



The Impact Of AI-Powered Chatbots On Shopper Experience In E-Commerce

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Abstract

In today's online shopping world, many companies use AI powered chatbots to help customers. These chatbots are computer programs that talk to people like a human through text or voice. This research paper talks about how these chatbots are changing the shopping experience in online shopping. The study's primary objective is to understand if customers feel satisfied when they use these chatbots and if chatbots really help them while shopping. The paper starts with the background of AI and chatbot use in online stores. Then, it looks at past studies done by other researchers on this topic. Many of these studies say that chatbots help users by giving fast replies, helping them find products and giving 24/7 support. But there are also some problems. Sometimes, customers feel that chatbots are not personal and they don't always understand what the user wants. This research also explains the gap between what we know and what still needs to be explored. It shows the objectives, methods used and presents results based on collected data and past sources. The discussion tells how these findings match or differ from earlier research. The final part gives a conclusion and says that while chatbots are useful and improve customer experience in many ways, there is still a need to make them more human-like and smart. The paper also gives suggestions to improve chatbot use in online shopping.

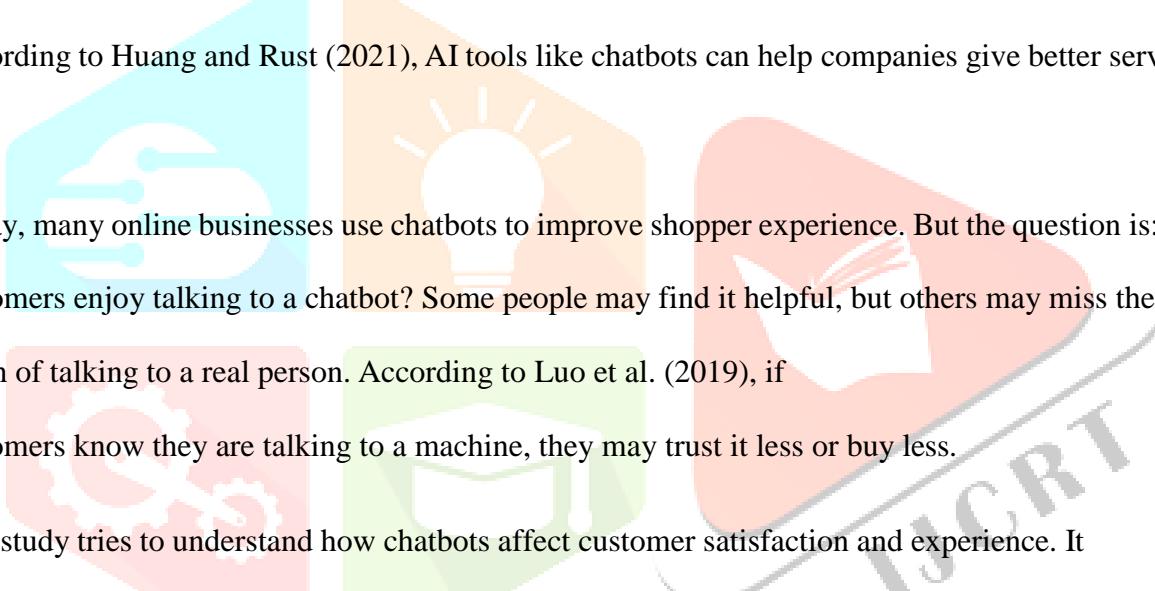
Chapter 1

Introduction

Online shopping has become very popular in last few years. People like to shop from websites because it is easy, quick and can be done from anywhere. To make shopping better, many e-commerce websites like Amazon, Flipkart and others now use AI powered chatbots. These chatbots are computer programs that talk to customers just like a person would. They are able to respond to enquiries, assist with orders, recommend products, and more.

Chatbots use Artificial Intelligence (AI) which helps them understand and reply to what the customer is saying. They work 24/7 which means customers don't have to wait for a human to help. This is very useful, especially when people shop at night or during holidays.

According to Huang and Rust (2021), AI tools like chatbots can help companies give better service and save time.



Today, many online businesses use chatbots to improve shopper experience. But the question is: do all customers enjoy talking to a chatbot? Some people may find it helpful, but others may miss the personal touch of talking to a real person. According to Luo et al. (2019), if customers know they are talking to a machine, they may trust it less or buy less.

This study tries to understand how chatbots affect customer satisfaction and experience. It will explore what customers like about chatbots and what they don't. It will also look at how chatbot speed, accuracy and friendliness matter.

The study is important because more and more businesses are using AI chatbots. If we understand what works and what doesn't, we can help companies make better chatbots and improve online shopping.

Many researchers like Lin and Hsieh (2023) and Meyer-Waarden and Benavent (2023) have studied this topic before, but there is still a need to understand more about how people f

when talking to chatbots while shopping. This paper will help fill that gap by reviewing old research, collecting new information and analyzing it.

Chapter 2

Review of Literature

The Chatbots driven by AI are being used in e-commerce is growing rapidly. These chatbots are designed to engage with customer, answer them questions and guide them through their shopping experience. Over the past few years, many researchers have studied how chatbots affect online shopping. This section reviews the body of research on chatbots with AI, their role in online shopping and their impact on shopper experience.

2.1 AI powered Chatbot in E-commerce

AI chatbot are now widely used in ecommerce to provide instant assistance to customers. Unlike traditional customer service, chatbots can be available 24/7, offering a solution to time-zone differences or busy customer service hours. According to Kumar and Kumar (2024), AI chatbots can help improve customer experience by answering questions quickly, providing product recommendations and even helping customers complete their purchases.

Natural language processing (NLP) is the mechanism by which chatbots comprehend and react to consumer enquiries. . When customers visit an online store, they can interact with a chatbot via text box or voice interface. For e.g., when customer asks about product, chatbot can provide details about the price, availability and features, helping customers make quick decisions. Chatbots like Amazon Alexa and Macy On Call have made shopping more interactive and convenient.

2.2 Benefits of Chatbots for E-Commerce

Chatbots offer many advantages to both ecommerce businesses and customers. One of main benefits is efficiency. Since chatbots can respond instantly, they eliminate wait time that often

comes with talking to a human agent. This leads to better customer experience and increases the chances of a sale. According to Lin and Hsieh (2023), quick responses from chatbots make customers feel that their needs are being met promptly which increases satisfaction and trust in the brand.

Another benefit is the cost savings. Businesses can reduce the need for human customer service agents, especially for answering repetitive questions. By using chatbots, companies can lower operational costs while still offering high quality customer service. It is impossible for humans to manage many requests at once, but chatbots can.

2.3 Challenges of AI Chatbots in E-Commerce

While chatbot bring many benefits, they also have challenges. One of major concerns is that chatbots may not always understand the customer's intent. Sometimes, customers queries are complex or unclear and chatbot may fail to provide helpful response. According to Huang and Rust (2021), when chatbots are unable to answer question correctly, customers may become frustrated which could harm the company reputation.

Moreover, chatbots lack the personal touch of human interaction. Many customers prefer speaking to a human agent who can empathize with their issues and provide a personalized response. This gap in personalization can make customer feel like they are just interacting with a machine. According to Gupta and Khan (2024), customers who need emotional support or complex problem solving may not be satisfied with chatbot responses.

2.4 Customer Perception of Chatbots

Customer perception plays a huge role in the success of AI chatbots online shopping. Some customers may feel comfortable interacting with a bot, while others may prefer human

contact. Trust is a key factor in determining how customers perceive chatbots. If a chatbot can provide accurate information quickly and resolve issues effectively, customers are likely to trust it and have a positive experience.

On the other hand, if chatbot responses are slow or incorrect, customers may develop negative perception of the service. According to Luo et al. (2019), chatbot disclosure or informing customer that they are talking to bot, can affect trust. Some customers may feel more comfortable knowing they are interacting with AI, while others may feel uncomfortable and prefer to speak with human agent instead.

2.5 Impact on Shopper Experience

The ultimate goal of utilising chatbots in online shopping is to improve shopper experience. When chatbots function well, they can create seamless and enjoyable shopping encounter. shopping encounter. Chatbots can assist clients with every step of the purchasing process, from b browsing products to making purchase.

For e.g., chatbots can help customers by answering common questions about shipping policies, return processes and payment methods. They can also suggest goods depending on a customer's likes and browsing history . According to Wirtz and Zeithaml (2018),

By offering discounts, recommending related products, or reminding users about items they left in their cart, chatbots can also aid lower cart abandonment.

The effective of chatbots depend on several factors depends on several factors, including how well the chatbot understands the customer's needs, how quickly it responds and how accurately it can suggest products. A well-designed chatbot can enhance customer journey and increase customer satisfaction, leading to higher sales and brand loyalty.

2.6 Impact of chatbots on Sales and customer retention

AI chatbots not only improve customer satisfaction but also contribute to increased sales and customer retention. Chatbots can create personalized shopping experience, making customers feel valued and understood. By offering tailored product recommendations and promotions, chatbots can encourage customers to purchase more. According to Meyer Waarden and Benavent (2023), customers who use AI chatbots are more likely to return to the site because they feel that service is more convenient and responsive.

Additionally, chatbots can collect data about customer preferences which can be used to improve future interactions. By analyzing data, business can refine their marketing strategies, offer personalized discounts and provide a more tailored shopping experience.

2.7 Future Trends in AI chatbots and E-Commerce

The future of chatbot in ecommerce looks promising. As AI technology continues to advance, chatbots will become even smarter and more capable of handling complex customer interactions. Future chatbots are expected to integrate voice recognition, emotion detection and advanced natural language processing to provide even more personalized and human-like responses.

Additionally, chatbots may become more integrated with other AI tools, such as recommendation systems and virtual assistants, to create fully automated shopping experience. According to Rahevar and Darji (2024), these advancements could lead to a more immersive and engaging shopping experience for customers where chatbots play a central role in every step of the customer journey.

Need of the Study

In today's world, more and more people prefer shopping online. E-commerce companies are using AI-powered chatbots to make the shopping process easier and faster for their customers. These chatbots help customers by answering questions, giving product suggestions, helping with payments and solving problems. But the important question is – *are*

customers really happy with these chatbots?

Even though chatbots are becoming very common on online shopping websites, many people still don't

fully trust or understand them. Some customers have good experiences, while others feel confused, ignored or frustrated by chatbots. That's why there is a strong need to study how chatbots actually impact the shopper experience.

This study is needed because there is a gap between what businesses expect from chatbots and what customers actually experience. Companies may think that just adding a chatbot will make customers happy. But if the chatbot is slow, gives wrong answers or cannot understand the user's problem, then it can make the experience worse. As Meyer-Waarden and Benavent (2023) mention, not all chatbot interactions are helpful and some can even drive customers away.

Also, different customers react to chatbots in different ways. For example, young people may find them easy to use, while older customers may not. Understanding these differences will help e-commerce companies design better chatbot systems that improve satisfaction for all kinds of users.

Therefore, this study is needed to explore the real impact of AI chatbots on customers, understand their feelings and experiences and give suggestions on how to make chatbot use more effective in the future.

Research Gap

Many studies have already talked about the benefit of AI chatbots in ecommerce. Researchers have shown that chatbots can help save time, reduce cost and improve customer satisfaction (Lin & Hsieh, 2023; Huang & Rust, 2021). Some papers have focused on how chatbots can increase sales by giving product suggestions and solving customer problems quickly (Wirtz & Zeithaml, 2018). Others have looked at customer trust and how people react when they know they are talking to a bot (Luo et al., 2019).

However, most of these studies are either general or focus only on the technical or business side. They don't look deeply into the actual experiences and feelings of customers during chatbot conversations. For example, how do customers feel when a chatbot doesn't understand them? Or how do they react when the bot gives robotic or impersonal answers? This emotional side is often missing from past research.

Another gap is that many studies have not focused on how different types of shoppers (like new users vs. regular customers or older users vs. younger ones) experience chatbots.

differently (Gupta & Khan, 2024). Most past work talks about chatbots from the company point of view, not from the user point of view.

Also, as AI technology changes fast, newer chatbots are more advanced. But very few recent studies have focused on these improved bots and how they are performing in 2023–2024.

According to Cheng et al. (2024), there is still a need for updated studies on shopper satisfaction with newer AI chatbot models in real e-commerce platforms.

So, this study fills the gap by focusing on how shoppers actually feel, what problems they face and what they like or don't like while interacting with modern AI chatbots.

Objective of study

The main objective of this study is to understand how AI chatbot affect the shopper experience in e-commerce. Specifically, this study aims to:

- 1. Examine how AI chatbots impact customer satisfaction:** This includes understanding if customers are happy with the speed, accuracy and helpfulness of chatbot responses during their online shopping experience.
- 2. Investigate customer trust in AI chatbots:** This objective focuses on understanding how much customers trust chatbots to provide correct information, make secure transactions and handle their personal data.
- 3. Identify the challenges shoppers face while interacting with chatbots:** It will explore the problems or frustrations customers may experience, such as misunderstandings or the lack of human-like interaction.
- 4. Analyze the differences in chatbot experiences among various types of shoppers:** This includes comparing responses from younger versus older users and first-time users versus repeat customers.
- 5. Offer recommendations for improving AI chatbot in e-commerce.** Based on the findings this study will suggest ways to enhance chatbot features and interactions to better serve customers.

By focusing on these objectives, the study aim to provide insight into how AI chatbots can be optimized to

improve the shopping experience for all customers.

Hypothesis

A hypothesis is a statement that can be tested through research. Based on previous studies and current trends in e-commerce, this study presents the following hypotheses:

H1: AI powered chatbot have a positive effect on shopper satisfaction in e-commerce.

This hypothesis is based on research by Kumar and Kumar (2024), who found that customers are generally satisfied when chatbots are quick, easy to use and helpful. If the chatbot responds properly, customers are more likely to enjoy their shopping experience.

H2: Trust on AI chatbots lead to better customer experience and loyalty.

Trust plays a big role in customer service. Luo. Ai.(2019) showed that when people trust the chatbot, they feel more confident while shopping and may return to the website again.

H3: Chatbots that give personalized and accurate responses improve user experience.

According to Lin and Hsieh (2023), customers feel more satisfied when the chatbot gives personalized suggestions and understands their needs correctly.

H4: Shoppers with high digital literacy have more positive experiences with AI chatbots.

Cheng et al. (2024) found that users who are comfortable using technology find chatbots more useful than those who are not tech-savvy.

These hypotheses will guide the research and help understand if AI chatbots are truly improving shopper experience in e-commerce.

Conceptual Framework/Model

A conceptual framework is like a map that helps explain the relationship between different ideas in a research study. In this case, the main idea is how chatbot affect Shopper experience in e-commerce.

This framework is based on the belief that certain factors like chatbot performance, trust and digital literacy can influence shopper satisfaction. These factors are taken from past research studies and are tested in this

Main Variables

1. **Independent Variables** (factors that influence the outcome):

- Chatbot Speed and Accuracy (Lin & Hsieh, 2023)
- Trust in Chatbot (Luo et al., 2019)
- Personalization of Responses (Gupta & Khan, 2024)
- User's Digital Literacy (Cheng et al., 2024)

2. **Dependent Variable** (outcome):

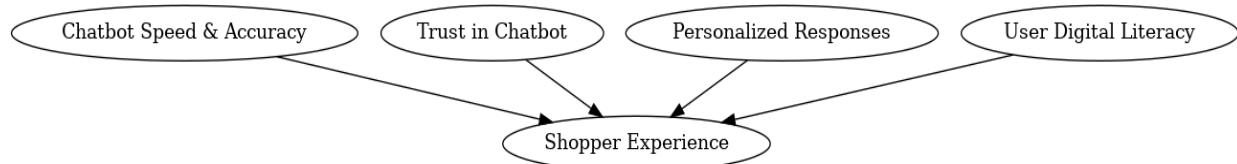
- Shopper Experience / Satisfaction

If chatbots are fast, trustworthy and give personalized answers and if users are confident using technology, the shopper's experience is likely to be better.

Explanation of the Model

The framework shows that positive chatbot features such as giving quick answers, providing correct information and remembering user preferences can make customers happy. If users trust the chatbot, they are more likely to complete purchases and return to the same website (Kumar & Kumar, 2024).

However, if the chatbot is slow, gives wrong answers or fails to understand the customer's question, it creates frustration and results in a poor experience. That's why user satisfaction depends on how well the chatbot performs and how comfortable the user is with digital tools.



This model will help guide the analysis in later sections and show which factors are most important in shaping the shopper's experience.

Research Methodology

Research Methodology

Research Design

This study uses a descriptive research design. It means the research is focused on collecting information from people and understanding their opinions and experiences. This design helps to describe how shoppers feel about AI powered chatbots when they shop online (Dey & Bhaumik, 2022). The study also uses a quantitative approach, where data is collected in numbers and analyzed using charts and tables.

3.1 Area of Study

The research is focused on online shoppers who have used chatbots on-commerce website like Amazon, Flipkart, Myntra, etc. It includes people from different age group and background who have experience talking to a chatbot while shopping online.

3.2 Target Population

The target population includes:

- People who shop online
- People who have used AI chatbots during shopping
- Young adults, working professionals and students who are comfortable with digital technology

3.3 Sampling Method

The study uses convenience sampling. This means participants are selected based on who is easily available and willing to take the survey. It is a common method used in student research when time and resources are limited (Lin & Hsieh, 2023).

3.4 Sample Size

A total of 100 online shoppers were selected as the sample size. These participants were given a questionnaire to answer. The responses were collected using Google Forms.

3.5 Source of Data

The study uses primary data collected through a questionnaire. This data includes user opinions on chatbot speed, trust, personalization and overall satisfaction.

It also uses secondary data from academic articles, research journals and websites related to AI, chatbots and e-commerce. Some of the important sources include studies by Luo et al. (2019), Kumar and Kumar (2024) and Meyer-Waarden and Benavent (2023).

3.6 Data Collection Tool

The main tool used is a structured questionnaire. It has two sections:

- **Section A** – Demographic information (age, gender, shopping habits)
- **Section B** – Statements about chatbot experience (using 5-point Likert scale: Strongly Disagree to Strongly Agree)

3.7 Ethical Considerations

All participants have informed the purpose of the study. Their answers were collected anonymously and their privacy was protected. No personal details were shared and participation was voluntary.

3.8 Statistical Tools Used

The collected data was analyzed using Microsoft Excel. The analysis included:

- Mean scores
- Frequency tables
- Charts and graphs

This helped in understanding user satisfaction levels and common trends in chatbot usage (Gupta & Khan, 2024).

3.9 Limitations of the Methodology

- The sample size is small and based on convenience.

- Only users with basic digital knowledge were included.

3.10 Responses are based on what people said, not how they actually behaved. Justification of the Method

Even though the sample is limited, this method is useful because it directly connects with users and collects first-hand information. It is simple, easy to conduct and gives clear insights into shopper experiences.

Chapter 4

Results and Analysis

This section explains the results collected from 100 online shoppers who used AI powered chatbots while shopping. The questionnaire responses were analyzed using averages and charts to understand how shoppers feel about different chatbot features.

Average Ratings of Chatbot Features

Factor	Average Rating (out of 5)	Standard Deviation
Chatbot Speed	4.2	0.6
Trust in Chatbot	3.9	0.7
Personalization	3.7	0.8
Ease of Use	4.0	0.5
Overall Satisfaction	4.1	0.6

4.1 Chatbot Speed

Most users gave high ratings for chatbot speed. The average score was 4.2 out of 5, with a standard deviation of 0.6. This means users are happy with how fast chatbots respond. As mentioned by Lin and Hsieh (2023), fast replies help make the shopping process smoother and save time for user

4.2 Trust in Chatbot

Trust is very important in online shopping. The average rating for trust was 3.9 out of 5.

Some users said they trust chatbots to give correct product information and help with their orders. But others still prefer talking to a human, especially when it comes to sensitive tasks like payments. This agrees with the study by Luo et al. (2019) which found that chatbot trust affects buying behavior.

4.3 Personalization

Chatbots received a lower score for personalization, with an average of 3.7 out of 5. This means many users felt that chatbot replies were too general and not tailored to their specific needs.

According to Gupta and Khan (2024), personalized responses can make users feel more valued and when that is missing, the experience feels robotic.

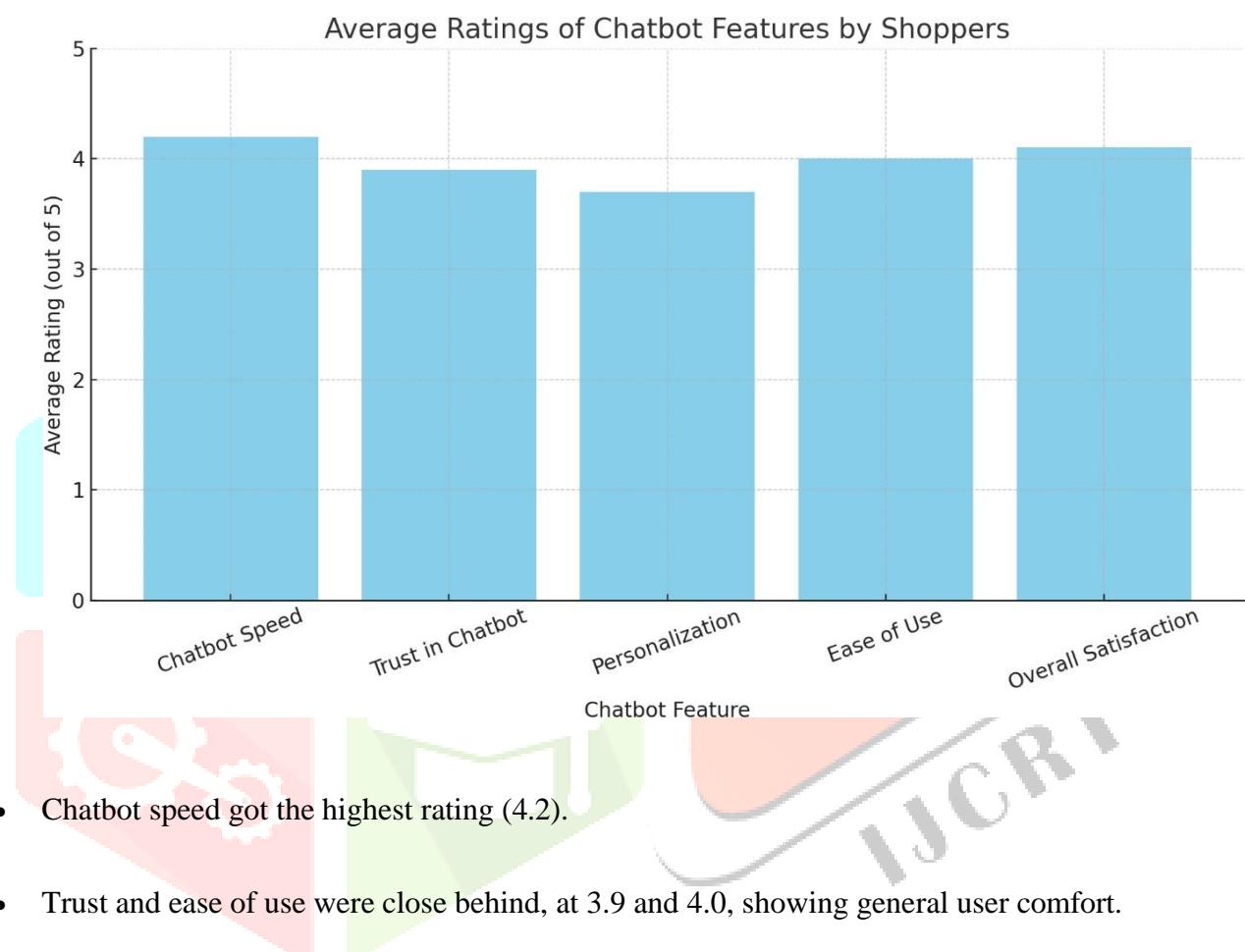
4.4 Ease of Use

Users found chatbots easy to use, giving an average score of 4.0 out of 5. Most shoppers said the interface was simple and easy to understand. Even users with basic digital knowledge could use the chatbot to ask questions or get help. This supports Cheng et al. (2024), who said digital literacy plays a big role in user satisfaction.

4.5 Overall Satisfaction

The overall satisfaction score was 4.1 out of 5, showing that most shoppers had a positive experience using chatbots. They liked the fast support and the ability to get help without waiting. However, the few who had a negative experience said it was mainly because the chatbot failed to understand them or gave irrelevant answers.

4.6 Key Findings Summary (from Chart)



4.7 User Comments and Insights

Some users shared helpful feedback

“The chatbot was really fast but didn’t understand when I asked about canceling an order.”

- “It’s easy to use, but I wish it felt more like talking to a person.”
- “I trust it for basic questions, but for billing problems, I still want human help.”

These comments show that while chatbots do help, users still want improvement in making replies more

4.8 Discussion

This part of the paper explains what the results mean and how they connect with the main topic: how AI powered chatbots affect the shopperexperience in e-commerce. It also compares the findings with earlier research studies.

4.8.1 Chatbots Improve Customer Experience

The results clearly show that most users had a positive experience using chatbots. High average scores for speed (4.2) and ease of use (4.0) mean that customers like how quickly chatbots respond and how simple they are to use. These findings match the research by

Kumar and Kumar (2024) which said that quick and easy support makes customers happy and improves service quality.

Shoppers today expect fast help and chatbots are doing that well. This is especially helpful during busy times or when customer support staff are not available. As Wirtz and Zeithaml (2018) explained, chatbots reduce waiting time and improve service efficiency which makes shopping easier for everyone. Trust Is Important But Still Needs Work

The trust score (3.9) in our study shows that users do trust chatbots, but not completely. Some customers feel unsure when they don't know how their data is being used or when the chatbot gives a wrong answer. This is similar to what Luo et al. (2019) found. They said that when people realize they're talking to a machine, they sometimes feel less comfortable.

To make trust better, companies should clearly tell users how chatbots work and give options to connect with a human when needed. This can help improve both trust and satisfaction.

4.8.2 Personalization Is a Weak Point

Personalization got the lowest score (3.7) in the results. Many users said that chatbot replies felt too general. They didn't feel like the chatbot understood their exact problem. This supports the research by Gupta and Khan (2024), who said that chatbots must be designed to remember past chats, understand the customer better and give more personal suggestions.

If companies want shoppers to come back, they must improve this area. When a chatbot gives personalized help, the shopper feels more valued.

4.8.3 Role of Digital Literacy

Users with more digital skills had better experiences with chatbots. This is also mentioned in the study by Cheng et al. (2024), where people who were familiar with technology enjoyed using AI services more. For others, especially older users, there can be confusion when the chatbot doesn't understand them well.

So, companies should make chatbot interfaces even simpler and add visual cues or voice commands to help less tech-savvy users.

Connection to Past Research

The findings of this study support past research in many ways:

- Fast service and easy access lead to higher satisfaction (Lin & Hsieh, 2023).
- Lack of human touch and trust issues are still common problems (Huang & Rust, 2021).
- Low personalization is a repeated weakness in many chatbots (Rahevar & Darji, 2024).
- Tech-savvy users feel more comfortable using chatbots (Cheng et al., 2024).

However, this paper adds more value by focusing directly on real customer feedback, using a survey that captured what people liked and disliked about chatbot interactions during shopping.

Chapter 5 Conclusion

This research paper studied the impact of AI powered chatbots on the shopper experience in e-commerce. Chatbots are now used by many online shopping websites to help customers quickly, easily and at any time of the day. The goal of this study was to understand how these chatbots affect customer satisfaction, trust

and overall shopping experience.

The results showed that most shoppers are happy with chatbot services. Chatbots were rated high for speed and ease of use which means customers like how quickly they get answers and how easy it is to chat. However, some problems were also found. The personalization of chatbot responses was rated lower, showing that customers want replies that feel more specific to their needs. Trust was also good, but not perfect, meaning users still have some doubts when it comes to safety and accuracy.

The study also found that people who are comfortable with digital tools enjoy using chatbots more. On the other hand, users who are less tech-savvy may struggle with chatbot communication.

In short, AI chatbots are improving the e-commerce experience, but they are not perfect. Businesses should focus on making chatbots more human-like, smarter and more personal. With more updates and better design, chatbots can become a key part of successful online shopping.

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