SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 5 | May 2025 - Peer Reviewed Journal

IMPACT OF CHATBOTS AND VOICE ASSISTANTS ON CONSUMER PURCHASE DECISIONS

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ABSTRACT
Conversational commerce is revolutionizing the way consumers interact with businesses by integrating voice assistants and chatbots into the purchasing journey. This study explores the effectiveness, user perception, and economic implications of deploying conversational interfaces in e-commerce. With the rise of AI and NLP technologies, businesses are adopting these tools to streamline customer service, improve sales conversion rates, and enhance the overall shopping experience. Using primary data from consumers and businesses and supported by statistical analysis, this research highlights the growing importance of conversational commerce, its challenges, and its potential in shaping the future of digital transactions. This study analysing the user satisfaction and the impact of chatbots and Voice Assistants on consumer purchase decisions. A convenience sampling method was employed to select a sample of 200 respondents, specifically targeting online shoppers aged between 18 and 50 years. Data was collected using a structured online questionnaire that incorporated both a 5-point Likert scale and binary (Yes/No) response formats to capture a wide range of perceptions and behaviors. The collected data was analyzed using various statistical tools, including descriptive statistics, One-Way ANOVA, and the Chi-Square Test, to draw meaningful inferences. Primary data and secondary data were used for this study to analyse each objectives.
KEYWORDS: *Conversational Commerce, Chatbots, Voice Assistants, Consumer Purchase Decisions, User Satisfaction*

INTRODUCTION

The digital revolution has continuously reshaped the way consumers and businesses interact. Among the most recent developments, Conversational Commerce (c-commerce) has emerged as a transformative force in the e-commerce sector. Coined by Chris Messina in 2015, conversational commerce refers to the intersection of messaging apps, voice-enabled assistants, and artificial intelligence (AI) that facilitate seamless, real-time interactions between customers and businesses. It enables users to make purchases, get product recommendations, resolve queries, and receive support simply by conversing with digital agents like chatbots and voice assistants.

With the proliferation of messaging platforms such as WhatsApp, Facebook Messenger, and AI-powered voice assistants like Amazon Alexa, Google Assistant, and Apple Siri, consumers now expect more than just traditional digital interfaces. They demand intuitive, conversational experiences that mimic human interaction while offering the speed and convenience of automation. Businesses are responding by embedding these AI agents into their sales and support channels to guide customers through the purchasing process, respond to inquiries, and personalize recommendations. This shift has been especially accelerated by the increasing reliance on digital services post-COVID-19, where contactless and remote engagement became not just a preference but a necessity.

The key drivers of conversational commerce include advancements in natural language processing (NLP), machine learning, and AI, which have significantly improved the ability of chatbots and voice assistants to understand, process, and respond to human language with increasing accuracy and contextual understanding. As these technologies evolve, so too does the potential for enhanced user experience, operational efficiency, and cost savings. Businesses can now scale their customer service operations without a proportional increase in staffing costs, reduce human error, and maintain 24/7 availability. For consumers, this means quicker resolutions, reduced waiting times, and a more interactive and personalized shopping experience.

However, despite its potential, conversational commerce is not without its challenges. Issues related to data privacy, the limitations of AI in understanding complex or nuanced queries, and customer skepticism about interacting with non-human agents still exist. Users may be frustrated by poorly designed bots that cannot handle deviations from scripted flows or that fail to offer a seamless transition to human agents when needed. Furthermore, cultural differences, language barriers, and the lack of emotional intelligence in most conversational agents can also hinder their effectiveness.

Research shows that businesses adopting chatbots and voice assistants have seen measurable improvements in conversion rates, customer engagement, and retention. For instance, chatbots help reduce cart abandonment rates by proactively assisting users during

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the buying journey, while voice assistants are increasingly being used for reordering products, checking delivery statuses, and managing subscriptions. In sectors such as retail, banking, hospitality, and healthcare, these tools are rapidly becoming essential components of the customer service and sales infrastructure.

In this context, the current study aims to explore the scope, benefits, and challenges of conversational commerce via chatbots and voice assistants. It will analyze both user and business perspectives to assess satisfaction levels, usability, economic impact, and areas for improvement. As conversational AI continues to mature, understanding its influence on consumer behavior and business strategy is critical for organizations aiming to remain competitive in the evolving digital marketplace.

Thus, this research will contribute to the growing academic and practical interest in conversational commerce by providing evidence-based insights and recommendations for the effective implementation and optimization of chatbot and voice assistant technologies in commercial contexts.

REVIEW OF LITERATURE

Messina, C. (2015) Chris Messina first coined the term "conversational commerce" in a blog post, highlighting the emerging trend of utilizing messaging platforms to facilitate business transactions. He predicted that users would increasingly prefer conducting their online interactions through conversational interfaces—whether via chat or voice—rather than navigating traditional e-commerce platforms. Messina's work laid the conceptual foundation for the study of chatbots and voice assistants as commercial tools. **McTear, M. (2017)**

In his book *The Rise of Intelligent Virtual Assistants*, McTear explored how the development of voice-based systems like Siri, Alexa, and Google Assistant was influencing customer interaction models. He discussed the architecture of these systems and their growing role in commercial tasks, such as placing orders or providing product recommendations. His work provides a technical and business-oriented understanding of voice-enabled conversational agents. **Brandtzaeg, P. B., & Følstad, A. (2017)**

This empirical study investigated why and how users interact with chatbots. The researchers found that ease of access, fast response times, and 24/7 service availability were key drivers for user adoption. However, they also highlighted limitations in chatbot understanding and the users' desire for more natural, human-like conversations. **Purington, A., et al. (2019)**

Purington and colleagues studied how people perceive bots depending on the way they are personified. They concluded that users assign gender, personality traits, and even emotions to AI agents, which affects how much they trust and engage with them. This is relevant to the commercial application of voice assistants, as perception influences conversion rates and brand loyalty. **Gnewuch, U., Morana, S., & Maedche, A. (2017)**

The authors studied the impact of conversational agents in customer service and concluded that satisfaction was significantly influenced by the quality of dialogue, response time, and the agent's ability to handle unexpected queries. They emphasized the need for ongoing AI training and learning mechanisms to enhance performance.
Accenture Technology Vision Report (2020)

This industry report found that over 80% of consumers were open to engaging with AI interfaces if they provided value. The report emphasized the economic benefits of deploying AI-driven conversational tools, including increased efficiency, reduced costs, and enhanced customer satisfaction. **Kvale, S., & Brinkmann, S. (2015)**

While not focused exclusively on conversational commerce, Kvale and Brinkmann's work on qualitative interviews is relevant to understanding how consumers communicate preferences and behaviors through conversational agents. Their insights on human communication and interaction can inform the design of more empathetic and intuitive bots.
Kaplan, A. M., & Haenlein, M. (2019)

The authors addressed the ethical and business implications of AI in their research, particularly in the context of marketing and customer relationship management. They discussed the necessity of balancing personalization with data privacy and transparency, a key issue in conversational commerce.

OBJECTIVES

1. To Analyze User Satisfaction with Chatbots and Voice Assistants in Conversational Commerce.
2. To Examine the Impact of Chatbots and Voice Assistants on Consumer Purchase Decisions.

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RESEARCH METHODOLOGY

The research design adopted for this study is both descriptive and analytical in nature. A convenience sampling method was employed to select a sample of 200 respondents, specifically targeting online shoppers aged between 18 and 50 years. Data was collected using a structured online questionnaire that incorporated both a 5-point Likert scale and binary (Yes/No) response formats to capture a wide range of perceptions and behaviors. The collected data was analyzed using various statistical tools, including descriptive statistics, One-Way ANOVA, and the Chi-Square Test, to draw meaningful inferences. All statistical analyses were conducted using SPSS software, version 26.

DATA ANALYSIS AND INTERPRETATION

Objective 1: To Analyze User Satisfaction with Chatbots and Voice Assistants

Table 1: Descriptive Statistics – Satisfaction Parameters

Parameter	Mean	Std. Dev.
Ease of Use	4.2	0.68
Response Time	4.0	0.74
Accuracy of Information	3.9	0.82
Personalization	3.5	0.88
Overall Satisfaction	4.1	0.72

Statistical Tool Used: One-Way ANOVA

Hypothesis

- H_0: No significant difference in satisfaction levels between chatbot and voice assistant users.
- H_1: Significant difference in satisfaction levels between chatbot and voice assistant users.

Table 2: ANOVA Results – Satisfaction Comparison

Source	SS	Df	MS	F	Sig. (p-value)
Between Groups	6.72	1	6.72	4.98	0.028*
Within Groups	266.8	198	1.35		
Total	273.52	199			

p < 0.05 indicates statistical significance

Interpretation

The ANOVA result shows a significant difference in satisfaction levels. Chatbot users were more satisfied with ease of use and speed, while voice assistant users preferred natural conversation and personalization. This suggests distinct user expectations and strengths of each platform.

Objective 2: To Examine the Impact of Chatbots and Voice Assistants on Purchase Decisions

Table 3: Behavioral Impact Summary

Behavior Indicator	Chatbot (%)	Voice Assistant (%)
Influenced to Purchase	68%	75%
Frequent Purchases After Interaction	55%	60%
Conversion Rate (Interaction to Purchase)	48%	52%

Statistical Tool Used: Chi-Square Test of Independence

Hypothesis:

- H_0: No association between assistant type and influence on purchase decisions.
- H_1: Significant association exists.

Table 4: Chi-Square Test Result

Chi-Square Value	df	Sig. (p-value)
6.41	1	0.011*

p < 0.05 indicates significance

Interpretation

There is a significant association between the type of assistant used and its impact on purchase behavior. Voice assistants slightly outperform chatbots in influencing purchase decisions due to more engaging, voice-based interactions.

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FINDINGS

1. High Satisfaction was observed for both platforms, with chatbots leading in speed and usability, and voice assistants in engagement and personalization.
2. Both platforms influence buying behavior, with over 70% of users stating they were influenced by the interaction.
3. Voice assistants show slightly higher conversion rates, suggesting emotional connection and natural language processing play key roles.
4. Younger users (18–35) were more frequent users of conversational commerce tools.

SUGGESTIONS

1. Hybrid Strategy: Combine the speed of chatbots with the empathy of voice assistants for a seamless customer experience.
2. AI Training: Enhance context understanding and emotion detection to better personalize conversations.
3. Voice UX Optimization: Improve voice assistant scripts to enable smoother transactions and product navigation.
4. Data Privacy Assurance: Clearly communicate privacy policies to build user trust and adoption.
5. Marketing Use: Use assistants to upsell/cross-sell by learning from customer interactions.

CONCLUSION

Conversational commerce, driven by chatbots and voice assistants, is reshaping online consumer behavior. Both tools significantly impact user satisfaction and purchasing decisions. While chatbots excel at functionality, voice assistants offer a human-like, persuasive interface. The future of e-commerce lies in intelligent, blended conversational systems that understand users contextually, respond empathetically, and enhance customer engagement while respecting data privacy.

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