Review Article

How Do Online Reviews, Chatbots and Social Media Interactions Shape Purchase Decisions in E-Commerce?

Erwin Permana[1]*, Harnovinsah[1], Irma Sari Permana[1], Dewi Tri Rahayu[1], Agustinus Miranda Wijaya[1], Sutan Iyad Permana[1]
[1]Universitas Pancasila

*Corresponding author: Erwin Permana
Universitas Pancasila

Abstract

The development of digital technology has changed the way consumers make purchasing decisions, especially on e-commerce platforms. This study aims to analyze the influence of online reviews, the use of chatbots, and social media interactions on consumer purchasing behavior in the digital realm. The research was conducted using a quantitative approach. The research respondents totaled 100 people. Data analysis was carried out using SmartPLS. The results showed that the three variables had a significant influence on purchasing decisions. Online reviews provide additional trust and become the main reference before the transaction. Chatbots make communication easier and provide quick responses that improve user experience. Meanwhile, active interaction on social media is able to build emotional closeness and increase consumer engagement with brands. These findings confirm the importance of an integrated digital strategy in shaping consumer behavior in the e-commerce era.
Keywords: E-commerce, online review, chatbot, social media interaction, consumer behavior.

1. INTRODUCTION

The rapid development of digital technology has changed the traditional marketing paradigm to internet-based marketing, known as *e-commerce*. E-commerce has now become an integral part of people's lives around the world, including Indonesia. According to a report from Statista (2023), the global e-commerce market is expected to continue to experience significant growth, with consumers increasingly shopping online.

This phenomenon is not only limited to physical products, but also digital services and technology-based experiences offered by e-commerce companies. eCBD through the Global eCommerce Market 2024 report states that global *e-commerce* growth in 2024 is predicted to reach 10.4%. Indonesia is predicted to be the country with the highest *e-commerce* growth in the world, at 30.5%, almost 3 times the average global growth in 2024.

Mexico is in second place with a projected growth of 26.8%. In third place is Thailand with *e-commerce* growth of 22.9%. Iran is ranked fourth with a projected growth of 22.1%, and in fifth place is Malaysia with a growth of 21.4%.

E-commerce has grown rapidly in recent years, changing the way consumers shop and interact with products and services. This major change is fueled by the development of information technology that allows for easier, faster and more efficient digital transactions. Based on available data, the e-commerce market in Indonesia is growing rapidly, along with higher internet penetration and increased consumer confidence in online transactions.

According to the latest e-Conomy SEA 2024 report compiled by Google, Temasek, and Bain & Company, Indonesia's digital economy will reach a Gross Merchandise Value (GMV) of $90 billion by 2024, up 13% from 2023, making it the largest GMV in Southeast Asia.

E-commerce has provided many advantages for companies in terms of wider market access, lower marketing costs, and operational efficiency. According

to *Statista* data, the value of the global e-commerce market is expected to reach USD 6.3 trillion by 2024, which shows the huge market potential.

However, with the increasing number of companies operating on the e- commerce platform, competition has intensified. The biggest challenge faced by e- commerce players today is to influence consumer purchasing decisions in such a highly competitive environment.

Therefore, it is important for companies to understand the factors that influence consumer purchasing decisions in the digital world. Based on a review of previous research, it is found that several factors determine purchasing decisions, namely interaction through online reviews, chatbots, and social media (Famularo *et al.,* 2010; Gurav *et al.,* 2023; Hanifah & Wulandari, 2021; Hung *et al.,* 2022; Kristina & Aminah, 2023; Radwan *et al.,* 2021; Ullal *et al.,* 2021). These three elements have been shown to have a significant impact on consumer behavior in online shopping (Jehangir *et al.,* 2011; Ngadimen & Widyastuti, 2021; Nguyen, Gizaw, 2014; Tanuwijaya *et al.,* 2023; Wang & Yu, 2017).

In the context of e-commerce, consumer purchasing decisions are often influenced by various factors derived from digital interactions that occur between consumers and producers. One aspect that is quite significant is *online* customer reviews. Online customer reviews allow potential buyers to obtain information from other people's experiences, which are considered more objective and unbiased than the information provided by manufacturers. Positive reviews can increase consumer confidence in the product, while negative reviews can reduce purchase interest (Istiqomah & Usman, 2021; Pratama *et al.,* 2019; Ullal *et al.,* 2021).

In addition, with the development of technology, many companies are now using chatbots to provide customer service automatically and more efficiently. Chatbots, as a form of artificial intelligence, provide solutions for faster and responsive interactions with consumers. The use of a responsive chatbot can improve user experience, which in turn can influence consumer purchasing decisions on e-commerce platforms (Tyagi & Jain, 2023).

Thus, the combination of customer reviews, chatbot usage, and social media interaction can significantly influence purchase decisions. This research aims to further analyze how these three elements interact and contribute to consumer purchasing decisions in e-commerce.

Although many previous studies have discussed the influence of individual factors such as online reviews, chatbots, and social media interactions, few studies have simultaneously analyzed the influence of all

three on consumer purchasing decisions in e-commerce. Therefore, this study aims to fill the gap by analyzing the influence of online customer reviews, chatbot usage, and social media interaction on consumer purchasing decisions on e-commerce platforms.

2. LITERATURE REVIEW
2.1. Online Customer Review
Online customer reviews (OCR) have become an integral part of digital marketing strategies and consumer behavior in the modern era. In the past five years, many studies have addressed the dimensions and variables that influence the effectiveness of OCR.

The main dimensions addressed in OCR include the credibility, valence, quantity and relevance of reviews (Lucini *et al.,* 2020). Review credibility is a major factor that influences consumer trust. Credibility is determined by the customer's perception of the authenticity, expertise of the review author, and reputation of the platform where the review is published. Review valence, or whether the review is positive or negative, also plays a key role.

Review quantity, referring to the number of reviews a product or service receives, also greatly influences customer perception. Review relevance refers to the extent to which the review is relevant to the customer's information needs (Lucini *et al.,* 2020).

2.2. Chatbot
A chatbot is a computer program that uses natural language processing to communicate with users (Park *et al.,* 2023). Chatbots are developed to serve the public in various ways such as answering questions, filling out forms, searching for documents, guiding citizens to complete transactions, issuing government documents, and completing government transactions (Deng & Yu, 2023).

There are three dimensions of AI chatbot namely empathy response, customization, and anonymity (Park *et al.,* 2023). Empathy can be broadly defined as the ability to understand and react to the thoughts and feelings of others. AI empathy capability is the ability to perceive, understand, and respond to human feelings, thoughts, behaviors, and experiences, which is a manifestation of the social nature of AI (Nguyen *et al.,* 2021).

Anonymity is a condition that makes something unidentifiable. This condition is not only related to not being identified by name, but also means the lack of contextual information that can cause someone to guess or know someone's name (Shin *et al.,* 2023).

2.3 Social Media Interaction
Social media is a form of promotion through digital media. Social media is used to build *engagement* with consumers. Dimensions of Social Media interaction

according to Thoo *et al.,* (2023) namely *context, communication, collaboration,* and *Connection. Context* is a way of forming messages or information such as the form of the message itself, the use of language, and the content of messages with a certain format. According to the journal Hariguna & Ruangkanjanases (2024) *context* indicators consist of the way of presentation, message design, content delivery time, and content presented. *Communication* is a way of delivering or sharing messages and also listening, responding and developing these messages so that they are received or conveyed properly (Budiyanto *et al.,* 2022).

Collaboration is a way of working together between companies or messengers and social media users so that the messages conveyed are effective and efficient. Collaboration indicators consist of interaction, involvement, message suitability and benefits. *Connection* is a way of maintaining the relationship that has been established between the company or messenger and the recipient of the message so that it is sustainable. Connection indicators consist of sustainable and reciprocal relationships.

2.4. Purchase Decision
Purchasing decision is one of the stages in the purchasing decision process before post-purchase behavior (Ullal *et al.,* 2021). Consumer behavior will determine the decision-making process in making purchases (Rachbini *et al.,* 2023). The dimensions and indicators of a product purchase decision include five sub-decisions as follows: 1) Product choice; 2) Brand choice; 3) Choice of dealer; 4) Purchase time; 5) Purchase amount (Wahyudi & Mulyati, 2023; Amin & Fikriyah, 2023; Kristina & Aminah, 2023).

2.5. The Effect of Online Customer Reviews on Purchasing Decisions
In today's digital era, online customer reviews have become one of the main factors that influence consumer purchasing decisions. Modern consumers tend to look for product or service information online before deciding to buy (Indriyani & Permana, 2022; Magelo *et al.,* 2023; Najla *et al.,* 2023). According to research

Maharani *et al.,* (2022) customer reviews on e-commerce sites have a significant influence in increasing product sales. Higher star ratings significantly influence purchase decisions (Maharani *et al.,* 2022). Negative reviews tend to have a greater impact than positive reviews, because consumers pay more attention to negative reviews as a form of risk anticipation.

H1: Online Customer Reviews Affect Purchasing Decisions

2.6. The Effect of *Chatbot* on Purchasing Decisions
Chatbots have become an increasingly popular tool in digital marketing. With the ability to provide automated and real-time responses, chatbots allow manufacturers or e-commerce owners to provide fast and efficient customer service. *A chatbot* can be used to answer consumer questions, provide product recommendations, or even process transactions. Previous research proves that *Chatbot* has an effect on purchasing decisions (Chang, 2020; Eyada & Ahmed, 2022). *AI chatbots* that are considered by consumers to have credibility and competence can increase consumers' purchase intentions (Tyagi & Jain, 2023).

H2: There is a positive influence of Chatbot on Purchasing Decisions

2.7. The Effect of Social Media Interaction on Purchasing Decisions
Social media interactions can influence a person's thinking which will have an impact on the thinking of others more broadly before making a purchase decision (Budiyanto *et al.,* 2022). Social media is able to increase the occurrence of purchasing decisions by consumers. This is based on research that has been conducted by previous research which states that social media marketing has the highest positive and significant influence on purchasing decisions (Azevedo & Azevedo, 2023; Basit *et al.,* 2021; Radwan *et al.,* 2021; Wang & Yu, 2017).

H3: Social Media Interaction has a positive effect on Purchasing Decisions

Based on the results of the review of previous research, this study proposes the following hypothesis framework:
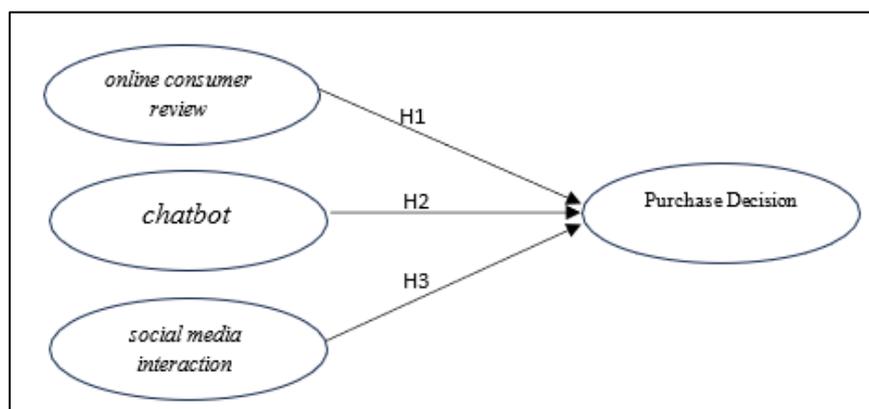

Figure 2.1: Research Hypothesis Framework

Research Hypothesis:

H1: *Online consumer reviews* affect purchasing decisions

H2: *Chatbot* has an effect on Purchasing Decisions

H3: *Social media interaction* affects purchasing decisions

3. RESEARCH METHODS

This study measures variables by referring to the dimensions proposed by previous researchers; *online consumer reviews,* including credibility, valence, quantity, and relevance of reviews (Lucini *et al.,* 2020). Researchers reduced it to 8 statement items. The *chatbot* is reduced to three dimensions, namely *empathy response, customization, and anonymity* (Park *et al.,* 2023). This study reduces it to 9 statement items. The Social Media *interaction* dimension refers to Thoo *et al.,* (2023) consists of *context, communication, collaboration,* and *connection.* This study reduces it to 8 statement items.

The purchase decision dimension includes five sub-decisions as follows: 1) Product choice; 2) Brand choice; 3) Choice of dealer; 4) Purchase time; 5) Purchase amount (Agung Tri Wahyudi & Awin Mulyati, 2023; Amin & Fikriyah, 2023; Kristina & Aminah, 2023). This study reduces these five dimensions to 10 question items. So that the total questions in this study were 35 items. All questionnaires written in Indonesian were distributed using digital applications. The measurement scale uses a Likert scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Undecided; 4 = Agree and 5 = Strongly Agree (Joshi, *et al.,* 2015; Malhotra, 2006).

The analysis technique in this study uses a Structural Equation Model (SEM) with Partial Least Square (PLS). Research respondents are marketplace consumers. The total number of real respondents was 100 people. Referring to the opinion of experts, the number of 100 respondents is suitable for quantitative research samples Augusty, (2006); Sekaran & Bougie, (2016) proposed a rule of thumb that for most studies, the sample size ranges from 30 respondents to 500 respondents.

The consideration of using SmartPLS is because SmartPLS was developed based on path modeling and bootstrapping, and recommended by Tenenhaus & Esposito, (2005). The research model developed is a reflective model. The purpose of the reflective model is data analysis, where further researchers can confirm the results of the analysis based on the theory that has been built.

Data collection techniques are carried out using google forms to various social media networks, social media groups and personal networks. The distribution will be stopped when it reaches the target respondent, namely 100 people. To support the results of quantitative analysis, qualitative analysis is carried out by means of direct interviews, interviews (*interviews*), questions are asked verbally, face to face with subjects or informants in depth (*in-depth interviews*).

4. RESULTS AND DISCUSSION RESPONDENT PROFILE

Table 4.1: Research respondents

	Item	Quantity	Percentage
Gender	Men	38	38
	Women	62	62
	Total	**100**	**100**
Age	< 20 years	11	11
	21-30 years	19	19
	31-40 years old	28	28
	41-50 years old	33	33
	> 51 years	9	9
	Total	**100**	**100**
Jobs	Student	23	23
	Lecturer	51	51
	Professional	14	14
	Industrialist	12	12
	Total	**100**	**100**
Digital media used	Whatsapp	100	100%
	Facebook	47	47%
	Instagram	63	63%
	Twitter	33	33%
	TikTok	78	78%
	Youtube	11	11%
	LinkedIn	38	38%
	Pinterest	0	0%
	Wechat	0	0%

Source: Research data (2025)

The majority of respondents are women (62%), who tend to be more cautious and consider reviews before making a purchase. The 31-50 age group (61%) showed a tendency to seek in-depth information before purchasing, including reading reviews from other users. A total of 51% of respondents are lecturers, who value efficiency and speed in getting information. Chatbots can fulfill this need by providing quick and accurate responses. The use of social media such as TikTok (78%) and Instagram (63%) shows that consumers are highly influenced by visual and interactive content. Interactions on social media can build trust and influence purchasing decisions.

Test the suitability of the research model

Analysis of the suitability of the SEM with PLS research model is carried out in three stages, namely outer model analysis, inner model analysis, and hypothesis testing (Chin, 1998).

***Outer* model analysis**

The reflective model is measured by indicator loading (> 0.5); Cronbach's alpha (> 0.6); composite reliability with a value of (> 0.7); Average Variance Extracted (AVE) (> 0.5) and Fornell-Larcker Criteria (AVE > $R^{2)}$) (Tenenhaus, 2008). The following is presented the loading value of all indicators.

Table 4.2: Loading of research indicators

	Item	Sample Origin	Sample Mean	Standard Deviation	T Statistic	P Value
Anonym⇓ Chatbot	3	0.959	0.959	0.008	114.117	0.000
Buy_Quant⇓ Purchase Decision	2	0.969	0.969	0.007	140.874	0.000
Buy_time⇓ Purchase Decision	2	0.959	0.958	0.010	92.761	0.000
C_Prod⇓ Purchase Decision	2	0.922	0.921	0.019	49.276	0.000
C_brand⇓ Purchase Decision	2	0.954	0.953	0.011	84.044	0.000
Collaboration⇓ Social Media Interaction	2	0.975	0.975	0.005	191.598	0.000
Communication⇓Social Media Interaction	2	0.911	0.910	0.020	45.536	0.000
Customiz⇓ Chatbot	3	0.984	0.984	0.004	279.220	0.000
Kred⇓ Online Customer Review	2	0.961	0.960	0.009	111.006	0.000
Kuant⇓ Online Customer Review	2	0.961	0.960	0.011	90.298	0.000
Rel⇓ Online Customer Review	2	0.962	0.982	0.009	112.752	0.000
Val⇓ Online Customer Review	2	0.971	0.971	0.007	130.143	0.000
C_Dist⇓ Purchase Decision	2	0.965	0.964	0.009	113.377	0.000
Connection⇓ Social Media Interaction	2	0.982	0.982	0.005	198.474	0.000
Context⇓ Social Media Interaction	2	0.974	0.974	0.007	140.400	0.000
Empht⇓ Chatbot	3	0.976	0.976	0.006	158.712	0.000

Table 4.2. shows that all research indicators have factor loading values above the cut off value (>0.5), so that no research dimensions are discarded. To support these results, the following is presented the value of Cronbach's alpha, composite reliability and AVE with the respective criteria (> 0.6); (>0.7); (>0.5).

Table 4.3: Cronbach's alpha, composite reliability and AVE

	Cut off value	Chatbot	Online Cust Review	Purch Decision	Socmed Interaction	Decision
Cronbach's Alpha	0.6	0.972	0.974	0.975	0.972	All criteria meet the standard
Composite Reliability	0.7	0.982	0.982	0.981	0.980	
AVE	0.5	0.947	0.929	0.911	0.924	

Based on the results of running data using *smarPLS software,* the suitability of the research model is obtained, which meets the criteria required by the outer model of smart PLS, namely Cronbach's alpha; composite reliability; and AVE produce each has a value> 0.60 (Cheung & Rensvold, 2002). To complement these results, the following Fornell-Larcker Criteria (AVE > R^2) are presented.

Table 4.4: Fornell-Larcker criteria (AVE > R^2)

	Chatbot	Online Cust Review	Purch Decision	Socmed Interaction
Chatbot	0.973			
Online Cust Review	0.946	0.964		
Purch Decision	0.949	0.931	0.954	
Socmed Interaction	0.965	0.937	0.958	0.961

Table 4.4. shows that the AVE value of digital capability and performance is higher than the R Square value, therefore the Fornell-Larcker criteria are met. Thus, the outer model test shows that all criteria are met and feasible.

Inner Model Analysis

Inner model analysis can be seen from several indicators which include; coefficient of determination (R2); *Predictive Relevance* (Q2); *Goodness of Fit Index* (GoF) (Chin, 1998). The following is presented the calculation for each indicator.

1. Coefficient of Determination (R^2)

The following is presented the value of R^2 smartPLS software output.

Table 4.5: R^2 Value

	R Square	Adjusted R Square
Purchase Decision	0.930	0.928

According to Chin, (1998), the R square value is 0.67 strong, 0.67 substantial, and 0.19 weak, Sarwono, (2010) adds the value of R 2> 0.7 strong. So all the variables involved in this study are categorized as having a strong relationship.

2. Predictive Relevance (Q^2)

To calculate Q2, the formula can be used

$Q^2 = 1-(1-R1^{(2)}) (1-R2^{2)})\ldots\ldots(1-Rn^{(2)})$

$Q^2 = 1-((1-0,930))$

$Q^2 = 0.93$

This test is conducted to determine the prediction capability with the *blinfolding* procedure. According to Chin, (1998), if the value obtained is between 0.02 and 0.15, the model has a small prediction capability. If the value obtained is between

0.15 and 0.35, the model has moderate predictive ability. Finally, if the value obtained is above 0.35, the model has a high predictive ability. The calculation of the Q^2 value yields a result of 0.93. Thus, the model has a great predictive relevance to the observations.

3. Goodness of Fit Index (GoF)

The GoF value in SEM with PLS is calculated manually (Tenenhaus (2004) with the formula

$$\text{GoF x} = \sqrt{\text{AVE}^2 \ \text{R}^2}$$

GoF= 0.80

Tenenhaus & Esposito, (2005) formulated that the GoF value is small 0.1, medium 0.25, and large when it is 0.38. This study proves that the calculation of the GoF value is 0.80. Therefore, it is concluded that the research model can capture the real phenomenon of the influence of transformational leadership on culinary business performance through digital capabilities. Thus, the inner model test proves that all research result criteria meet the relevant criteria.

Research Hypothesis Test

The structural model in SEM with PLS is carried out by a *bootstraping* process which produces a t-statistic value. Meanwhile, to find out how much influence between variables, then using the *loading factor* value of the original sample (O) output. In this research, hypothesis testing was carried out on the three scenarios of the research model:
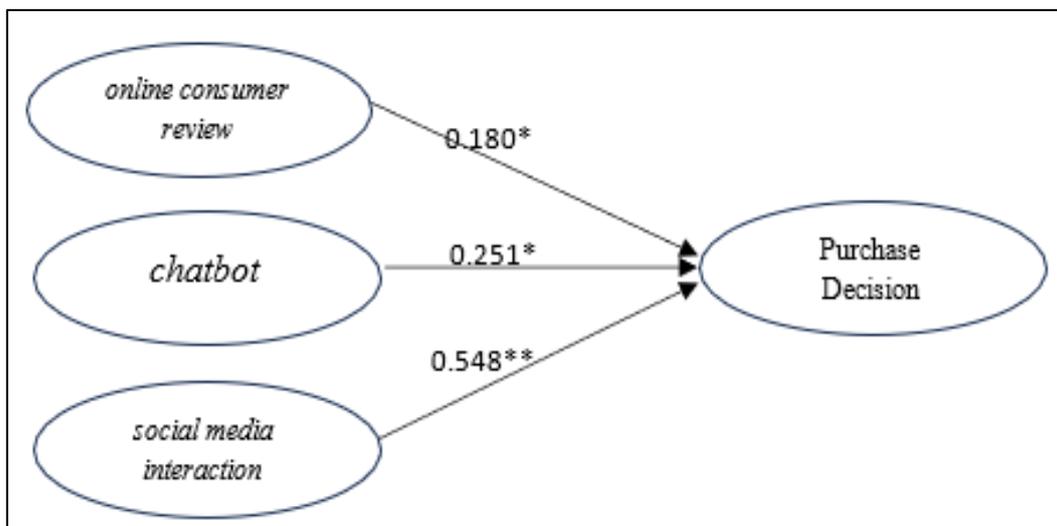

Figure 4.1: Hypothesis Test Results
*Significant 5%, **significant 1%

Figure 4.1. shows that all research hypotheses are proven. *Online consumer review* and *chatbot* variables affect purchasing decisions at the 95% confidence level, while *social media interaction* affects purchasing decisions at the 99% confidence level.

DISCUSSION

This study seeks to analyze consumer purchasing decisions in e-commerce by involving online consumer reviews, chatbots and social media interaction as determinant variables. The results showed that all variables had an effect on purchasing decisions at 95% and 99% confidence levels. Based on the results of this study, the following points can be summarized.

First, the Effect of Online Consumer Reviews on Purchasing Decisions

In this study, respondents who received positive reviews from other consumers showed a higher propensity to make a purchase. This suggests that consumer reviews act as a factor that increases consumer confidence in the quality and benefits of a product. Positive reviews provide a psychological boost and strengthen the perception that the purchase decision to be made is the right one.

One of the key roles of online consumer reviews is to reduce uncertainty, especially in the context of online purchases where consumers cannot touch, try, or evaluate products in person. Through the experiences of other consumers, potential buyers gain additional information that they can use to validate their initial considerations. As such, reviews serve as an informal verification tool that helps consumers make more confident decisions. Consumer reviews often provide details not found in official promotional materials, such as product flaws or usage tips.

Furthermore, communication between consumers is seen as more authentic and freer from commercial bias than advertisements or promotions made by manufacturers. This social influence between consumers creates a "social proof" effect, where individuals tend to judge a product based on majority opinion. When the majority of reviews indicate satisfaction, then a positive perception of the product will collectively form, encouraging more consumers to make a purchase.

A survey by Reputation (2024) shows that 54% of consumers trust online reviews more than recommendations from friends, family or company advertisements. Data from TrustPulse (2023) shows that 97% of consumers read reviews before buying, and the presence of five or more reviews can increase the likelihood of purchase by almost four times. Consumer reviews thus not only build trust but also directly affect conversion rates.

Second, the Effect of Chatbot on Purchasing Decisions

The use of chatbots in customer service has been shown to improve user experience through quick responses and real-time provision of needed information. This has a direct impact on increasing consumer satisfaction and trust, which in turn positively influences purchasing decisions. A Salesforce report (2024) noted that during the 2024 holiday season, the use of AI-based chatbots increased by 42% compared to the previous year. This increase helped drive online sales growth in the United States by nearly 4% year-over-year, reaching $282 billion, while globally, AI contributed to $229 billion in online sales.

Levantino's (2023) study notes that 80% of businesses have adopted chatbots to improve customer service and accelerate the buying process, especially in the evaluation and conversion stages of the customer journey. Chatbots powered by artificial intelligence (AI) are able to provide recommendations, answer questions, and offer assistance instantly. Research by Jain & Khurana (2022) shows that AI chatbots can speed up decision making by 30% by providing relevant and personalized information.

Thanks to *natural language processing* (NLP) technology, chatbots are able to exhibit an empathic language style. A study by Khatri *et al.,* (2021) found that users who experienced the natural communication style of a chatbot were 2.4 times more likely to make a transaction.

Psychologically, interaction with a chatbot gives consumers a sense of control, comfort, and minimal pressure. They can ask questions without feeling judged, at any time, without the need for direct interaction. Willcocks *et al.,* (2024) noted that consumers feel more comfortable exploring products through chatbots due to their anonymous and responsive nature.

Modern chatbots also enable large-scale personalization. By analyzing search history data, preferences, and consumer behavior, chatbots can provide relevant and targeted product suggestions. Davenport & Mittal (2023) mentioned that 69% of consumers are more likely to buy from companies that offer a personalized experience and chatbots are becoming the main channel to make this happen.

The significant influence of chatbots on purchase decisions underscores the important role this interactive technology plays in the modern marketing landscape. With proper development, chatbots are capable of bridging communication, accelerating transactions, and significantly increasing customer conversion rates.

Third, the Effect of Social Media Interaction on Purchasing Decisions

The results of hypothesis testing which show a positive significant effect between *Social Media Interaction* on *Purchasing Decisions* indicate that the higher the level of consumer interaction with a brand's social media, the greater their tendency to purchase the product or service offered. This finding has a strong theoretical basis in the context of modern consumer behavior, where social media is not only a communication channel, but also an interaction space that shapes perceptions and preferences for a brand.

The social media interactions referred to in this context include various forms of activities, such as giving *likes*, commenting, *sharing* content, participating in discussions, and responding to content published by brands. These activities create a form of emotional engagement between consumers and brands, which then contributes to the formation of positive attitudes and higher purchase intentions. Within the framework of *brand engagement theory*, interactions that occur actively on social media strengthen consumers' emotional closeness and trust in the brand. With increased trust and positive perceptions, the decision to purchase becomes more likely.

Previous research supports these findings. A study conducted by Hudson *et al.,* (2016) shows that interactions that occur on social media platforms encourage the formation of social connections between consumers and brands, which directly impact purchasing behavior. Similarly, Bilgin (2018) revealed that social media interaction dimensions, especially those that are two-way and responsive, have a close relationship with brand loyalty and purchasing decisions. Similar results were also found by Bashir *et al.,* (2022) which through a quantitative approach found that interaction-based social media marketing can significantly increase purchase intentions.

Thus, overall, the positive significant effect of social media interaction on purchasing decisions can be understood as a form of transformation of consumer behavior in the digital era. Interactions on social media are no longer passive, but actively shape economic decisions through engagement, trust and digital experiences built with brands. This finding confirms the importance of digital communication strategies that not only focus on information dissemination, but also on creating a deep and continuous interactive space between brands and consumers.

A report from Hootsuite & Social (2022) reveals that more than 76% of internet users in productive age use social media to find information about products before making a purchase. In fact, around 55% of users stated that they discovered a new brand for the first time through social media. In this context, social interactions such as listening to other users' reviews, watching review videos on TikTok or Instagram, and following comments and responses from brands' official accounts are proven to influence the final purchase decision. In addition, data from Coppola (2022) shows that the sales value of e-commerce transactions influenced by social media known as *social commerce* continues to increase. In Southeast Asia, for example, the value of *social commerce* transactions reached USD 13 billion in 2022, and is projected to grow by more than 30% per year. Indonesia as one of the largest markets recorded significant contributions through platforms such as TikTok Shop, Shopee Live, and Instagram Shopping, where interactive features such as live chat, live selling, and live comments during product streaming increase the likelihood of real-time purchases.

A report by McKinsey &Company (2022) also shows that consumer interaction in *live commerce* features (a combination of social media and e-commerce) results in purchase conversions 10-20 times higher than conventional e-commerce channels. Users who actively interact in *live* sessions have conversion rates above 30%, while passive users are only around 3-5%. This fact shows quantitatively that the level of digital interaction determines the purchase decision.

By looking at this data, social media interactions not only shape perceptions and trust in brands, but also drive real action in the form of purchases on e-commerce platforms. The convergence between social interaction and digital transactions shows that social media is not only a promotional tool, but also a strategic instrument in shaping and accelerating the consumer decision-making process. This finding supports previous interpretations that social media interactions have a strong and significant influence on purchasing decisions.

5. CONCLUSIONS, SUGGESTIONS AND RECOMMENDATIONS

Based on the results of the study, which show that online consumer review and chatbot variables affect purchasing decisions at the 95% confidence level, and social media interaction affects at a higher confidence level of 99%, it can be concluded that these three variables have a significant role in influencing consumer purchasing behavior in the digital realm. However, these findings are inseparable from a number of limitations that need to be recognized, as well as opening up space for future research to expand understanding of this phenomenon.

One of the main limitations of this study is the generalization aspect. If the sample used only includes certain consumer groups, such as active e-commerce users in urban areas or in certain age ranges (such as Gen Z or millennials), then the results of this study may not be widely applicable to other consumer segments, such as rural communities or older age groups. Differences in demographic characteristics and digital literacy can

affect the intensity of chatbot use, how online reviews are understood, and interaction patterns on social media.

In addition, although social media interaction showed the strongest influence (at the 99% confidence level), this study did not differentiate between forms of social media interaction in detail. Passive interaction (viewing content) and active interaction (commenting, discussing, participating in live shopping) have different levels of influence on purchase decisions. The absence of this classification of interaction types may limit the depth of interpretation of the results.

Based on these limitations, future research needs to expand the scope of the population and a more heterogeneous sample, covering various geographic areas, socio-economic backgrounds, and different levels of digital experience. This is important to obtain a more representative picture of digital purchasing behavior in various contexts.

Furthermore, further research is recommended to explore mediation and moderation mechanisms that may bridge the relationship between these variables and purchase decisions. For example, *brand trust* can be a mediator between online reviews and purchase decisions, while *digital literacy* or *customer involvement* can be moderator variables that strengthen or weaken the influence of chatbots on purchase decisions.

Future research can also deepen the dimensions of each variable. For chatbots, future research could compare the effectiveness of AI-based chatbots with template-based chatbots in shaping purchase decisions. For social media interaction, future studies can differentiate the effect between interactions on different platforms (Instagram vs. TikTok vs. Facebook) or even analyze the difference between organic and paid interactions.

REFERENCES

- Agung Tri Wahyudi, & Awin Mulyati. (2023). Pengaruh Influencer Marketing dan Online Customer Review terhadap Keputusan Pembelian produk Fashion melalui Marketplace Shopee. *Jurnal Articel*, *2*(2).
- Ahmed, A. Z., & Rodríguez-Díaz, M. (2020). Significant labels in sentiment analysis of online customer reviews of airlines. *Sustainability (Switzerland)*, *12*(20). https://doi.org/10.3390/su12208683
- Amin, D. E. R., & Fikriyah, K. (2023). Pengaruh Live Streaming dan Online Customer Review Terhadap Keputusan Pembelian Produk Fashion Muslim (Studi Kasus Pelanggan TikTok Shop di Surabaya). *Edunomika*.
- Augusty, F. (2006). *Structural Equation Model Dalam Penelitian Manajemen*. Badan Penerbit UNDIP.
- Azevedo, A., & Azevedo, Â. S. (2023). Implications of Socio-Cultural Pressure for a Thin Body Image on Avoidance of Social Interaction and on Corrective, Compensatory or Compulsive Shopping Behaviour. *International Journal of Environmental Research and Public Health*, *20*(4). https://doi.org/10.3390/ijerph20043567
- Bashir, T., Zhongfu, T., Sadiq, B., Niaz, U., Anjum, F., & Mahmood, H. (2022). An assessment of influential factors developing the intention to use social media sites: A technology acceptance model based approach. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.983930
- Basit, A., Lum, A., Sethu, S., Yee, W., Sethumadhavan, S., & Rajamanoharan, I. D. (2021). The Influence of Social Media Marketing on Consumer Buying Decision Through Brand Image in The Fashion Apparel Brands. *International Journal of Contemporary Architecture*, *8*(2).
- BİLGİN, Y. (2018). THE EFFECT OF SOCIAL MEDIA MARKETING ACTIVITIES ON BRAND AWARENESS, BRAND IMAGE AND BRAND LOYALTY. *Business & Management Studies: An International Journal*, *6*(1). https://doi.org/10.15295/v6i1.229
- Budiyanto, A., Pamungkas, I. B., & Praditya, A. (2022). EFFECT OF SOCIAL MEDIA ON BUYING INTEREST AND CONSUMER BUYING DECISIONS: A Systematic Literature Review. *Inovasi*, *9*(2). https://doi.org/10.32493/inovasi.v9i2.p119-129.27539
- Chang, D.-Y. (2020). The moderating role of interaction in the planned behavioral process of chatbot use in searching for travel product. *Korean Journal of Hospitality & Tourism*, *29*(1). https://doi.org/10.24992/kjht.2020.01.29.01.67.
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*. https://doi.org/10.1207/S15328007SEM0902_5
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In *Modern methods for business research*. https://doi.org/10.1016/j.aap.2008.12.010
- Chin, W. W., Mills, A. M., Steel, D. J., & Schwarz, A. (2016). Multi-group invariance testing: An illustrative comparison of PLS permutation and covariance-based SEM invariance analysis. In *Springer Proceedings in Mathematics and Statistics*. https://doi.org/10.1007/978-3-319-40643-5_20
- Coppola, D. (2022). E-commerce share of total global retail sales from 2015 to 2025. *Statista*.
- Davenport, T. H., & Mittal, N. (2023). Stop tinkering with AI: It's time to go all in. *Harvard Business Review*, *January-February*.
- De La, M., Toldos-Romero, P., & Orozco-Gómez, M. M. (2015). European Business Review Brand personality and purchase intention. *European Business Review Internet Research Internet*

Research Iss Journal of Product &amp Brand Management Universiti Teknikal Malaysia Melaka At, *27*(19).

- Deng, X., & Yu, Z. (2023). A Meta-Analysis and Systematic Review of the Effect of Chatbot Technology Use in Sustainable Education. In *Sustainability (Switzerland)* (Vol. 15, Issue 4). https://doi.org/10.3390/su15042940

- Eyada, B., & Ahmed, N. (2022). EFFECTIVENESS OF CHATBOT ADVERTISING ON CONSUMER BUYING DECISION: AN ANALATYCAL STUDY. *Journal of Design Sciences and Applied Arts*, *3*(2). https://doi.org/10.21608/jdsaa.2022.121166.1158

- Famularo, B., Bruwer, J., & Li, E. (2010). Region of origin as choice factor: wine knowledge and wine tourism involvement influence. *International Journal of Wine Business Research*, *22*(4), 362–385. https://doi.org/10.1108/17511061011092410

- Ghozali, I. (2014). *SEM Metode Alternatif dengan menggunakan Partial Least Squares (PLS)*. Badan Penerbit Universitas Diponegoro.

- Google, Temasek, & Bain & Company. (2021). e-Conomy SEA 2021 Roaring 20s: The SEA Digital Decade. In *Google Temasek Bain & Company*.

- Gurav, Y., Ingawale, V., & Yadav, A. (2023). A STUDY ON THE IMPACT OF ONLINE PRODUCT REVIEWS ON CONSUMERS' BUYING INTENTIONS. *The Online Journal of Distance Education and E-Learning*, *11*(2).

- Hanifah, N., & Wulandari, R. (2021). The influence of online customer reviews, ratings, and brand image of millennial e-commerce consumers in Indonesia on purchase decisions with trust as a mediator. *The International Journal of Business and Management Research*, *5*(07).

- Hariguna, T., & Ruangkanjanases, A. (2024). Assessing the impact of social media interaction in s-commerce strategies mediated by relationship quality. *Journal of Infrastructure, Policy and Development*, *8*(2). https://doi.org/10.24294/jipd.v8i2.2807

- Hootsuite, & Sosial, W. A. (2022). Digital 2022. In *Essential Insights Into. Internet, Social Media, Mobile, and E-Commerce Use Around The World*.

- Hudson, S., Huang, L., Roth, M. S., & Madden, T. J. (2016). The influence of social media interactions on consumer-brand relationships: A three-country study of brand perceptions and marketing behaviors. *International Journal of Research in Marketing*, *33*(1). https://doi.org/10.1016/j.ijresmar.2015.06.004

- Hung, S. W., Cheng, M. J., & Lee, C. J. (2022). A new mechanism for purchasing through personal interactions: fairness, trust and social influence in online group buying. *Information Technology and People*, *35*(5). https://doi.org/10.1108/ITP-05-2020-0329

- Indriyani, S., & Permana, E. P. (2022). Penggunaan Media Sosial Dalam Pengembangan Pemasaran dan Strategi Promosi Pada Usaha Menengah di Kota Pangkalpinang. *Jurnal Ilmu Komputer Dan Bisnis*, *13*(2). https://doi.org/10.47927/jikb.v13i2.336

- Innew. (2024, August). *aporan salesforce 2024 ai meningkat pesat namun masih ada isu kepercayaan*. Youngster.

- Jain, M., & Khurana, J. (2022). An Investigation into the relationship between AI enabled Chabot Interface and Online buying behavior of Consumers in Delhi NCR Region. *Asian Journal of Management*. https://doi.org/10.52711/2321-5763.2022.00003

- Jehangir, M., Dominic, P. D. D., Naseebullah, & Khan, A. (2011). Towards digital economy: The development of ICT and E-commerce in Malaysia. *Modern Applied Science*, *5*(2), 171–178. https://doi.org/10.5539/mas.v5n2p171

- Joshi, A., Kale, S., Chandel, S., & Pal, D. (2015). Likert Scale: Explored and Explained. *British Journal of Applied Science & Technology*. https://doi.org/10.9734/bjast/2015/14975

- Khatri, A., Labajo, D., & Rege, M. (2021). Reliability of NLP Models to Predict Human Sentiments. *Issues in Information Systems*, *22*(4). https://doi.org/10.48009/4_iis_2021_34-50

- Kim, K. (2011). Likert Scale. *Korean Journal of Family Medicine*. https://doi.org/10.4082/kjfm.2011.32.1.1

- Kohnke, L. (2023). A Pedagogical Chatbot: A Supplemental Language Learning Tool. *RELC Journal*, *54*(3). https://doi.org/10.1177/00336882211067054

- Kristina, N. A., & Aminah, S. (2023). Pengaruh Content Marketing dan Online Customer Review di TikTok Terhadap Keputusan Pembelian Produk Sabun Cuci Muka Garnier. *Journal of Economic, Bussines and Accounting (COSTING)*, *7*(1). https://doi.org/10.31539/costing.v7i1.6729

- Levantino, F. P. (2023). Generative and AI-powered oracles: "What will they say about you?" *Computer Law and Security Review*, *51*. https://doi.org/10.1016/j.clsr.2023.105898

- Lucini, F. R., Tonetto, L. M., Fogliatto, F. S., & Anzanello, M. J. (2020). Text mining approach to explore dimensions of airline customer satisfaction using online customer reviews. *Journal of Air Transport Management*, *83*. https://doi.org/10.1016/j.jairtraman.2019.101760

- Magelo, M., Sinaga, T., & Permana, E. (2023). Analisis pemanfaatan shopee paylater sebagai alat pinjaman online di era pasca pandemic covid-19. *Jurnal Riset Pendidikan Ekonomi*, *8*(2). https://doi.org/10.21067/jrpe.v8i2.8697

- Maharani, M. A., Utami, C. W., & Gosal, G. G. (2022). PENGARUH ONLINE REVIEW & CUSTOMER EXPERIENCE TERHADAP BRAND IMAGE & PURCHASE INTENTION DI PAINTEREST. *PERFORMA*, *6*(6).

https://doi.org/10.37715/jp.v6i6.2151

- McKinsey&Company. (2022). McKinsey Technology Trends Outlook 2022: Immersive-reality technologies. In *McKinsey* (Issue August).
- Mhlungu, N. S. M., Chen, J. Y. J., & Alkema, P. (2019). The underlying factors of a successful organisational digital transformation. *SA Journal of Information Management*. https://doi.org/10.4102/sajim.v21i1.995
- Najla, N., Dewanthi, Y., & Permana, E. (2023). Strategi Mempertahankan Usaha Franchise Pada Minuman Mixue di Indonesia. *Journal Of Business, Finance, and Economics (JBFE)*, *3*(2).
- Ngadimen, A. N., & Widyastuti, E. (2021). Pengaruh social media marketing, online customer review, dan religiusitas terhadap keputusan pembelian konsumen shopee di masa pandemi Covid-19 dengan minat beli sebagai variabel intervening. *Journal of Management and Digital Business*, *1*(2). https://doi.org/10.53088/jmdb.v1i2.134
- Nguyen, Gizaw, A. (2014). Factors that influence consumer purchasing decisions of Private Label Food Products A case study of ICA Basic. *Factors That Influence Consumer Purchasing Decisions of Private Label Food Products*.
- Nguyen, T. T., Le, A. D., Hoang, H. T., & Nguyen, T. (2021). NEU-chatbot: Chatbot for admission of National Economics University. *Computers and Education: Artificial Intelligence*, *2*. https://doi.org/10.1016/j.caeai.2021.100036
- Park, G., Chung, J., & Lee, S. (2023). Effect of AI chatbot emotional disclosure on user satisfaction and reuse intention for mental health counseling: a serial mediation model. *Current Psychology*, *42*(32). https://doi.org/10.1007/s12144-022-03932-z
- Permana, E., Santoso, R., Murdani, & Purwoko, B. (2022). Building Culinary Business Performance during the Covid-19 Pandemic: Transformational Leadership as a Trigger through Digital Capabilities. *Journal of Culinary Science and Technology*. https://doi.org/10.1080/15428052.2022.2040679
- Pratama, Y. E., Sudarwati, S., & Istiqomah, I. (2019). KEPUTUSAN PEMBELIAN ONLINE MELALUI APLIKASI SHOPEE DI SURAKARTA DITINJAU DARI KUALITAS LAYANAN, ONLINE CUSTOMER REVIEW DAN KEPERCAYAAN. *JURNAL ILMIAH EDUNOMIKA*, *3*(02). https://doi.org/10.29040/jie.v3i02.665
- Rachbini, W., Soeharso, S. Y., Wulandjani, H., Evi, T., Permana, E., & Suyanto, S. (2023). Exploring Frugal Buying, Social Influence, and App Behavior in Online Food Shopping in Indonesia. *MIX: JURNAL ILMIAH MANAJEMEN*, *13*(3). https://doi.org/10.22441/jurnal_mix.2023.v13i3.007
- Radwan, A. F., Mousa, S. A., Mohamed, Mervat Medhat, & Youssef, E. Y. M. (2021). Impact of Social Media Influencer Marketing On Youth Purchase Intentions in UAE. *Media Watch*, *12*(3). https://doi.org/10.15655/mw/2021/v12i3/165405
- Ringle, C. M., & Wende, S. Will, A. (2005). *SmartPLS 2.0*.
- Sarwono, Y. (2010). Pengertian Dasar Structural Equation Modeling (SEM). *Jurnal Ilmiah Manajemen Bisnis Ukrida*.
- Sekaran, U., & Bougie, R. (2016). Research Method for Business Textbook: A Skill Building Approach. *John Wiley & Sons Ltd.*
- Shin, H., Bunosso, I., & Levine, L. R. (2023). The influence of chatbot humour on consumer evaluations of services. *International Journal of Consumer Studies*, *47*(2). https://doi.org/10.1111/ijcs.12849
- Suraweera, S., & Jayathilake, W. (2021). Do Social Media Impact Consumer Buying Decisions in the Fashion Industry during the COVID-19 Pandemic? *International Journal of Engineering and Management Research*, *11*(4). https://doi.org/10.31033/ijemr.11.4.27
- Tanuwijaya, C. K., Ellitan, L., & Lukito, R. S. H. (2023). The Effect of Online Customer Reviews on Purchase Intention With Customer Trust as A Variable in Purchase Decision on Sociolla Consumers. *Journal of Entrepreneurship & Business*, *4*(3). https://doi.org/10.24123/jeb.v4i3.5764
- Tenenhaus, M. (2008). Component-based structural equation modelling. *Total Quality Management and Business Excellence*. https://doi.org/10.1080/14783360802159543
- Tenenhaus, M., & Esposito, V. (2005). PLS path modeling. *Computational Statistics & Data Analysis*, *48*, 159–205. https://doi.org/10.1016/j.csda.2004.03.005
- Thoo, A. C., Yap, K. Y., Hang, S. P., & Huam, H. T. (2023). Social Media Interaction, Brand Engagement, Brand Awareness, and Brand Image of a Traditional Chinese Pastry Shop During the COVID-19 Pandemic. *International Journal of Electronic Commerce Studies*, *14*(1). https://doi.org/10.7903/ijecs.2125
- Tyagi, P., & Jain, A. (2023). AI-Based Chatbot Agents as Drivers of Purchase Intentions: An Interdisciplinary Study. In *Internet of Things: Vol. Part F1443*. https://doi.org/10.1007/978-3-031-33808-3_5
- Ullal, M. S., Spulbar, C., Hawaldar, I. T., Popescu, V., & Birau, R. (2021). The impact of online reviews on e-commerce sales in India: a case study. *Economic Research-Ekonomska Istrazivanja*, *34*(1). https://doi.org/10.1080/1331677X.2020.1865179
- Wang, Y., & Yu, C. (2017). Social interaction-based consumer decision-making model in social commerce: The role of word of mouth and observational learning. *International Journal of*

Information Management, *37*(3). https://doi.org/10.1016/j.ijinfomgt.2015.11.005

- Willcocks, L. P., Hindle, J., Stanton, M., & Smith, J. (2024). Maximizing Value with Automation and Digital Transformation. In *Maximizing Value with Automation and Digital Transformation*. https://doi.org/10.1007/978-3-031-46569-7

- Yin, J., Goh, T. T., Yang, B., & Xiaobin, Y. (2021). Conversation Technology With Micro-Learning: The Impact of Chatbot-Based Learning on Students' Learning Motivation and Performance. *Journal of Educational Computing Research*, *59*(1). https://doi.org/10.1177/0735633120952067