THE IMPACT OF CHATBOT USAGE ON CUSTOMER SATISFACTION: AN EMPIRICAL STUDY OF TOKOPEDIA USERS

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Abstract

Digital transformation has encouraged e-commerce companies to adopt AI-based automated service technologies, one of which is chatbots. Tokopedia, as one of the largest e-commerce platforms in Indonesia, utilizes chatbot features to help customers obtain information quickly, practically, and efficiently. This study aims to analyze the use of chatbots in relation to Tokopedia customer satisfaction among students of Universitas Muhammadiyah Palembang. The research employs a descriptive qualitative approach focusing on users' experiences, perceptions, and evaluations when interacting with Tokopedia's chatbot service. Data were collected through in-depth interviews, observation, and documentation involving purposively selected informants, namely students who had used Tokopedia and interacted with the chatbot for information seeking or transaction-related problem solving. Data were analyzed through data reduction, data display, and conclusion drawing. The findings indicate that Tokopedia's chatbot contributes positively in terms of response speed, ease of access, and service efficiency for routine inquiries. However, customer satisfaction has not reached an optimal level due to limitations in contextual understanding, answer accuracy, and the chatbot's ability to handle more complex issues. This study contributes to the growing discussion on AI-based digital services in e-commerce, particularly by evaluating chatbot user experience among university students as an important segment of digital consumers.

Keywords: Chatbot, Customer Satisfaction, Tokopedia, E-commerce, Digital Services.

1. Introduction

The rapid advancement of digital technology has fundamentally transformed the way companies interact with their customers. In the context of digital business, customer service is no longer solely delivered through direct interactions between customers and service representatives. Instead, it has increasingly shifted toward automated systems that rely on information technology and artificial intelligence (AI). This transformation is particularly evident in the e-commerce industry, where businesses are expected to provide fast, responsive, and continuously available services. In an increasingly competitive market, the quality of digital services has become a critical factor influencing customer experience and satisfaction (Laudon & Laudon, 2021).

One of the most widely adopted digital service innovations is the chatbot. A chatbot is an automated conversational system designed to respond to user inquiries through text or voice by utilizing predefined rules or natural language processing (NLP) technologies. In business practices, chatbots are commonly employed to answer frequently asked questions, provide service guidance, assist with order tracking, explain return procedures, and direct customers to appropriate solutions. For companies, chatbot implementation enhances operational efficiency and reduces the workload of customer service representatives. For customers, chatbots offer faster responses, greater convenience, and uninterrupted access to services at any time (Nuraini, 2020; Gnewuch et al., 2017).

In the Indonesian e-commerce sector, Tokopedia is among the leading platforms that actively integrates chatbot technology into its customer service system. The Tokopedia chatbot is designed to assist users in obtaining information related to orders, payments, shipping, complaints, refunds, and various other transaction-related issues. The implementation of chatbot technology reflects the growing demand of digital consumers for instant, simple, and easily accessible services through mobile

applications. However, the effectiveness of a chatbot depends not only on its technological capabilities but also on the quality of the user experience during customer interactions (Ameen et al., 2021).

Customer satisfaction is widely recognized as a key indicator of the successful implementation of digital services. Customers are generally satisfied when the services they receive meet or exceed their expectations. Conversely, dissatisfaction arises when the service fails to provide effective solutions to their problems. In the context of chatbot services, customer satisfaction is determined not only by response speed but also by response accuracy, contextual understanding, ease of use, and the chatbot's ability to resolve customer issues effectively. Therefore, a comprehensive evaluation of chatbot usage is necessary to determine the extent to which this technology creates value for customers (Kotler & Keller, 2016; Adam et al., 2022).

Previous studies have demonstrated that chatbots have significant potential to improve the quality of digital services by accelerating information delivery, facilitating initial customer interactions, and providing 24-hour service availability. Nevertheless, several studies have also highlighted the limitations of chatbots, particularly in handling ambiguous or complex inquiries and situations requiring human empathy. These findings suggest that chatbot implementation does not automatically lead to higher customer satisfaction. The relationship between chatbot usage and customer satisfaction should therefore be examined within specific user contexts, particularly among digitally literate users with high service expectations, such as university students (McLean & Osei-Frimpong, 2019; Mulyani & Rahmawati, 2023).

University students represent one of the most active segments of e-commerce users. They are highly familiar with digital technologies and tend to compare service quality across different platforms. Students of Universitas Muhammadiyah Palembang were selected as the research participants because they represent digital consumers who frequently engage in online transactions and regularly utilize application-based service features. Their experiences with the Tokopedia chatbot provide valuable insights into how automated customer service technologies are perceived, utilized, and evaluated by young, technology-oriented consumers (Mulyani & Rahmawati, 2023).

The primary issue addressed in this study lies in the tension between technological efficiency and customer experience. On one hand, chatbots provide convenience and rapid responses. On the other hand, customers increasingly expect personalized, context-aware, and solution-oriented assistance. When chatbots fail to accurately understand users' needs, the efficiency benefits may be diminished, leading to lower customer satisfaction. Therefore, it is important to investigate not only whether chatbots are used but also how users evaluate the quality of chatbot interactions in relation to their overall satisfaction (Huang & Rust, 2021).

Based on this background, this study aims to analyze the influence of chatbot usage on customer satisfaction among Tokopedia users at Universitas Muhammadiyah Palembang. More specifically, the study seeks to identify how customers utilize the Tokopedia chatbot, evaluate users' perceptions of chatbot interaction quality, and explain how chatbot usage influences customer satisfaction based on users' actual experiences.

2. Research Methods

2.1. Object, time and Place

This study employed a descriptive qualitative approach to gain an in-depth understanding of users' experiences, perceptions, and evaluations of the Tokopedia chatbot service, rather than examining statistical relationships among variables. A qualitative approach enables researchers to capture the subjective meanings of participants' experiences, including their expectations, satisfaction, and challenges encountered while interacting with the chatbot.

The research was conducted at Universitas Muhammadiyah Palembang. The participants consisted of active undergraduate students who had used the Tokopedia application and interacted with its chatbot service. University students were selected because they represent active users of digital technology, are familiar with e-commerce transactions, and are capable of providing critical evaluations of digital service quality.

Participants were selected using a purposive sampling technique based on the following criteria: (1) active students at Universitas Muhammadiyah Palembang, (2) previous experience using Tokopedia for online transactions or information searches, (3) prior interaction with the Tokopedia chatbot, and (4) willingness to share their experiences openly during the research process.

2.2. Data Collection Techniques

The study utilized both primary and secondary data sources. Primary data were collected through semi-structured, in-depth interviews, allowing participants to freely describe their experiences while ensuring that the discussion remained aligned with the research objectives. The interviews focused on

chatbot usage frequency, the types of services utilized, perceptions of response speed and accuracy, ease of use, experiences with service-related issues, and overall customer satisfaction after using the chatbot.

In addition, observations were conducted to examine users' interactions with the chatbot, particularly the response flow and the relevance of the answers provided in different communication scenarios.

Secondary data were obtained through a literature review of scientific journals, books, conference proceedings, and other academic publications related to chatbots, digital service quality, user experience, and customer satisfaction. These sources were used to strengthen the conceptual framework and support the interpretation of the research findings.

Overall, four data collection techniques were employed: (1) in-depth interviews to obtain participants' experiences and evaluations, (2) observations to examine chatbot interaction patterns, (3) documentation, including screenshots of chatbot conversations and other relevant interaction records, and (4) a literature review to establish the theoretical foundation and compare the findings with previous studies.

2.3. Data Analysis Techniques

The collected data were analyzed using the interactive model proposed by Miles, Huberman, and Saldaña, which consists of three stages: data reduction, data display, and conclusion drawing.

During the data reduction stage, the researcher selected, organized, and simplified the collected data by identifying themes relevant to the research objectives, including response speed, ease of use, response accuracy, issue escalation, and customer satisfaction.

In the data display stage, interview and observation results were systematically organized into thematic descriptions to facilitate the identification of patterns and relationships among the findings.

Finally, conclusions were drawn by interpreting the relationships among the identified themes and explaining how chatbot usage influenced customer satisfaction among Tokopedia users.

2.4. Trystwortiness of the Data

To ensure the credibility of the findings, this study employed both source triangulation and method triangulation. Source triangulation was conducted by comparing information obtained from participants with different experiences in using the Tokopedia chatbot. Method triangulation was achieved by comparing findings from interviews, observations, and documentation. These procedures enhanced the credibility of the findings by reducing reliance on a single source of information.

In qualitative research, the researcher serves as the primary research instrument responsible for collecting, interpreting, and analyzing the data. Therefore, objectivity was maintained through systematic data recording, comparison of findings across participants, and interpretation of the findings based on relevant theoretical frameworks. Through this approach, the study is expected to provide a comprehensive understanding of the use of the Tokopedia chatbot and its implications for customer satisfaction.

3. Results and Discussion

The results of the study indicate that the use of the Tokopedia chatbot among students of Universitas Muhammadiyah Palembang is relatively intensive, particularly for routine and straightforward information needs. Informants generally used the chatbot to inquire about order status, estimated delivery times, product return procedures, refund status, payment methods, and general information regarding transaction procedures. In this context, the chatbot serves as the first channel chosen by users before contacting human customer service representatives or searching for answers through the help center.

3.1. The Impact of Chatbot Usage on Customer Satisfaction

Overall, this study found that the use of the Tokopedia chatbot plays an important role in shaping customer satisfaction, although its impact is not absolute. Positive effects were identified in three main aspects: service speed, ease of access, and efficiency in addressing routine information needs. Users felt assisted because they could obtain initial responses without having to wait for extended periods. In certain cases, this was sufficient to create a satisfactory experience, particularly when users' needs were simple and primarily informational.

However, negative effects or limitations in customer satisfaction emerged when users perceived that the chatbot was unable to provide accurate and contextual responses or resolve the core of their problems. Therefore, customer satisfaction with chatbot services is situational. When users' needs are aligned with the chatbot's capabilities, satisfaction tends to be relatively high. Conversely, when users' needs exceed the system's capabilities, satisfaction decreases, and users become more likely to seek human assistance.

These findings provide the insight that the relationship between chatbot usage and customer satisfaction cannot be understood as a linear relationship. High levels of chatbot usage do not automatically indicate high levels of customer satisfaction. Instead, the key determinant is the quality of fit between customers' needs and the capabilities of the chatbot service. In other words, the effectiveness of a chatbot depends heavily on its conversational design, knowledge base, response accuracy, and service escalation mechanisms.

3.2. Customer Chatbot Usage Pstterns

The first finding indicates that the chatbot is primarily used because of its ease of access and rapid response. For students who are accustomed to instant services, the chatbot serves as a practical option because it is readily available within the application and does not require users to wait in a queue. Users can simply select the available menu options or type their questions to receive a quick response. This finding demonstrates that, in terms of initial adoption, the chatbot has successfully addressed the efficiency needs of digital customers.

However, this usage pattern also reveals a distinctive characteristic. Users tend to utilize the chatbot during the initial stage of searching for solutions rather than as the final channel for resolving problems. When an issue is simple and can be addressed through standardized information or predefined responses, the chatbot is considered highly helpful. Conversely, when a problem involves specific transaction details or requires a more flexible explanation, users tend to seek alternative service channels. This indicates that chatbot usage is largely instrumental: users continue to use it as long as they perceive it as fast and functional, but they quickly switch to other channels when it is no longer effective.

This finding is important because it demonstrates that the frequency of chatbot usage does not necessarily correspond to a high level of customer satisfaction. Customers may frequently use the chatbot simply because it is easily accessible, but this does not necessarily mean that they are fully satisfied with the overall service. In other words, usage intensity should be distinguished from the quality of the user experience.

3.3. Respons Speed as a Primary Source of Value

The aspect most consistently appreciated by the informants was response speed. The chatbot is capable of providing answers within a short period, enabling users to obtain information without having to wait for customer service representatives. In the fast-paced e-commerce ecosystem, instant responses are highly valuable because customers generally seek immediate certainty, particularly regarding orders and payments.

This speed has a positive impact on users' perceptions of service quality. Informants felt that the chatbot shortened the process of searching for information and reduced the effort required to manually navigate through help menus. From a user experience perspective, rapid responses create the impression that the platform has an efficient service system that is readily available whenever assistance is needed. At this point, the chatbot reinforces the image of a modern and adaptive digital service.

Conceptually, this finding supports the view that chatbots contribute to responsiveness in digital service quality. Customers do not always require human interaction in every situation; in many cases, they simply need quick answers to relatively standardized questions. Therefore, the primary advantage of a chatbot does not lie in its ability to completely replace human service representatives, but rather in its capacity to provide fast and easily accessible initial assistance.

Nevertheless, response speed alone is insufficient to guarantee customer satisfaction when the content of the response is irrelevant. Several informants stated that even a fast response could still be perceived as unhelpful when it failed to address the core of their problems. This indicates that, in chatbot-based services, response speed and answer quality must work together. A fast response without adequate accuracy merely creates an illusion of efficiency.

3.4. Ease of Use and Service Accessibility

In addition to response speed, the informants also considered the Tokopedia chatbot relatively easy to use. The conversational interface was perceived as simple, the help menus were sufficiently clear, and the process of accessing the service was not complicated. For students who are accustomed to digital applications, this ease of use enhances user convenience and reduces barriers to seeking assistance when encountering difficulties.

Ease of use is important because complex digital services can reduce customer satisfaction, even when they offer comprehensive technical functionality. In the context of chatbots, customers tend to appreciate systems that do not require multiple steps to obtain answers. If the menu structure is overly complex, the terminology is too technical, or the conversation flow is unintuitive, users may quickly lose interest. The findings indicate that, at a basic level, Tokopedia has been relatively successful in designing a chatbot that is easy for users to operate.

However, this ease of use is more evident in features based on predefined answer choices or frequently asked questions. When interactions shift toward more specific inquiries, the user experience becomes less seamless. Users may need to try different keywords or navigate through several menus to obtain an answer that closely matches their needs. This situation indicates that the chatbot's ease of use is not yet fully supported by sufficient flexibility in understanding variations in user expressions.

From an analytical perspective, ease of use contributes to customer satisfaction through perceptions of control and efficiency. Customers feel that they can access assistance quickly without having to follow complicated procedures. However, these benefits may diminish when the chatbot fails to provide appropriate responses at later stages of interaction. Therefore, chatbot usability is an important prerequisite for customer satisfaction, but it is not the sole determinant.

3.5. Respons Accuracy as a Major Weakness

The most crucial finding of this study is that chatbot response accuracy remains a major weakness. Informants reported that the chatbot frequently provided answers that were too general, repetitive, or not fully aligned with the context of their questions. This problem occurred particularly when users encountered specific issues, such as discrepancies in transaction status, complaints about sellers, delays in refunds, or cases requiring more detailed investigation.

This limitation significantly affects the user experience. In many cases, customers do not simply need fast responses but require solutions that are genuinely relevant to their specific situations. When the chatbot provides generic responses, users perceive a gap between their needs and the system's capabilities. As a result, the chatbot is perceived as useful only for simple problems and less reliable for more serious issues.

From the perspective of customer satisfaction, response accuracy carries greater importance than response speed alone. Customers tend to tolerate a slightly longer process if the final outcome is accurate and successfully resolves their problems. Conversely, a fast but irrelevant response may increase frustration because it forces users to take additional steps to seek alternative assistance. In this context, the quality of chatbot interactions does not yet fully meet the expectations of digital customers who seek intelligent, personalized, and solution-oriented services.

This finding also reveals a gap between expectations of AI technology and the actual experience of using chatbots based on predefined rules or limited response capabilities. Many users expect chatbots to understand their intentions contextually. When the actual experience fails to meet these expectations, customer satisfaction declines. Therefore, the impact of chatbot usage on customer satisfaction is ambivalent: positive in terms of efficiency, but negative when the system's contextual understanding is inadequate.

3.6. Limitations in Handling Complex Problems

The findings demonstrate that the chatbot is relatively effective in addressing informational inquiries but less optimal when handling complex and emotionally sensitive issues. Problems such as transaction disputes, suspected fraud, complaints about sellers, or unusual refund issues often require more detailed explanations and decisions that cannot be adequately addressed through automated responses.

In such situations, customers expect a rapid escalation mechanism that allows them to connect with human customer service representatives. However, several informants indicated that the process of transitioning from the chatbot to a human service representative was not always easy or immediate. This limitation contributes to a fragmented service experience. Users must first interact with the chatbot and then search for alternative service channels when the provided solution is inadequate. This additional process may reduce the perception of efficiency that previously represented one of the chatbot's main advantages.

From an analytical perspective, this finding reinforces the view that chatbots should be understood as one component within a broader customer service ecosystem rather than as a standalone solution. Customer satisfaction is not determined solely by the chatbot's independent performance but also by the extent to which the chatbot is integrated with other support systems. An effective chatbot should not merely provide fast responses; it should also recognize the boundaries of its capabilities and appropriately direct customers to further assistance when necessary.

3.7. Theortical and pratical Implications

From a theoretical perspective, this study emphasizes that the evaluation of chatbot services should extend beyond the dimension of technology adoption. Many studies focus on users' acceptance of chatbot technology; however, this study demonstrates that customer satisfaction is strongly influenced by concrete interactive experiences. Therefore, research on chatbots in digital business should integrate the perspectives of user experience, service quality, and customer satisfaction in a more comprehensive manner.

From a practical perspective, Tokopedia and other e-commerce platforms can draw several important lessons from these findings. First, response speed should be maintained because it represents one of the primary values appreciated by customers. Second, chatbot development should focus on improving the system's ability to understand the context of questions and variations in user language. Third, companies need to ensure the availability of a clear, fast, and easily accessible escalation pathway when the chatbot is unable to resolve a customer's problem. Fourth, chatbot evaluation should be based on actual customer experiences rather than solely on technical system performance indicators.

The findings of this study are also relevant to the development of digital service strategies for young users, particularly university students. This segment has high expectations regarding convenience and system intelligence. They evaluate not only whether a service is available but also whether it is genuinely efficient, relevant, and capable of facilitating problem resolution. Therefore, developing user-centered chatbot services has become a strategic necessity in the increasingly competitive e-commerce industry.

4. Conclusion

This study concludes that the use of the Tokopedia chatbot influences customer satisfaction among students of Universitas Muhammadiyah Palembang; however, this influence is limited and contextual. The chatbot provides positive contributions, particularly in terms of response speed, ease of use, and service accessibility. For routine and informational needs, the chatbot is able to improve service efficiency and provide a relatively satisfactory experience for users.

However, customer satisfaction has not yet reached an optimal level due to limitations in response accuracy, the ability to understand the context of user inquiries, and the handling of complex problems. When the chatbot fails to provide relevant solutions, users tend to become less satisfied and seek assistance through alternative service channels. Therefore, customer satisfaction is influenced not merely by the availability of a chatbot but, more importantly, by the quality of interactions and the relevance of the solutions provided.

Substantively, this study demonstrates that the chatbot is more effective as an initial assistance service than as a complete replacement for human customer service. Therefore, future chatbot development should focus on improving natural language understanding, response accuracy, answer personalization, and integration with human service escalation mechanisms. These efforts are essential to ensure that chatbots are not only efficient from a system perspective but are also capable of enhancing customer satisfaction more comprehensively.

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