with a significance of 0.185, a statistical value of 1.325 ($1.325 < 1.96$ ($\alpha = 0,05 : df = 336$)), thus hypothesis four not accepted. This shows that existing online reviews may not be sufficient to customer trust directly, this is possible because the reviews are negative so that consumers are not trust and not interested in making purchases. This shows that Online Review is not one of the factors in making consumer trust and interested in buying a product. This shows that consumers see reviews from previous consumers in providing reviews about the quality and service that has been provided by the marketplace. When consumers have not seen a review of a product, then consumers still feel less confident to make a transaction. Therefore, in the decision-making process to buy an item, consumers will consider positive and negative reviews given by other consumers. Another reason related to the ineffectiveness of online reviews on customer trust is because online reviews on marketplace websites may be doubted by consumers because they do not match the appearance of the product or consumers do not read the reviews on the marketplace so that they do not create trust in consumers.

This contradicts research Customers often develop trust in the Shopee marketplace by observing positive feedback from other consumers who have purchased from the same online store. Reffer to previous studies (Mulyati & Gesitera, 2020) titled "The Effect of Reviews of online customer on Purchase Intention with Trust as an Intervening Variable at Bukalapak Online Stores in Padang City", The results of the study indicate that OCR has a positive and significant influence on consumer trust in the Bukalapak online store. OCR and Bukalapak consumer trust, each have a positive and significant influence on online shopping intentions, OCR has a positive and significant influence on Bukalapak consumers' online shopping intentions through consumer trust in the Bukalapak online store in Padang City.

Research (Kamisa et al., 2022), OCR has a positive and significant effect on consumer trust in the Shopee marketplace. Based on the results, it is known that the t-value is $4.147 > \text{table } 1.66071$ and the sig value is $0.000 < 0.05$. From these calculations, it shows that the emergence of consumer trust in the Shopee marketplace is by seeing positive comments from other consumers who have purchased at the online store, so that new consumers believe in the quality of the products provided by the online store at Shopee. (Lackermair et al., 2013), this study shows that product reviews are an important source of information for customers to support their purchasing decisions. Although product reviews currently still have a weak rating system,

especially in terms of comparing different product reviews with each other. illustrates, the summary of the results obtained from this study shows that online customer reviews have a significant positive influence on consumer trust and can further increase the influence of buying requests significantly on the Bukalapak online store in Padang City, Sung et al. (2023), this study analyzes the marginal willingness to pay for attributes that influence consumer trust and purchase decisions regarding products whose quality can only be determined after the product is purchased. There are six attributes that influence trust in online shopping: (1) price, (2) number of reviews, (3) "star" rating, (4) type of review (i.e., text, image, and video), (5) length of text reviews, and (6) shopping platform.

Based on the existing literature, it can be concluded that there is an influence of online reviews on customer trust influenced by various factors, such as the credibility of the source, the quality of the review content, and the perception of objectivity and honesty of the review. The existence of consumer trust in the marketplace because of positive comments from other consumers who have purchased at the online store. This shows that good online review management not only has an impact on brand perception but also contributes to the formation of sustainable trust from customers.

The value of output path coefficient shows the relationship between rating and customer trust, the parameter coefficient is 0.536, the significance is 0.000, and the statistical value is 7.384 ($7.384 > 1.96 (\alpha = 0.05; df = 336)$), so that Hypothesis 5 Accepted. This study explains that the existence of ratings in the marketplace will create trust from new customers, thus creating interest in buying products sold by the marketplace. This study can also explain that when customer ratings on the marketplace are good, the level of customer trust will also be good, and vice versa when the rating of products sold in the marketplace is not good, the trust of new customers will be low. Other research that supports this research is (Yan et al., 2016). Comparing the influence of e-commerce and social media ratings on purchasing decisions, with trust as a key factor. Mudambi & Schuff (2010), examines how ratings and review quality affect customer trust and engagement on e-commerce platforms. Based on a review of previous studies, this study supports this because the results are the same, namely that ratings affect customer trust.

The output path coefficient, which represents the relationship between rating and customer engagement, has a standardized value of 0.308. This relationship is statistically significant ($p = 0.000$), with a test statistic of 5.098 (exceeding the critical value of 1.96 ($\alpha = 0.05; df = 336$)). Therefore, Hypothesis Six is accepted. This study explains that rating in the market place by other consumers will lead to involvement from new customers by giving likes, comments, saves and shares. When the rating of the product sold in the market place is good, it will lead to interest from new consumers to buy products that have good ratings, and vice versa when the rating of the product sold in the market place is not good, then the involvement of new customers to interact by buying the products sold is also low. Based on the results of previous research, there has been no research discuss about the relationship between customer ratings and customer engagement variables, but there is research that examines the relationship between ratings and purchase interest or purchase decisions, research (Lestari & ., 2024), the results of the research show that online customer reviews and ratings have a positive and significant influence on purchasing intentions through word of mouth, ratings are made by consumers who made purchases online and publisher on the website. Usually rating is way to provide feedback by consumers to sellers. Online customer rating is one way for potential buyers to get information about sellers, so the existence of ratings in online buying and selling is a logical things if consumers consider that ratings are measure of wuality of product. Research (Faradilla Kamal & Nur Supriadi, 2023;), stated customer review, customer ratings have a positive and significant influence on purchasing decisions, if Tokopedia's customer ratings increase, purchase decisions also increase, purchase decisions is significantly influences by the customer rating it self. Refer to on previous studies, this study strengthens previous studies where no other researchers have studied positive relationship between customer ratings and customer engagement.

To test the seventh hypothesis consider the output path correlation value is 0.080 which indicates a relationship between Live Streaming and Customer engagement through Customer Trust, a significance of 0.003 and a statistical value of 3.008 ($3.008 > 1.96 (\alpha = 0.05; df = 336)$). Based on the results of the comparison value, it can be concluded that the seventh hypothesis is accepted or this study shows that Customer Trust has a significant influence on the relationship between Live Streaming and customer engagement. Good live streaming will generate trust and will have an impact on consumer engagement.

Research in line with this research is L. Luo et al. (2024), as shown in the results, we demonstrate that customer engagement behaviors can predict purchase intention under the content of live streaming. Visits to live streaming play a significant role in predicting purchase intention. Menurut Gao et al. (2021), Live streaming provides a real-time experience that allows customers to interact directly with sellers, view products in detail, and get quick responses, thereby significantly increasing customer interest and engagement. The interactions that occur in live streaming create a sense of closeness and authenticity that cannot be obtained from traditional promotional media. Chen and Lin (2018) emphasized that the elements of interactivity, live product demonstrations, and two-way communication in live streaming can build stronger emotional engagement compared to conventional marketing methods. However, the impact of live streaming on customer engagement is not always linear. Customer trust plays an important role in strengthening or weakening the influence of live streaming. Overall, the existing literature indicates that live streaming has great potential to increase customer engagement, but its effectiveness is greatly influenced by the level of customer trust which functions as a moderating variable. Therefore, companies need to build credibility and transparency to maximize the positive impact of the live streaming strategy.

The output path coefficient value that describes the relationship between online reviews and customer engagement through customer trust is 0.042 with a significance of 0.217, so the T statistic value is 1.235 ($1.235 < 1.96$ ($\alpha = 0,05 : df = 336$)). Based on the comparison of these values, it can be concluded that the eighth hypothesis is not accepted. This shows that Customer trust does not significantly affect the relationship between Online Reviews and Customer Engagement. Whatever the level of consumer trust in a marketplace, it will not have an effect on the behavior of other consumers, therefore other consumers will continue to transact on that marketplace.

Another study that examines the same variables but uses a different analytical approach is research Thakur (2018), this study aims at understanding the role of customer engagement in writing online reviews by shoppers with specific focus on mobile devices for shopping., the study explores mediating role of customer engagement in satisfaction-online review intention and trust-online review intention relationships. Further moderating role of trust and satisfaction levels in customer engagement-online review intention is explored. Son & Kim (2023), stated in e-commerce, customer feedback has become essential source of insight into a product or service's user experience (UX), As a result of analyzing 10.482 reviews on wireless earbuds on Bestbuy, an electronic product e-commerce platform, it was confirmed that it is a suitable method for categorizing user experiences between reviews and deriving important factors. In particular, the difference in core UX elements by positive/negative context of the product was verified based on the star rating. Tran & Strutton (2020) stated customer reviews play an integral role in the e-servicescape construct, that servicescape positively impacts trust and that trust positively influences E-WOM and customer loyalty. In this study, there is an additional customer engagement variable as a relationship between online customer reviews and customer trust.

The output path coefficient value that explains the relationship between the rating variable and the customer engagement variable through customer trust is 0.235 with a significance of 0.000, so that the T statistic value obtained is 5.863 ($5.863 > 1.96$ ($\alpha = 0,05 : df = 336$)). Referring to the comparison of these values, it can be concluded that the ninth hypothesis is accepted. This shows that Customer trust significantly influences the relationship between Online Reviews and Customer Engagement, This is because when consumers already have confidence in the ratings in the marketplace, it will create a good attachment in the consumer by giving like, comment or share symbols.

This research inline research Mudambi, S. M., & Schuff, D. (2010). Examining how rating and review quality influence customer trust and engagement on e-commerce platforms. (Cahaya et al., 2023). This study explains that customer interaction has no effect on consumer trust, while financial literacy has a very strong effect. Consumer trust is a mediator between financial literacy and consumer loyalty, but does not act as a mediator between customer engagement and customer loyalty. Research (Hong et al., 2017). Hong et al. (2017), Meta-analysis confirms that customer trust moderates the effect of ratings on engagement.

CONCLUSION

SmartPLS version 4 used to process and analyse data collection result and its conclusion results are: The Customer engagement variable affected significantly by customer trust variable, the Customer trust variable affected significantly by live streaming variable, customer engagement variable affected significantly by the live streaming variable, online review variable no effect on customer trust, customer trust variable affected significantly rating variable, customer engagement variable affected significantly by rating variable, the effect of Live Streaming variable to the customer engagement variable mediated by the customer trust variable meet the requirements in this study, the effect of online review to the customer engagement variable mediated by the customer trust variable does meet the requirements in this study, the effect rating variable to customer engagement variable mediated by the customer trust meet the requirements in this study. This study is expected to make significant theoretical and practical contributions to the advancement of digital marketing research. The findings will provide valuable insights for academic researchers, industry practitioners, and stakeholders in the digital marketing ecosystem, potentially informing future research directions and practical applications in the field. A limitation of this study is that it is general and applies to all marketplaces and across generations. It would be better to focus the research on a marketplace targeting Gen Z, who are more adaptable to technological changes, for more in-depth and relevant results.

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