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The Mediating Role of Perceived Enjoyment and Social Presence in Chatbot Commerce: Emphasizing the Effect of Anthropomorphism on Generation Z Consumers' Purchase Intention

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Abstract

The widespread adoption of intelligent technologies in marketing and sales processes has significantly transformed the way businesses interact with customers. Among these technologies, chatbots have emerged as one of the most important artificial intelligence-based tools, playing an increasingly prominent role in customer service delivery, guidance, and support throughout the purchasing journey. One of the key approaches in chatbot design and implementation is anthropomorphism, whereby chatbots are designed to exhibit human-like characteristics in terms of appearance, language, tone, and behavior. In the contemporary digital environment, the emergence of conversational commerce has established a new paradigm in brand-customer interactions, where conversations increasingly replace traditional website-based search activities. However, the success of this technology largely depends on how customers perceive their interactions with artificial intelligence systems. One of the most effective strategies for enhancing these interactions is chatbot anthropomorphism, which facilitates distinctive customer experiences by incorporating human-like attributes. In this context, Generation Z, as a digitally native cohort that conducts a substantial portion of its online shopping activities through messaging platforms, is particularly sensitive to the qualitative characteristics of chatbots. Despite the importance of this issue, a significant research gap remains regarding how anthropomorphism translates into purchasing behavior through psychological mechanisms such as perceived enjoyment and social presence. Therefore, this study aims to investigate the mediating role of perceived enjoyment and social presence in chatbot commerce, with a particular emphasis on the effect of anthropomorphism on the purchase intention of Generation Z consumers. This study is applied in terms of purpose and employs a survey-based research design for data collection. The statistical population consisted of active users of intelligent chatbot platforms in 2026. Given the unlimited population size, a sample of 190 respondents was determined using Cochran's formula. Descriptive statistics and demographic data analysis were conducted using SPSS version 24, while inferential analyses were performed through Structural Equation Modeling (SEM) using SmartPLS 3 software. Data were collected using standardized questionnaires. The findings revealed that chatbot anthropomorphism plays a critical role in shaping positive perceptions among Generation Z consumers and significantly enhances purchase intention through two complementary pathways: perceived enjoyment and social presence.

Keywords: Anthropomorphism, Generation Z Consumers' Purchase Intention, Perceived Enjoyment, Social Presence, Chatbot Commerce.



1. Introduction

The rapid advancement of digital technologies has fundamentally transformed the landscape of marketing, retailing, and consumer–brand interactions. In recent years, organizations have increasingly relied on artificial intelligence (AI)-driven technologies to enhance customer experiences, optimize communication processes, and improve commercial performance. Among these technologies, chatbots have emerged as one of the most influential innovations, enabling businesses to engage with customers through automated, interactive, and personalized conversations. The roots of chatbot technology can be traced to developments in natural language processing and computational linguistics, which sought to create systems capable of simulating human conversation and understanding user intentions (Jones, 1994). Contemporary advances in machine learning and AI have significantly enhanced the sophistication of conversational agents, allowing them to provide more natural, efficient, and context-aware interactions across a variety of domains, including healthcare, education, customer service, and electronic commerce (King, 2023; Solanki et al., 2023). As a result, conversational commerce has emerged as a new paradigm in which consumers interact with brands through dialogue rather than traditional website navigation, thereby reshaping the customer journey and redefining online shopping experiences (Nouri, 2024).

The growing popularity of chatbots is closely associated with their ability to provide continuous service availability, instant responses, and personalized recommendations. Research indicates that consumers increasingly perceive chatbot-assisted interactions as convenient and efficient, particularly in online retail environments where rapid access to information can significantly influence purchase decisions (Deng & Yu, 2023; Sindhu & Bharti, 2023). Moreover, chatbots have become a critical component of digital transformation strategies because they reduce operational costs while simultaneously enhancing customer engagement and satisfaction (Kuhail et al., 2023; Nouri, 2024). Despite these advantages, the effectiveness of chatbot commerce depends not only on technological functionality but also on how users psychologically perceive and evaluate their interactions with artificial intelligence systems. Consumers frequently compare chatbot interactions with human-to-human communication experiences and develop expectations regarding responsiveness, empathy, and social connectedness. Consequently, understanding the psychological mechanisms underlying chatbot acceptance and usage has become a significant area of inquiry in marketing and consumer behavior research (Han, 2021; Sindhu & Bharti, 2023).

One of the most prominent concepts in this context is anthropomorphism, which refers to the attribution of human characteristics, emotions, intentions, or behaviors to nonhuman entities. Anthropomorphism represents a fundamental cognitive tendency through which individuals interpret unfamiliar technologies in human-like terms, thereby facilitating understanding and emotional connection (Epley et al., 2008). In digital environments, anthropomorphism is often operationalized through human-like appearances, conversational styles, personalities, emotions, names, avatars, and communication patterns embedded within technological interfaces. Prior research suggests that anthropomorphic design can increase user trust, emotional attachment, engagement, and perceived authenticity by reducing the psychological distance between users and technological systems (Gong, 2008; Wöfl et al., 2019). As artificial intelligence systems become more integrated into everyday life, anthropomorphism has emerged as a key design strategy for enhancing user experiences and encouraging favorable behavioral responses toward technology-based services (Hemmat Esfeh, 2025; Khademi Gerashi & Mohammadian, 2023).

Within the context of chatbot commerce, anthropomorphism plays a particularly important role because conversational interactions naturally evoke social expectations. Consumers interacting with a chatbot often evaluate whether the system demonstrates characteristics resembling those of a human communication partner. When chatbots exhibit human-like attributes such as empathy, friendliness, humor, responsiveness, and personalized communication, users tend to perceive them more positively and develop stronger intentions to continue interacting with them (Han, 2021; Rhim et al., 2022). Studies have demonstrated that anthropomorphic chatbot features can positively influence consumer attitudes, trust, satisfaction, and purchase-related outcomes by making interactions feel more natural and socially meaningful (Gong, 2008; Wöfl et al., 2019).



Furthermore, the humanization of chatbots has been found to improve interaction quality and enhance users' overall perceptions of AI-mediated communication experiences (Ebadi & Amini, 2022; Rhim et al., 2022).

A key mechanism through which anthropomorphism exerts its influence is social presence. Social presence refers to the degree to which an individual perceives another entity as socially present, real, and involved during an interaction. Originally developed within communication research, the concept has become highly relevant in online and technology-mediated environments where users seek interpersonal cues despite the absence of physical interaction (Hassanein & Head, 2007; Oh et al., 2018). In electronic commerce settings, social presence contributes to trust formation, emotional engagement, and positive evaluations of online platforms. When consumers perceive a strong sense of social presence, they are more likely to feel connected, understood, and supported during their interactions with digital systems (Lu et al., 2016; Ogonowski et al., 2014). Research further suggests that anthropomorphic features enhance perceptions of social presence because human-like design elements increase the impression that users are interacting with a socially responsive partner rather than a purely mechanical system (Ebadi & Amini, 2022; Hassanein & Head, 2007).

Another critical psychological factor in online consumer behavior is perceived enjoyment. Perceived enjoyment refers to the extent to which engaging in a particular activity is experienced as pleasurable, entertaining, and intrinsically rewarding, independent of its functional outcomes. Consumer behavior theories suggest that enjoyment plays a crucial role in shaping attitudes and behavioral intentions in digital environments, particularly when users voluntarily interact with technological systems (Bedi et al., 2017; Xu et al., 2020). In online shopping contexts, enjoyable experiences encourage consumers to spend more time interacting with platforms, increase engagement levels, and strengthen purchase intentions. The entertainment value associated with interactive technologies can therefore become a significant determinant of customer loyalty and commercial success (Bedi et al., 2017; Wright et al., 2019). Within chatbot commerce, anthropomorphic characteristics may enhance enjoyment by making interactions more conversational, engaging, and emotionally satisfying, thereby improving users' overall perceptions of the shopping experience (Han, 2021; Rhim et al., 2022).

The relationship between social presence, perceived enjoyment, and purchase intention has attracted growing scholarly attention. Existing research demonstrates that social presence contributes to positive emotional experiences by creating a sense of companionship and reducing feelings of isolation during online interactions (Lu et al., 2016; Oh et al., 2018). Similarly, enjoyable interactions have consistently been linked to stronger behavioral intentions, including willingness to purchase, revisit, and recommend online platforms (Bedi et al., 2017; Xu et al., 2020). Studies in electronic commerce environments further indicate that social presence and enjoyment can function as mediating mechanisms through which technological and interface-related characteristics influence consumer decision-making processes (Al-Adwan et al., 2022; Majali et al., 2022). However, despite the increasing popularity of chatbot commerce, limited empirical evidence exists regarding the simultaneous mediating roles of perceived enjoyment and social presence in the relationship between chatbot anthropomorphism and purchase intention.

This issue becomes particularly important when considering Generation Z consumers. Generation Z represents the first truly digital-native generation, having grown up in an environment characterized by continuous exposure to internet technologies, social media platforms, mobile communication, and digital ecosystems. Consequently, members of this generation demonstrate distinctive consumption patterns, communication preferences, and expectations regarding technological interactions (Pradhan et al., 2023; Rosli et al., 2023). Research suggests that Generation Z consumers are highly receptive to innovative digital technologies but are also more demanding regarding personalization, authenticity, and engagement quality (Al Ali & Shirkhodai, 2025; Hosseini Fard, 2025). Their purchasing decisions are strongly influenced by digital experiences, social interactions, and emotional connections established through online platforms. Furthermore, Generation Z consumers frequently use messaging applications and conversational interfaces as part of their daily routines, making chatbot commerce particularly relevant for understanding their purchasing behavior (Pradhan et al., 2023; Rosli et al., 2023).

The increasing integration of anthropomorphic AI systems into commercial environments has generated significant academic and managerial interest. From a theoretical perspective, understanding how anthropomorphism influences purchase intention contributes to the broader literature on technology acceptance, consumer psychology, and human-computer interaction. Previous studies have examined the effects of anthropomorphism on trust, engagement, and attitudes; however, the



underlying psychological pathways connecting anthropomorphic chatbot characteristics to actual purchase intentions remain insufficiently explored (Han, 2021; Khademi Gerashi & Mohammadian, 2023). Moreover, while social presence and perceived enjoyment have individually been identified as important predictors of consumer behavior, their combined mediating roles within chatbot commerce have received relatively limited attention, particularly among Generation Z consumers (Berakon et al., 2023; Sindhu & Bharti, 2023). This gap highlights the need for a comprehensive framework that explains how human-like chatbot characteristics translate into favorable purchasing outcomes through users' social and emotional experiences.

From a practical standpoint, identifying the mechanisms through which anthropomorphic chatbots influence consumer purchase intentions can help organizations design more effective conversational commerce strategies. Businesses increasingly invest in AI-powered customer interaction systems, yet many struggle to maximize user engagement and conversion rates. Understanding the roles of social presence and perceived enjoyment may provide valuable insights for designing chatbot interfaces that foster stronger customer relationships and improve commercial performance (Majali et al., 2022; Nouri, 2024). Such insights are particularly important in competitive digital markets where customer experience has become a key differentiator and where Generation Z represents one of the most influential consumer segments (Al Ali & Shirkhodai, 2025; Hosseini Fard, 2025).

Therefore, the present study aims to investigate the mediating roles of perceived enjoyment and social presence in chatbot commerce, with particular emphasis on the effect of anthropomorphism on the purchase intention of Generation Z consumers.

2. Methods and Materials

The present study is descriptive–analytical in nature and applied in terms of its objective. Since the data were collected through a review of the relevant literature and supported by questionnaire-based data collection, the study can also be classified as field research. The statistical population consisted of active users of intelligent chatbot platforms in 2026. Given the unlimited size of the population, a sample of 190 respondents was determined using Cochran's formula. Descriptive statistics and demographic data analysis, including the extraction of central tendency indices, were conducted using SPSS version 24. Inferential statistical analyses were performed through Structural Equation Modeling (SEM) using SmartPLS 3 software.

To conduct the study, a questionnaire comprising 13 closed-ended items based on a five-point Likert scale was distributed among users. Content validity was assessed and confirmed through expert evaluation. Construct validity was examined using confirmatory factor loading analysis, while reliability was assessed and verified using Cronbach's alpha and Composite Reliability (CR) coefficients. After data collection and classification, the data were analyzed using SPSS version 24 and SmartPLS 3 software.

3. Findings and Results

The demographic results showed that, of the 190 respondents, 90 were male (47.7%) and 100 were female (52.3%). In terms of educational level, 22 respondents had a diploma (14.7%), 35 had an associate degree (17.1%), 105 had a bachelor's degree (55.0%), 18 had a master's degree (10.7%), and 10 had a doctoral degree (2.3%). Regarding age, 75 respondents were under 25 years old (39.47%), 50 were between 25 and 35 years old (26.32%), 40 were between 36 and 45 years old (21.05%), and 25 were over 45 years old (13.16%). In relation to daily internet use, 10 respondents reported using the internet for less than 2 hours per day (4.8%), 35 for 2 to 4 hours (21.8%), 120 for 5 to 6 hours (50.7%), and 25 for more than 6 hours per day (12.8%).

Table 1. Factor Loadings of Questionnaire Items in the Measurement Model

Items	Anthropomorphism	Social Presence	Perceived Enjoyment	Purchase Intention
q1	0.805	–	–	–
q2	0.837	–	–	–
q3	0.847	–	–	–
q4	–	0.828	–	–
q5	–	0.866	–	–
q6	–	0.846	–	–
q7	–	–	0.820	–



q8	-	-	0.841	-
q9	-	-	0.843	-
q10	-	-	0.822	-
q11	-	-	-	0.839
q12	-	-	-	0.807
q13	-	-	-	0.854

The homogeneity test was conducted through Confirmatory Factor Analysis (CFA) of the research variables' measurement items. Accordingly, the factor loadings of each questionnaire item are presented in Table 1.

All factor loadings exceeded the threshold value of 0.40; therefore, none of the questionnaire items were removed from the measurement model. Since all item loadings were greater than 0.40, the questionnaire demonstrated satisfactory validity.

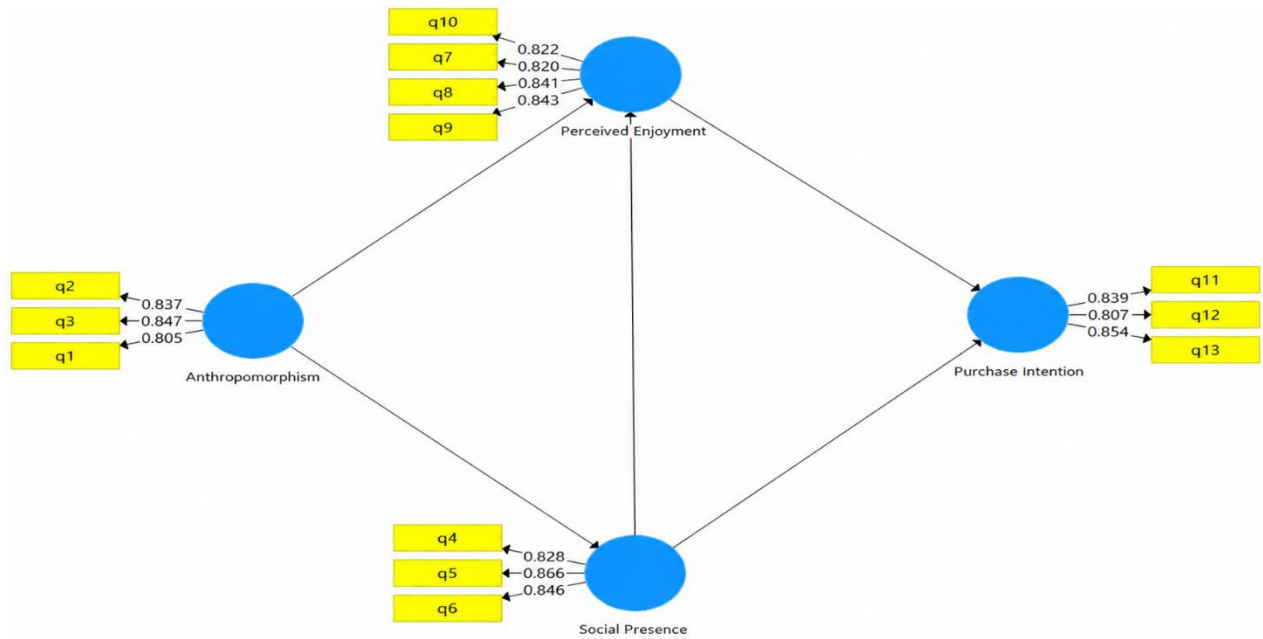


Figure 1. Factor Loading Diagram of the Measurement Model

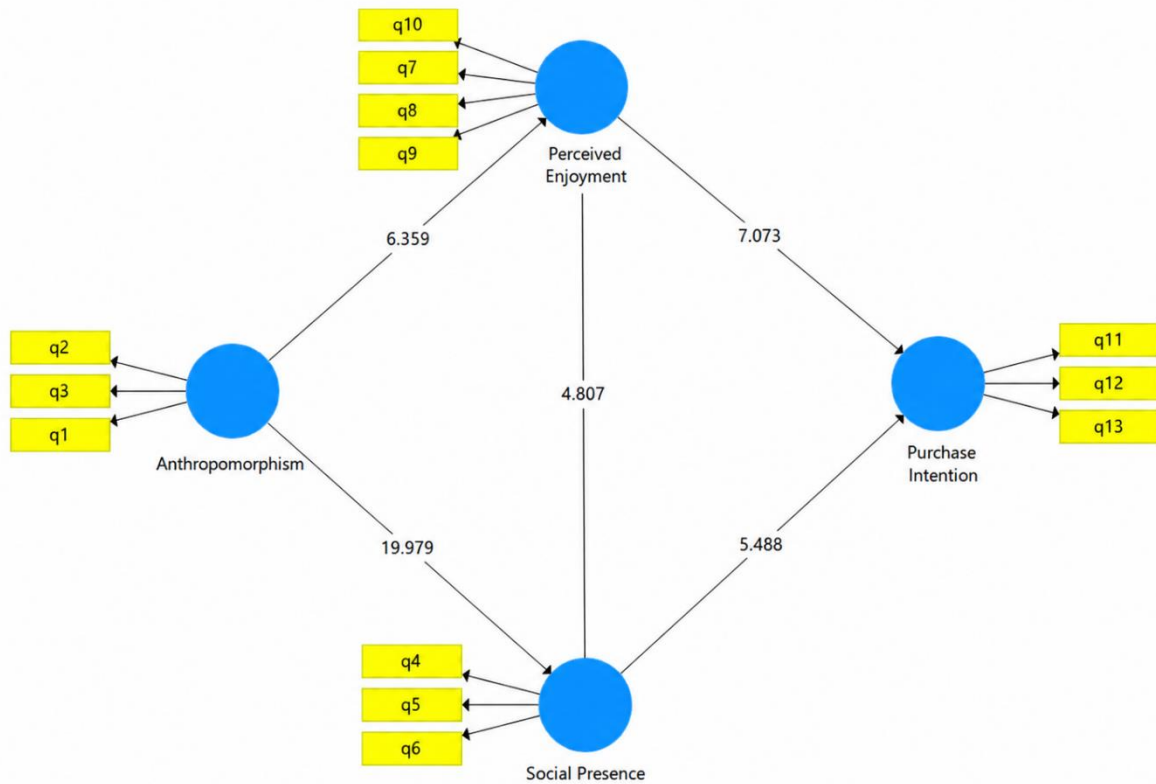


Figure 2. T-Values Diagram of the Measurement Model

Convergent validity was assessed through the Average Variance Extracted (AVE) and the comparison between Composite Reliability (CR) and AVE values. Discriminant validity was evaluated using the Fornell–Larcker criterion.

Table 2. Average Variance Extracted (AVE) Values

Variables	AVE
Anthropomorphism	0.689
Social Presence	0.717
Purchase Intention	0.695
Perceived Enjoyment	0.691

The AVE values for all constructs exceeded the recommended threshold of 0.50, confirming the convergent validity of the measurement model. This indicates that the items measuring each construct adequately converge and are sufficiently correlated with one another.

Regarding discriminant validity, the Fornell–Larcker criterion was examined. According to Henseler et al. (2009), this criterion evaluates the absence of critical multicollinearity among construct indicators. The results are presented in Table 3.

Table 3. Discriminant Validity Assessment Based on the Fornell–Larcker Criterion

Items	Anthropomorphism	Social Presence	Perceived Enjoyment	Purchase Intention
q1	0.805	0.714	0.712	0.719
q2	0.837	0.729	0.705	0.727
q3	0.847	0.748	0.695	0.703
q4	0.719	0.828	0.736	0.697
q5	0.781	0.866	0.749	0.755
q6	0.777	0.846	0.751	0.736
q7	0.736	0.715	0.820	0.766
q8	0.721	0.706	0.841	0.711
q9	0.746	0.734	0.843	0.762
q10	0.699	0.690	0.822	0.678
q11	0.684	0.689	0.670	0.839
q12	0.702	0.713	0.697	0.807



q13	0.710	0.716	0.706	0.854
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The values located on the principal diagonal, representing the square roots of the AVE values, were greater than the corresponding inter-construct correlations. Therefore, discriminant validity was established, indicating that the indicators of each construct are empirically distinct from those of the other constructs and that no problematic multicollinearity exists among the variables.

The reliability of the measurement model was assessed using Cronbach's alpha and Composite Reliability (CR).

Table 4. Reliability Assessment of the Measurement Model

Variables	Cronbach's Alpha	Composite Reliability
Anthropomorphism	0.774	0.869
Social Presence	0.803	0.884
Purchase Intention	0.780	0.872
Perceived Enjoyment	0.851	0.900

The Cronbach's alpha coefficients for all research variables exceeded the recommended threshold of 0.70, confirming the internal consistency of the measurement scales. Likewise, the composite reliability values for all four constructs were above the acceptable threshold of 0.50, indicating satisfactory reliability of the measurement model.

The structural model was evaluated using the t-statistic. Path coefficients are considered statistically significant at the 95% confidence level when the t-value exceeds 1.96 (Al-Nuaimi et al., 2021). The results are presented in Table 5.

Table 5. Results of Hypothesis Testing

Path	t-Statistic	Path Coefficient	Result
Anthropomorphism → Social Presence	19.97	0.325	Supported
Anthropomorphism → Perceived Enjoyment	6.35	0.256	Supported
Social Presence → Purchase Intention	5.48	0.187	Supported
Social Presence → Perceived Enjoyment	4.80	0.153	Supported
Perceived Enjoyment → Purchase Intention	7.07	0.309	Supported
Mediating Role of Perceived Enjoyment in the Relationship Between Anthropomorphism and Purchase Intention	13.58	0.733	Supported
Mediating Role of Social Presence in the Relationship Between Anthropomorphism and Purchase Intention	4.47	0.309	Supported
Mediating Role of Perceived Enjoyment in the Relationship Between Social Presence and Purchase Intention	4.04	0.187	Supported

The results indicate that all direct and indirect relationships proposed in the conceptual model were statistically significant, as all t-values exceeded the critical value of 1.96. Anthropomorphism exerted a significant positive effect on both social presence and perceived enjoyment. Furthermore, social presence positively influenced both perceived enjoyment and purchase intention, while perceived enjoyment had a significant positive impact on purchase intention. The mediation analyses further confirmed that perceived enjoyment and social presence play significant mediating roles in translating anthropomorphic chatbot characteristics into higher purchase intentions among Generation Z consumers. These findings support all research hypotheses and validate the proposed structural model.

4. Discussion and Conclusion

The findings of this study provide strong empirical evidence regarding the role of anthropomorphism in shaping Generation Z consumers' purchase intentions within the context of chatbot commerce. The results demonstrated that anthropomorphism significantly and positively affects social presence and perceived enjoyment, while both social presence and perceived enjoyment significantly enhance purchase intention. Furthermore, the mediating analyses revealed that perceived enjoyment and social presence serve as important psychological mechanisms through which anthropomorphic chatbot characteristics influence consumers' purchasing decisions. Collectively, these findings confirm that consumers do not merely evaluate chatbots based on their functional capabilities; rather, they also respond to the extent to which these technologies resemble human interaction patterns and evoke social and emotional experiences. This outcome highlights the increasing importance of



human-centered artificial intelligence design in contemporary digital commerce environments and supports the notion that the effectiveness of conversational commerce depends on both technological efficiency and experiential quality.

The first major finding indicated that anthropomorphism has a significant positive effect on social presence. This result suggests that when chatbots exhibit human-like characteristics through language style, responsiveness, conversational tone, personality cues, or emotional expressions, users are more likely to perceive them as socially present communication partners. This finding is consistent with the theoretical perspective that anthropomorphism reduces psychological distance between humans and technological systems by encouraging users to apply social schemas to their interactions with technology (Epley et al., 2008). The result is also aligned with previous studies showing that human-like digital agents increase perceptions of social connectedness and interpersonal engagement (Gong, 2008; Hassanein & Head, 2007). Likewise, the findings support research demonstrating that humanization strategies in chatbot design enhance users' perceptions of social presence and improve interaction quality (Ebadi & Amini, 2022; Rhim et al., 2022). Generation Z consumers, who are accustomed to highly interactive digital environments, appear particularly sensitive to social cues embedded within technological interfaces. Consequently, anthropomorphic design features create a stronger impression of interacting with a socially responsive partner rather than an impersonal automated system. This result is also compatible with systematic reviews of chatbot interaction research emphasizing the importance of human-like communication characteristics in fostering meaningful user engagement (Deng & Yu, 2023; Kuhail et al., 2023).

The second finding revealed that anthropomorphism significantly increases perceived enjoyment. This result indicates that consumers experience greater pleasure and intrinsic satisfaction when interacting with chatbots that possess human-like characteristics. Humanized communication styles may make interactions more entertaining, engaging, and emotionally rewarding, thereby enhancing the overall quality of the user experience. This finding supports previous research suggesting that anthropomorphic interfaces improve consumers' affective responses to technology and contribute to more enjoyable online experiences (Han, 2021; Wölfl et al., 2019). It is also consistent with studies emphasizing that enjoyable digital experiences are shaped not only by functionality but also by emotional engagement and interaction quality (Bedi et al., 2017; Xu et al., 2020). The results further support the argument that consumers derive enjoyment when technologies mimic familiar social interaction patterns, thereby reducing uncertainty and increasing feelings of comfort during communication (Epley et al., 2008; Gong, 2008). In the context of Generation Z, this relationship may be particularly strong because younger consumers often value interactive and entertaining digital experiences as much as utilitarian benefits. Prior studies investigating technology acceptance among Generation Z have similarly emphasized the importance of experiential and hedonic factors in shaping favorable attitudes toward emerging technologies (Berakon et al., 2023; Rosli et al., 2023).

Another important finding demonstrated that social presence has a significant positive effect on purchase intention. This result suggests that when consumers perceive a stronger sense of human warmth, interpersonal connection, and social interaction during chatbot communication, they become more willing to engage in purchasing behavior. The finding supports social presence theory, which argues that perceptions of interpersonal connectedness reduce uncertainty and enhance trust in online environments (Hassanein & Head, 2007; Oh et al., 2018). The result is also consistent with prior empirical studies showing that social presence positively influences consumer trust, attitudes, and purchase intentions in electronic commerce contexts (Lu et al., 2016; Ogonowski et al., 2014). Social presence appears to be particularly important in digital environments where physical interaction is absent and consumers must rely on psychological cues to evaluate the credibility and reliability of service providers. By creating a stronger sense of interpersonal communication, anthropomorphic chatbots may compensate for the lack of face-to-face interaction and thereby facilitate consumer decision-making. This interpretation is also supported by studies indicating that online consumers are more likely to engage with platforms that create perceptions of human interaction and emotional support (Al-Adwan et al., 2022; Majali et al., 2022).

The findings additionally revealed that social presence significantly enhances perceived enjoyment. This relationship suggests that consumers derive greater pleasure from interactions that feel socially meaningful and engaging. When users perceive the presence of a responsive and socially aware communication partner, they are more likely to experience positive emotions and intrinsic satisfaction during the interaction process. This result is consistent with the literature emphasizing that



social presence contributes to emotional engagement and creates more immersive online experiences (Hassanein & Head, 2007; Oh et al., 2018). Furthermore, previous research has demonstrated that social interaction and relational cues increase enjoyment in digital environments by satisfying individuals' social and psychological needs (Ebadi & Amini, 2022; Lu et al., 2016). The finding reinforces the notion that social and hedonic experiences are closely interconnected within conversational commerce. Consumers do not simply seek information from chatbots; they also seek engaging experiences that make the shopping process more pleasant and rewarding.

The positive effect of perceived enjoyment on purchase intention represents another important contribution of this study. The findings indicate that consumers who enjoy interacting with chatbot systems are significantly more likely to develop intentions to purchase products or services. This result aligns with extensive research in online consumer behavior suggesting that enjoyable experiences enhance user engagement, platform loyalty, and purchase-related outcomes (Bedi et al., 2017; Xu et al., 2020). Enjoyment functions as a powerful intrinsic motivator that encourages consumers to continue interacting with digital platforms and develop favorable behavioral intentions. In chatbot commerce environments, enjoyable interactions may increase consumers' willingness to explore product information, engage in extended conversations, and ultimately make purchasing decisions. The result also supports previous studies showing that emotional experiences can be as influential as cognitive evaluations in determining online consumer behavior (Al-Adwan et al., 2022; Wright et al., 2019). For Generation Z consumers, who often prioritize engaging and entertaining digital experiences, enjoyment appears to be a particularly influential determinant of purchase intention.

Perhaps the most significant findings of the study relate to the mediating roles of perceived enjoyment and social presence. The results confirmed that perceived enjoyment mediates the relationship between anthropomorphism and purchase intention. This finding suggests that anthropomorphic chatbot characteristics do not directly translate into purchasing behavior; rather, they first enhance consumers' enjoyment of the interaction, which subsequently increases their willingness to purchase. This mechanism provides important insight into the psychological processes underlying chatbot effectiveness. The finding is consistent with studies emphasizing the importance of affective experiences in technology acceptance and consumer decision-making (Bedi et al., 2017; Han, 2021). It also supports the argument that anthropomorphic features create value by generating positive emotional responses rather than merely improving functional performance (Hemmat Esfeh, 2025; Khademi Gerashi & Mohammadian, 2023).

Similarly, the mediating role of social presence in the relationship between anthropomorphism and purchase intention was supported. This result indicates that anthropomorphic chatbot characteristics foster purchase intentions by increasing perceptions of social interaction and interpersonal connection. The finding aligns with prior research demonstrating that social presence functions as a critical mechanism linking interface design characteristics to behavioral outcomes in online environments (Hassanein & Head, 2007; Lu et al., 2016). Anthropomorphic design elements appear to enhance purchase intentions because they create an interaction experience that feels more human, trustworthy, and socially meaningful. This outcome further supports studies emphasizing the importance of social cues in reducing uncertainty and increasing confidence in online transactions (Al-Adwan et al., 2022; Majali et al., 2022).

Finally, the results confirmed the mediating role of perceived enjoyment in the relationship between social presence and purchase intention. This finding suggests that social presence contributes to purchasing behavior partly because it enhances consumers' enjoyment of the interaction. In other words, socially engaging chatbot experiences increase purchase intentions not only through trust and connectedness but also by making the interaction process more pleasurable. This finding contributes to the growing literature highlighting the interdependence of social and emotional factors in digital commerce environments (Lu et al., 2016; Oh et al., 2018). The result further demonstrates that successful conversational commerce systems must simultaneously address consumers' social and hedonic needs if they are to maximize commercial outcomes. Taken together, the findings of the present study support a comprehensive model in which anthropomorphism enhances social presence and perceived enjoyment, which subsequently strengthen purchase intentions among Generation Z consumers. The results are consistent with prior studies examining chatbot effectiveness, technology acceptance, online consumer behavior, and social



commerce while extending existing knowledge by integrating these constructs into a unified explanatory framework (Al Ali & Shirkhodai, 2025; Hosseini Fard, 2025; Nouri, 2024; Pradhan et al., 2023; Sindhu & Bharti, 2023).

One limitation of the present study concerns its reliance on self-reported data, which may be subject to common method bias and social desirability effects. Additionally, the sample was restricted to users of intelligent chatbot platforms and focused specifically on Generation Z consumers, potentially limiting the generalizability of the findings to other age groups and cultural contexts. The cross-sectional nature of the research design also restricts the ability to establish causal relationships among the studied variables. Furthermore, the study examined a limited set of psychological mediators and did not account for other potentially influential factors such as trust, perceived risk, satisfaction, or brand attachment.

Future research should investigate the proposed model using longitudinal and experimental research designs to establish stronger causal inferences. Researchers may also examine the moderating effects of demographic variables, cultural characteristics, and product categories on the relationships identified in this study. Additional studies could incorporate other psychological constructs such as trust, perceived value, emotional attachment, and customer engagement to develop a more comprehensive understanding of chatbot commerce. Comparative studies involving different generations and international contexts would also contribute to extending the external validity of the findings.

From a practical perspective, organizations should prioritize the development of chatbot systems that exhibit human-like communication styles, personalized interactions, and socially engaging features. Businesses can improve purchase intentions by designing conversational experiences that are enjoyable, interactive, and emotionally appealing. Marketing managers should invest in chatbot personalization strategies, natural language capabilities, and user-centered interface design to strengthen consumers' perceptions of social presence and enjoyment. Continuous evaluation of chatbot performance and customer feedback can further help organizations optimize conversational commerce strategies and create more meaningful digital shopping experiences.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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