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When AI Meets Consumer Behavior: Exploring How Human-Like AI Chatbots Shape Trust in Consumer Purchase Intentions

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ABSTRACT: In recent times, the technology of artificial intelligence (AI) has been evolved in almost all domains and has significantly benefited customer lives. In fact, consumer-facing technologies have become the most popular and in-demand services. Given the increasing admiration of AI chatbots as a means to promote and support the positive consumer experience, understanding how AI chatbots influence consumer behavior is critical for both marketeers and researchers. However, despite numerous studies being explored on AI technology, there is an absence of comprehensive research examining AI chatbot interaction quality in shaping trust and, consequently, consumer purchase intention. Our research aims to present an empirical investigation how human-like AI chatbot engagements influence consumers' trust and purchase intentions, whilst focusing on mediating role of humanization. Our study employs SEM (Structural Equation Modeling) using Smart-PLS 4 analyzing data collected from 366 respondents obtained through a self-administered questionnaire. Henceforth, our results show that the quality of interaction with AI chatbot improves trust and has a positive effect on consumer purchase intentions. Furthermore, this study provides significant insights into the behavioral implications of AI chatbots, whereas human-like characteristic enhances the effect of trust on purchase intention. This also contributes to the understanding of AI in marketing by proposing a novel perspective to appreciate humanization in AI-driven consumer interactions.

KEYWORDS: AI Chatbots, Consumer Behavior, Trust in AI, Purchase Intentions, Humanization

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Introduction

In recent times, the technology of artificial intelligence (AI) has been evolved in almost all domains and has significantly benefited customer lives (Cheng et al., 2023; Zakaria & Doheir, 2024). Earlier, customer relations were a direct encounter or voice associated with customers' issues, which were resolved by human intermediaries (Zhu et al., 2023). However, with the penetration of digital technologies, especially with the rapid increase in e-commerce, the way that businesses communicate with buyers has greatly changed (Chen et al., 2023). Customers of today want a real-time response, and an omnichannel experience puts pressure on organizations to look for new customer service approaches ((Nicolescu & Tudorache, 2022; Tamara et al., 2023). One of these spheres relates to the integration of artificial intelligence technologies that have become prominent enablers in improving the understanding of customers and optimizing the performance of various activities (Bauer et al., 2023; Loh, 2024).

By these AI developments, chatbots have emerged as the most prominent and serving as the foundation of modern-day customer interaction management (Lozić & Štular, 2023). AI chatbots incorporate natural language processing, machine learning,

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and automation to communicate with customers, mimic human conversations, and offer support at all times (TIger NIlson & Bengtsson, 2024). They are used in fields as diverse as retail, banking, healthcare, and hospitality, as they handle questions, assist in making purchase-related decisions, and solve problems at an unprecedented pace and with absolute accuracy (Leong, 2024). In recent years, people have embraced the use of chatbots all over the world. Forecasts also suggest that the AI chatbot market will grow even more in the next decade (Ryan et al., 2024).

Customer service continues to be an essential aspect that elaborately determines consumer choices through its impacts on loyalty, trust and satisfaction (Shahzad et al., 2024; Sidlauskiene et al., 2023). Pervasive competition requires customer differentiation, while one negative experience hurls customers away (Kelly et al., 2022). Studies by other authors also prove that improving positive customer service experiences positively affects consumer trust, resulting in increased retention and long-term revenue for the firm (Lozić & Štular, 2023). As a result, organizations are finding it important to deploy advanced AI chatbots to discover value-based, efficient, and optimized customer engagement experiences to meet consumers' expectations (Li et al., 2023).

There has been growing research, academic and industrial attention on AI chatbots, especially concerning their conversational skills (Rafiq et al., 2022). These aspects clearly define human-like aspects to support perceptions by consumers of AI-mediated interactions (Nguyen et al., 2023). These anthropomorphic characteristics bring technological rationality together with warmth and trust and make the total customer experience a bit better (Ding & Najaf, 2024). However, despite so many benefits that can be derived from the use of these chatbots, their ability to mimic human-like conversations and gain the trust of the consumer is still contentious (Singh et al., 2024).

The very fundamental aspect of consumer behavior is trust, which is tricky to build and easy to break, especially within an Intelligent environment by AI (Wang et al., 2023). However, AI chatbots do not have emotional truth and responsibility like human agents, which causes consumers to be skeptical and avoid the services of brands (Aires, 2022). Additional issues, like perceived artificiality, trust in data protection, and the absence of clarity, only amplify the issues of trust enhancement in the sphere of AI-mediated interactions (Ryan et al., 2024).

Furthermore, the use of AI chatbots in customer service is an opportunity and threat, as noted (Puertas et al., 2024). Although they open the ability to minimize costs and the way to reach scale, they at the same time may lead to consumer dissatisfaction with non-human touch and self-organizing capacity (Min et al., 2021). There is always a thin line between optimizing the system and individuality, for which the approach to implementing chatbots must follow specific guidelines related to trust-building factors (Oktavia & Arifin, 2024). Although the number of AI chatbots continues to multiply, studies that investigate their everyday achievement have been more inclined to concentrate on indexes like response exactness and mechanization. Despite the growing interest in AI-mediated interactions, numerous studies have given scant attention to the psychological characteristics and behavior of AI agents (Ding & Najaf, 2024). This gap informs future empirical work on the humanization of AI chatbots and their impact on consumer behavior (Rahevar & Darji, 2024).

In addition, the proposed research is responsive to current industry and relevant academic concerns by investigating the ethical and executable considerations of using AI in consumer engagement. Consequently, this research explores the shift in the customer service industry for AI chatbots, examining their human-like characteristics as a strategy to build trust that affects the purchase behavior among consumers. In this sense, insisting on critical gaps in the existing literature and offering new perspectives on the interaction between AI and humans, the study seeks to contribute to enhancing the theoretical framework as well as practical implications.

Research Gap

Current research on AI chatbots is mostly centered on functional contributions and deployment benefits like increasing the accuracy of responses, saving money, and increasing capacity. However, this functional approach still neglected the psychological aspects of the chatbot communication process. Trust has been widely discussed as a cornerstone of consumer behavior and is usually reduced to utilitarian factors at the focal point with limited consideration of affective and relational aspects. The analysis of consumer experiences with AI chatbots reveals that humanization is an under researched concept that relates weakly to trust. Scholars in the field have often discussed humanization as a design characteristic and trust as a dependent variable, while the interaction between the two and the effect they have on behavioral measures like purchase intentions are not well understood.

Research Problem

With the world moving ever closer to fully embracing e-commerce, the application of one of the most innovative tools, AI, has already begun in the altering of consumer relationships. Of these, chatbots stand out prominently as they can offer customer support and more 24/7 with customization. However, while AI chatbots offer efficiency and scalability, essential questions arise as to whether they can build trust with the customer and affect consumptive purchase attitudes and behaviors as effectively as human-to-human interactions. Prior studies have paid most attention to the technological dimensions of AI chatbots, including enhancing the response rate, natural language understanding and chatbot's extensibility. Of particular interest, little has been done to explore how human-like characteristics contribute to trust and behavior change.

Research Objectives

- To examine the role of human-like attributes in AI chatbots in fostering consumer trust.
- To analyze the mediating effect of trust in the relationship between AI chatbot interaction quality and consumer purchase intentions.
- To evaluate the moderating influence of humanization on consumer trust and purchase intentions.
- To identify key determinants of consumer behavior toward AI chatbots in online retail.
- To provide actionable recommendations for e-commerce platforms to optimize AI chatbot designs.

Significance of the Study

The importance of this study is directed at the need to connect the theory with the practice regarding consumer behavior and AI usage. Therefore, leaving theoretical, methodological, and practical advancements for other research as the work effectively fills a gap highlighted by the literature by establishing the relationship between human-like attributes, trust and purchase intention that can inform AI chatbot strategies for businesses. Such observations are valuable when applied to the e-commerce environment where trust and customer satisfaction are crucial in maintaining competitive advantage.

Theoretical Contribution

This investigation enhances the theoretical knowledge of how specific design aspects of AI chatbots affect trust and behavioral intentions while offsetting the missing parts in the existing literature. It provides a brand-new theoretical perspective on the humanization of brands, the concept of trust, and purchase intention, where imperatives for consumer psychology and artificial intelligence interactions are furthered.

Practical Implications

The research implies that e-commerce platforms and marketers have an understanding of how AI chatbots can be effectively designed when the aim is not solely to optimize the use of digital interfaces but to foster meaningful consumer connections as well.

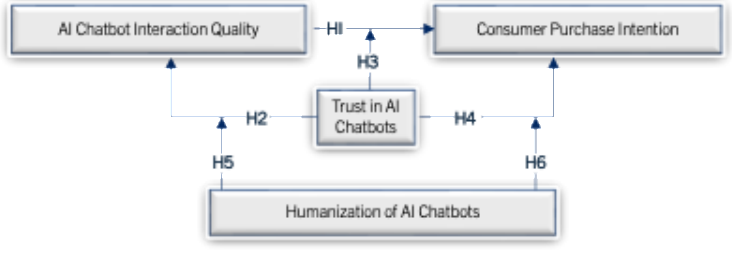
Relevance to Emerging Trends

As e-commerce continues to grow, particularly post-pandemic, understanding consumer behavior in AI-driven environments becomes increasingly critical. This research addresses a timely issue by exploring trust dynamics in an AI-mediated world, aligning with industry and academic priorities.

Research Model

Figure 1

The *Authors' Proposed Model Focuses on AI Chatbots and Consumer Behavior.*



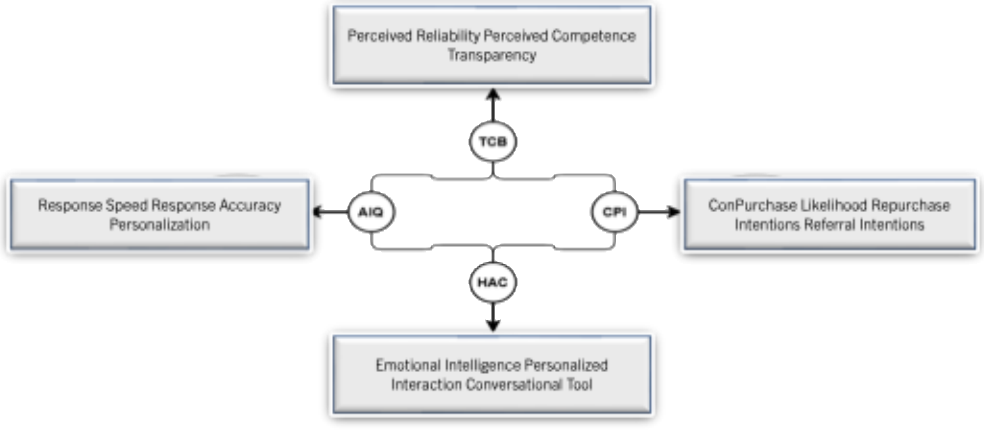
This framework illustrates the hypothesized relationships among critical constructs: AI Chatbot Interaction Quality, Trust in AI Chatbots, Humanization of AI Chatbots, and Consumer Purchase Intention. The design is anchored in established behavioral and marketing theories, with each hypothesis (H1–H6) systematically addressing how these constructs interact.

1. AI Chatbot Interaction Quality (AIQ): This variable includes elements such as response rate, precision and individuality. The interaction quality impacts directly on consumers' perceptions of the efficiency of the chatbot, which constitutes the first contact based on trust with the subsequent purchase intentions.
2. Trust in AI Chatbots (TCB): Trust is regarded here as an important moderator variable. Concepts such as perceived reliability, transparency and competence are core to rebuilding consumer trust in systems that utilize AI, connecting chatbot performance to behavioral change.
3. Humanization of AI Chatbots (HAC): This construct defines emotional intelligence, individual approach and conversation as links between AI and natural services. Its moderating role demonstrates that an increase in human-like traits enhances trust and engagement.
4. Consumer Purchase Intentions (CPI): The outcome variable includes purchase intention, purchase readiness, commitment levels, and recommendations. It also captures the end of how an actual chatbot interaction, generation of trust, and humanization lead to consumers' propensities.

In this framework, the directions of the relationships shown in H1 and H4 represent the direct influence on consumer behavior, and the relationships depicted in H2, H3, H5, and H6 refer to the indirect effects of AI technology on consumer behavior.

Figure 2

The granular breakdown of the constructs in the conceptual framework (designed by the authors).



Literature Review

Due to the advancing AI technologies, the integration of such systems into consumers directly has fundamentally shifted the nature of consumer interactions (Oktavia & Arifin, 2024; Wang et al., 2023). Chatbots are most notable, being an AI application that plays a central role in altering service and customer experiences (Puertas et al., 2024; Zhu & Zhang, 2022). This review synthesizes the findings of AI chatbots on consumer behavioral insights with regard to trust, anthropomorphism, and purchase intentions.

AI Chatbots in Consumer Behavior

Self-service AI chatbots, to be precise, are being used as an all-purpose tool across numerous sectors such as retailing, financing, and even healthcare organizations, taking on the role of facilitators for the relationship between business and consumers (Chong & Yu, 2021; Zhu et al., 2023). They assist in real time, resolve consumer worries, and offer targeted product suggestions that dramatically improve the customer experience (Prasad et al., 2024). The use of Artificial Intelligence has catalyzed the change in consumer engagement, especially machine learning and natural language processing, to make chatbots realistic in their interaction (Aoki, 2020). For instance, in e-commerce communication, the application of chatbots has been rapidly advanced for the ease of product search and the communication of transactions (Rahevar & Darji, 2024). In recent decades new lead algorithms with

improved computing power have promoted better and more logic-oriented chatbots adapted to providing contextually relevant answers (Loh, 2024; Nichifor & Trifan, 2021). New-generation chatbots, supported by deep learning and sentiment analysis, add features like emotion detection and modified responses, putting more importance on customer service (Pragha et al., 2024). Institutionalized current trends show how communication with customers can happen around the clock and with AI chatbots for enhanced customer engagement (Meshram et al., 2021; Rahevar & Darji, 2024). Nonetheless, these behavior limitations can have drawbacks for chatbots accepting complex, context-dependent queries and sometimes result in consumer dissatisfaction.

Trust in AI Systems

Trust in AI systems, especially in the cases of chatbots, is a complex construct that encompasses the dimensions of trust, such as perceived transparency, perceived reliability, and perceived competence (Chakraborty et al., 2024). In general, trust is an essential factor in reducing uncertainty and improving participants' attitudes toward AI technologies within consumer interactions (Cai et al., 2024). Another perspective is the psychological aspect of trust, which enables a user to perceive fewer risks of the transaction, specifically in online transactions (Ding & Najaf, 2024). Trust features like the correctness of the replies provided by the chatbot, data protection and transparency enhance the level of consumer trust; for example, a chatbot that provides fairly good and accurate assistance, as well as guarantees the protection of consumers' data, will be likely to be trusted by the consumers (Cai et al., 2024).

Past literature also shows that trust is the primary determinant of consumer behavior, but there are few analyses of how it interplays with humanization in the context of AI chatbots (Aoki, 2020; Chakraborty et al., 2024). While technology trust is widely studied, the psychological and emotional parameters that play a part in the trust-building block have not been fully evaluated (Min et al., 2021).

Humanization of AI

The element of humanization in AI concerns the deliberate creation of a human-like image of an interface and its emotional appeal that evokes warmth and a natural conversational tone (Ding & Najaf, 2024; Halpern & Brown, 2021). By combining natural language processing and adaptive learning, humanized chatbots will be able to mimic interactions that are as close as possible to their human agent counterparts, enabling increased user satisfaction and the related trust vested (Cai et al., 2024). On the psychological level, this action has a deep impact since consumers seek original emotions similar to those related to sociability (Nicolescu & Tudorache, 2022). This paper also found out that consumers are willing to engage more with humanized chatbots because they are more likely to be seen as trustworthy and relatable as seen, Similar to previous studies, when consumers' concerns are addressed with empathetic responses, their perception towards a brand will improve, and this clarifies their loyalty towards the brand (Shahzad et al., 2024). However, humanization brings concerns, which include setting high hopes or ethical issues or using people as a tool (Aoki, 2020).

Consumer Purchase Intentions

Consumer purchase intentions, also referred to as the propensity to buy a good or service, are a major concern of marketing research (Zhu et al., 2022). These intentions include perceived value, brand trust, intentions and social influence, as put forward (Oktavia & Arifin, 2024). As for the application of AI chatbots in the purchase decision, trust and humanized factors are two crucial factors (Cai et al., 2024). Customers rely on AI chatbots to reduce uncertainty in the purchase process, forcing them to make the intended decision (Puertas et al., 2024). Some studies have also revealed that customers are likely to purchase a product when they feel that the chatbots are capable of providing relevant information on products (Aires, 2022). In addition, it has been found that human-like features in chatbots benefit them and improve consumers' attitudes towards them because of realism (Wang et al., 2023).

As observed from the research, AI chatbots have gained considerable popularity in episodes associated with online shopping, and other research points to the fact that appropriately designed chatbot experiences do result in higher conversion rates (Chakraborty et al., 2024). The implications for businesses by this study are significant, calling on businesses to focus on how chatbot design can actually recover purchase intention (Shahzad et al., 2024).

Research Methodology

This study explores the relationships between AI Chatbot Interaction Quality, Trust in AI Chatbots, Humanization, and Consumer Purchase Intentions. A quantitative research design was adopted, utilizing validated scales to ensure the reliability and validity of the constructs. Below, the materials, methods, and data analysis techniques are described in detail for reproducibility.

Materials and Procedures

The study employed a structured self-administered questionnaire. The questionnaire contained 20 items measuring four constructs: AI Chatbot Interaction Quality, Trust in AI Chatbots, Humanization, and Consumer Purchase Intentions. The items were adapted from existing validated scales, ensuring content validity. Each item was rated on a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The survey was distributed online, targeting individuals with prior experience interacting with AI chatbots in customer service contexts.

Ethical approval was obtained before data collection. Participants were informed about the study's purpose and confidentiality measures. In total, 366 valid responses were collected. This sample size was deemed adequate for Structural Equation Modeling (SEM), which requires a minimum of 200 responses for reliable results.

Data Analysis Techniques

Data were analyzed using Smart-PLS, a software tool for SEM. This technique allows for assessing relationships between latent constructs and their indicators. The analysis included the following steps:

1. Descriptive statistics to summarize the demographic characteristics of the sample.
2. Reliability analysis using Cronbach's Alpha and Composite Reliability (CR) to assess internal consistency.
3. Validity analysis using Average Variance Extracted (AVE) and the Fornell-Larcker criterion.
4. Structural model evaluation to test direct, indirect, and moderated effects.
5. Model fit assessment using the Standardized Root Mean Square Residual (SRMR).

Results

Table 1 shows the descriptive statistics provide an overview of the sample's demographic characteristics, showing a predominantly young and well-educated population with diverse employment statuses.

Table 1

Descriptive Statistics for Demographic Variables

Variable	Mean	Standard Deviation
Age	1.75	0.78
Gender	1.43	0.52
Qualification	2.56	0.85
Employment	2.24	1.57

Confirmatory Factor Analysis (CFA) is used for assessing the validity and reliability of measurement models, that is testing how observed indicators measure latent constructs. Hypothesized model was validated with CFA in this study, which shows the survey items fits the model well, and also indicates the roles of trust and humanization in determining the behavior of the consumer in e-commerce. As seen in Table 4.2 below, they are the factor loadings of measurement items of constructs. Overall, loadings for AI Chatbot Interaction Quality (0.541–0.812) meet reliability thresholds for the most part, except for AI4. Results from the alignment of the quality variables to the constructs of the theory show a strong alignment for Trust in AI Chatbots (0.653–0.754) and Humanization (0.789–1.013). The measurement model is validated for further analysis using Consumer Purchase Intentions (0.698–0.895) specifically CP3.

Table 2

Factor Loading/Outer Loading Values

Indicators	AI Chatbot Interaction Quality	Trust in AI Chatbots	Humanization of AI Chatbots	Consumer Purchase Intention
AI1	0.599			
AI2	0.624			
AI3	0.812			
AI4	0.541			
AI5	0.679			
TA1		0.754		
TA2		0.681		
TA3		0.747		
TA4		0.740		
TA5		0.653		
HA1			0.863	
HA2			0.789	
HA3			0.815	
HA4			1.013	
HA5			0.797	
CP1				0.698
CP2				0.729
CP3				0.895
CP4				0.773
CP5				0.759

Internal consistency reliability defines the extent to which any items of a construct consistently measure the same underlying concept. The Cronbach's Alpha and Composite Reliability (CR) are commonly used for this. Values of Cronbach's Alpha above 0.7 are good enough for reliability and values above 0.7 of CR are strong enough for the construct reliability. All the values below Table 4.3, indicating strong internal consistency. One assurance of this test is that the items should be aligned and they can reliably represent their respective latent constructs.

Table 3

Results of Internal Consistency Reliability

Construct	Cronbach's Alpha	Composite Reliability (CR)
AI Chatbot Interaction Quality	0.914	0.832
Trust in AI Chatbots	0.953	0.913
Humanization of AI Chatbots	0.964	0.898
Consumer Purchase Intention	0.947	0.899

The convergent validity determines how different indications for the same construct are related, and in case they are interrelated, how much they represent the latent variable. Average variance Extracted (AVE) was used for its assessment, values above 0.5 indicate that a construct accounts for at least half of the variance of the indicators of such a construct. The values in the Table 4.4 suggesting the need for refinement in future studies.

Table 4

Convergent Validity (AVE) Results

Construct	AVE
AI Chatbot Interaction Quality	0.432
Trust in AI Chatbots	0.513
Humanization of AI Chatbots	0.739
Consumer Purchase Intention	0.599

Discriminant validity, which ensures constructs are distinct, was evaluated using the Fornell-Larcker Criterion and HTMT ratios. Although high correlations between Consumer Purchase Intentions and both Trust in AI Chatbots (0.944) and Humanization of AI Chatbots (0.948) suggest overlapping constructs, the HTMT values, all below 0.85, confirm adequate discriminant validity. These results indicate that while constructs are uniquely measured, further refinement is necessary to address overlaps and strengthen the measurement model for future analysis.

Table 5

Fornell-Larcker Criteria

Construct	AI Chatbot Interaction Quality	Trust in AI Chatbots	Humanization of AI Chatbots	Consumer Purchase Intention
AI Chatbot Interaction Quality	------			
Trust in AI Chatbots	0.894	------		
Humanization of AI Chatbots	0.917	0.912	------	
Consumer Purchase Intention	0.940	0.944	0.948	------

Table 6

HTMT Criteria

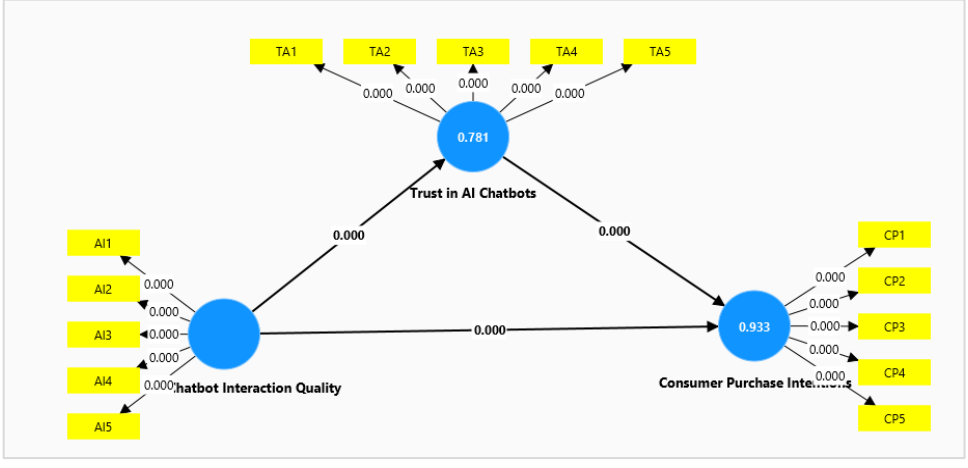
Construct	AI Chatbot Interaction Quality	Trust in AI Chatbots	Humanization of AI Chatbots	Consumer Purchase Intention
AI Chatbot Interaction Quality	------			
Trust in AI Chatbots	0.694	------		
Humanization of AI Chatbots	0.717	0.812	------	
Consumer Purchase Intention	0.640	0.744	0.548	------

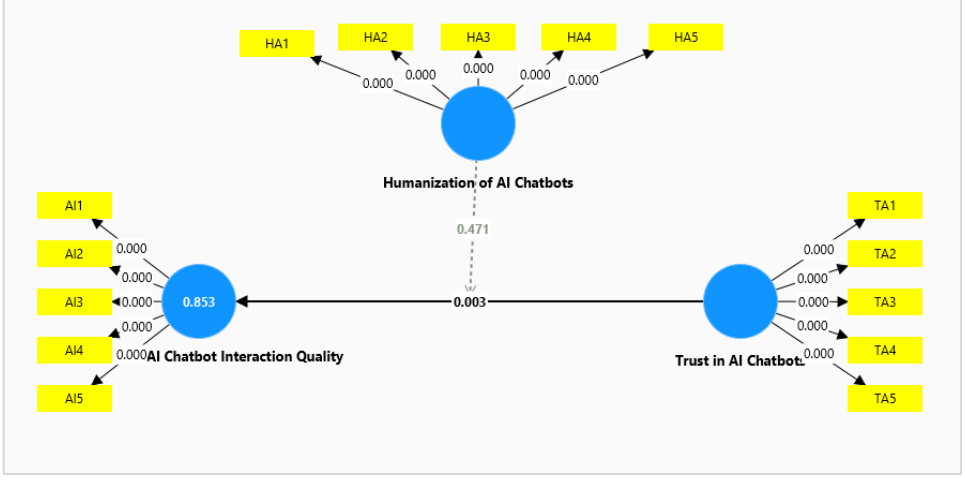
Table 7 demonstrate strong support is found for the conceptual model as the summarized results show significant direct effects of AI Chatbot Interaction Quality on Trust (β= 0.966, p= 0.000) and on Consumer Purchase Intentions (β=1.096, p=0.000). Consumer Purchase Intentions against Trust in AI Chatbots (β = 1.020, p = 0.000) was also found to be an important factor in the proposed model. The results of mediation analysis confirm that Trust fully mediates the relationship between Chatbot Interaction Quality and Purchase Intentions (β = 0.986, p = 0.000). Results from moderation analysis demonstrate the limited influence of Humanization: there is no significant moderation of the effect of Chatbot Interaction Quality on Trust (β = 0.044, p = 0.471). Although, Humanization strengthens the relationship between Consumer Purchase Intentions and Trust (β = 0.035, p = 0.000), signifying emotional and empathetic Chatbot attributes play an important role in strengthening the trust among consumers making purchase decisions. From sensitizing about a new medium, these findings identify the important role played by Chatbot Interaction Quality and Trust, and they further highlight how Humanization can add value.

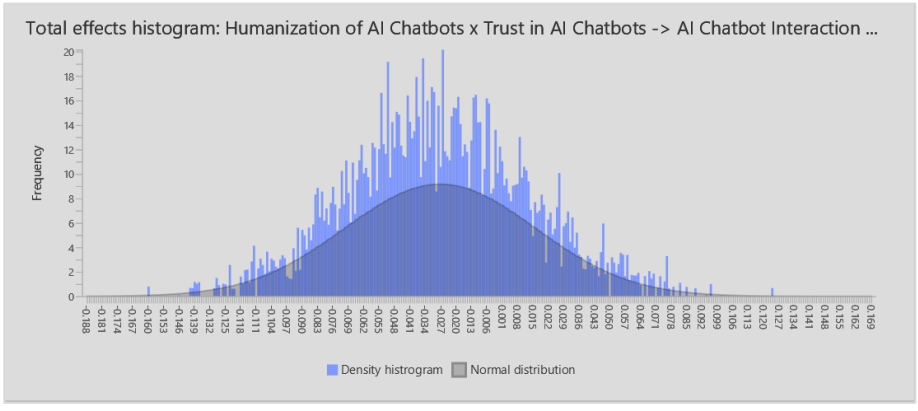
Table 7

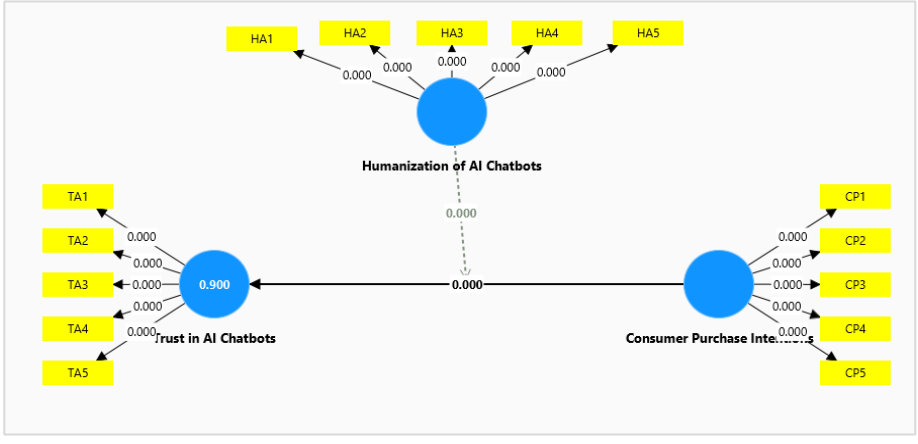
Results of Direct Effects Hypothesis

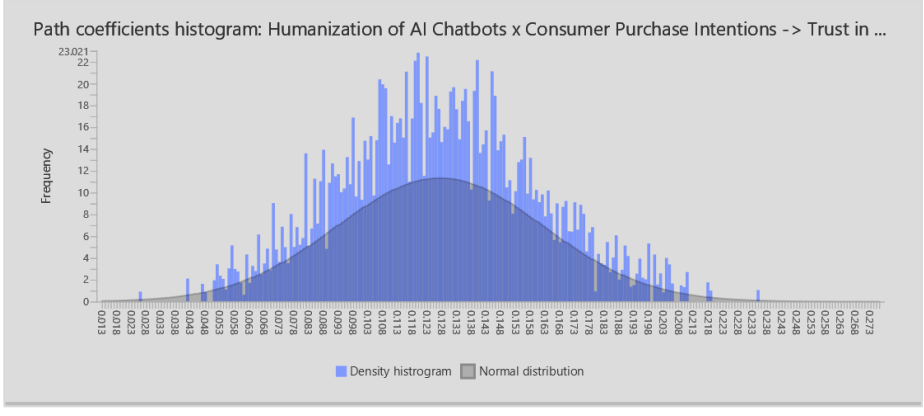
Hypothesis	Path Coefficient (β)	t-Statistic	P-Value	Interpretation
H1: AI → Trust	0.966	38.105	0.000	AI Chatbot Interaction Quality has a strong positive impact on Trust in AI Chatbots.
H6: AI → Purchase	1.096	52.365	0.000	Chatbot quality significantly influences Consumer Purchase Intentions directly.
H5: Trust → Purchase	1.020	54.500	0.000	Trust significantly impacts Consumer Purchase Intentions.
H2: AI → Trust → Purchase (Indirect)	0.986	40.215	0.000	Trust mediates the relationship between chatbot quality and purchase intentions.
H3: Humanization x Trust → AI Quality	0.044	0.721	0.471	Humanization does not significantly moderate the effect of chatbot quality on trust.
H4: Humanization x Purchase → Trust	0.035	3.598	0.000	Humanization strengthens the effect of purchase intentions on trust when chatbots show empathy.











Discussion

This study finds that AI Chatbot Interaction Quality and Trust have a great influence on the Consumer Purchase Intentions in e-commerce settings. The fast, available, and unified chatbot interactions are found to be highly important for influencing trust of Internet users (e.g., AI Chatbot Interaction Quality to Trust, $\beta = 0.966$, $p = 0.000$; direct effects have high path coefficients). Moreover, Trust in AI Chatbots is found to mediate the relationship between Chatbot Interaction Quality and Consumer Purchase Intentions. The results are also consistent with previous findings that trust is a vital component of successful AI based interactions with consumers.

Humanization was found to moderate the relationship between Consumer Purchase Intentions and Trust, but to not have any influence on Chatbot Interaction Quality ($\beta = 0.044$, $p = 0.471$). This highlights that similar to the concern of efficiency in the form of human input recognition, humanlike features (such as responsiveness and accuracy) do not contribute to the generation of trust to the same extent as functional aspects. However, while engagement with Humanized chatbots strengthens the consumer trust relationship (as our study validates), displays of empathy and emotional engagement by the AI further enhances their emotional appeal, similar to research findings which emphasize the importance of emotional intelligence in the human interaction with AI.

The implications of this study are great for companies trying to maximize potential AI based tools for customer engagement. Improving chatbot interaction quality directly impacts trust and purchase intention improvements in quality will improve trust and eventually drive purchase intentions. Still, weaving humanization elements into each consumer journey (like when emotion is necessary), will cause consumers to feel more trust.

Limitations include use of self-reported data, which may introduce response biases, and the cross-sectional design which limits causal inferences. This research provides suggestions for future research to utilize longitudinal designs to investigate the long-term effects of interactions with chatbots on consumer trust and purchase behavior. Furthermore, studying the potential of advanced AI features, like sentiment analysis and adaptive learning, could help uncover ways in which consumer trust as well as satisfaction could be further improved. Moving forward, these findings provide actionable insights into e-commerce innovation based on the effects that AI has on e-commerce customer behavior and preferences.

Conclusion

The implications of this study point to the paramount relevance of the AI Chatbot Interaction Quality and Trust for driving Consumer Purchase Intentions in e-commerce. Results indicate that high quality chatbot interactions significantly enhance trust, and that trust acts as a key mediator explaining driving purchase intentions. Furthermore, Humanization of AI Chatbots is instrumental for only a tiny effect of Chatbot Interaction Quality on Trust, but it does facilitate the role of encouraging Trust through the empathy and emotional engagement shown by the chatbot in building a trustful consumer relationship. These findings highlight the need to focus on chatbot responsiveness, accuracy and personalization as a way to build and instill trust and confidence in consumers.

This research has broader implications for businesses using AI driven customer service tools: These businesses should devote efforts in optimizing interaction quality as a central strategy, not only selectively using humanization to reinforce consumer trust in emotionally engaging contexts. Taking such an approach makes consumers more satisfied while resulting in higher sales. This work helps elucidate the current state of the art of AI human interaction and pathways for applying AI technologies in digital commerce to build meaningful and effective consumer relationships.

Future Direction

As the integration of AI chatbots in consumer interactions continues to grow, further research should explore the long-term effects of human-like AI features on trust and purchase intentions. One promising area is to examine the moderating role of trust in these dynamics. While this study has established trust as a crucial factor in shaping consumer behavior, future research could delve deeper into how trust influences not just initial purchase intentions but also long-term customer loyalty. For instance, it would be insightful to investigate how different levels of trust in AI chatbots affect repeat purchasing behavior and customer retention. Longitudinal studies could be particularly valuable here, tracking consumer interactions over time to explore how trust evolves with increasing chatbot usage and how it might fluctuate depending on the chatbot's consistency, responsiveness, and emotional engagement. These studies would help businesses tailor their AI chatbot strategies to not only increase initial trust but also foster deeper, more sustainable consumer relationships.

Another important avenue for future research lies in exploring humanization as a mediating factor between AI interaction quality and consumer trust. While human-like attributes in AI chatbots are known to enhance trust, there is still much to learn about how specific humanization elements, such as empathy, emotional intelligence, and conversational abilities, mediate this relationship. For example, future studies could focus on identifying which aspects of humanization are most effective in different cultural or industry contexts. Additionally, examining the role of humanization in bridging the gap between chatbot interaction quality and consumer purchase intentions could provide valuable insights for businesses. By understanding which human-like qualities are most influential, companies can design AI chatbots that not only improve trust but also create more personalized and engaging customer experiences. This research could have significant implications for businesses striving to optimize their chatbot technologies, ensuring they are not just efficient but also emotionally resonant with consumers.

References

Aires, M. V. (2022). *How visual merchandising influences generation Z purchasing behavior in a retail store* [masterThesis]. https://repositorio.iscte-iul.pt/handle/10071/28057

Aoki, N. (2020). An experimental study of public trust in AI chatbots in the public sector. *Government Information Quarterly*, *37*(4), 101490. https://doi.org/10.1016/j.giq.2020.101490

Bauer, K., Von Zahn, M., & Hinz, O. (2023). Expl(AI)ned: The Impact of Explainable Artificial Intelligence on Users' Information Processing. *Information Systems Research, 34*(4), 1582–1602. https://doi.org/10.1287/isre.2023.1199

Brown, J. E. H., & Halpern, J. (2021). AI chatbots cannot replace human interactions in the pursuit of more inclusive mental healthcare. *SSM - Mental Health*, *1*(1), 100017. https://doi.org/10.1016/j.ssmmh.2021.100017

Cai, N., Gao, S., & Yan, J. (2024). How the communication style of chatbots influences consumers' satisfaction, trust, and engagement in the context of service failure. *Palgrave Communications, 11*(1), 1–11. https://www.nature.com/articles/s41599-024-03212-0

Chakraborty, D., Kumar Kar, A., Patre, S., & Gupta, S. (2024). Enhancing trust in online grocery shopping through generative AI chatbots. *Journal of Business Research*, *180*, 114737. https://doi.org/10.1016/j.jbusres.2024.114737

Chen, Q., Yin, C., & Gong, Y. (2023). Would an AI chatbot persuade you: An empirical answer from the elaboration likelihood model. *Information Technology & People*, https://doi.org/10.1108/ITP-10-2021-0764

Cheng, X., Cohen, J., & Mou, J. (2023). AI-enabled technology innovation in e-commerce. *Journal of Electronic Commerce Research*, *24*(1), 1-6. http://www.jecr.org/sites/default/files/2023vol24no1_Paper1.pdf

Chong, T., Yu, T., Keeling, D. I., & de Ruyter, K. (2021). AI-chatbots on the services frontline addressing the challenges and opportunities of agency. *Journal of Retailing and Consumer Services*, *63*, 102735. https://doi.org/10.1016/j.jretconser.2021.102735

Ding, Y., & Muzammil Najaf. (2024). Interactivity, humanness, and trust: a psychological approach to AI chatbot adoption in e-commerce. *BMC Psychology*, *12*(1), 595. https://doi.org/10.1186/s40359-024-02083-z

Edisa Lozić, & Štular, B. (2023). ChatGPT v Bard v Bing v Claude 2 v Aria v human-expert. How good are AI chatbots at scientific writing? *ArXiv (Cornell University)*, *15*(10), 336. https://doi.org/10.3390/fi15100336

Kelly, S., Kaye, S.-A., & Oviedo-Trespalacios, O. (2022). A Multi-Industry Analysis of the Future Use of AI Chatbots. *Human Behavior and Emerging Technologies*, *2022*(1), 1–14. https://doi.org/10.1155/2022/2552099

Leong, C. W. (2024). *The Factor Affecting Intention to Use Artificial Intelligence (AI) Chatbot in The Context E-Commerce* [Masters]. Tunku Abdul Rahman University of Management and Technology. https://eprints.tarc.edu.my/27535/

Li, J., Wu, L., Qi, J., Zhang, Y., Wu, Z., & Hu, S. (2023). Determinants Affecting Consumer Trust in Communication With AI Chatbots. *Journal of Organizational and End User Computing*, *35*(1), 1–24. https://doi.org/10.4018/joeuc.328089

Loh, E. (2023). ChatGPT and generative AI chatbots: challenges and opportunities for science, medicine and medical leaders. *BMJ Leader*, *8*(1), leader-2023-000797. https://doi.org/10.1136/leader-2023-000797

Meshram, S., Naik, N., VR, M., More, T., & Kharche, S. (2021). Conversational AI: Chatbots. *2021 International Conference on Intelligent Technologies (CONIT)*. https://doi.org/10.1109/conit51480.2021.9498508

Min, F., Fang, Z., He, Y., & Xuan, J. (2021). Research on Users' Trust of Chatbots Driven by AI: An Empirical Analysis Based on System Factors and User Characteristics. *2021 IEEE International Conference on Consumer Electronics and Computer Engineering (ICCECE)*, 55–58. https://doi.org/10.1109/iccece51280.2021.9342098

Nguyen, V. T., Phong, L. T., & Khanh, N. T. (2023). The impact of AI chatbots on customer trust: an empirical investigation in the hotel industry. *Consumer Behavior in Tourism and Hospitality*, *18*(3), 293–305. https://doi.org/10.1108/cbth-06-2022-0131

Nichifor, E., & Trifan, A. (2021). Artificial Intelligence in Electronic Commerce: Basic Chatbots and the Consumer Journey. Amfiteatru Economic, 23(56), 87–101. https://www.ceeol.com/search/article-detail?id=929501

Nicolescu, L., & Tudorache, M. T. (2022). Human-Computer Interaction in Customer Service: The Experience with AI Chatbots—A Systematic Literature Review. *Electronics, 11*(10), Article 10. https://doi.org/10.3390/electronics11101579

OKTAVIA, T., & ARIFIN, C. W. (2024). REVOLUTIONIZING E-COMMERCE WITH AI CHATBOTS: ENHANCING CUSTOMER SATISFACTION AND PURCHASE DECISIONS IN ONLINE MARKETPLACE. *Journal of Theoretical and Applied Information Technology*, *102*(19). https://www.jatit.org/volumes/Vol102No19/29Vol102No19.pdf

Pragha, P., Dhalmahapatra, K., Sambasivan, M., Rathore, P., & Saha, E. (2024). Understanding students' switching intentions from cash payment to mobile payment in education sector. *Journal of Applied Research in Higher Education, ahead-of-print(ahead-of-print).* https://doi.org/10.1108/JARHE-11-2023-0522

Prasad, K. V. S., Xavier, L. A., Jain, S., Subba, R., Mittal, S., & Anute, N. (2024). AI-Driven Chatbots for E-Commerce Customer Support. 2024 International Conference on Advances in Computing, Communication and Applied Informatics (ACCAI), 1–5. https://doi.org/10.1109/ACCAI61061.2024.10602261

Puertas, S. M., Manzano, M. D. I., L–pez, C. S., & Ribeiro-Cardoso, P. (2024). Purchase intentions in a chatbot environment: An examination of the effects of customer experience. *Oeconomia Copernicana, 15*(1). https://doi.org/10.24136/oc.2914

Rafiq, F., Dogra, N., Adil, M., & Wu, J.-Z. (2022). Examining Consumer's Intention to Adopt AI-Chatbots in Tourism Using Partial Least Squares Structural Equation Modeling Method. Mathematics, 10(13), Article 13. https://doi.org/10.3390/math10132190

Rahevar, M., & Darji, S. (2024). THE ADOPTION OF AI-DRIVEN CHATBOTS INTO A RECOMMENDATION FOR E-COMMERCE SYSTEMS TO TARGETED CUSTOMER IN THE SELECTION OF PRODUCT. *International Journal of Management, Economics and Commerce, 1*(2), https://doi.org/10.62737/m1vpdq75

Ryan, Lay, W. B., Chia, J. J., & Gui, A. (2024). Transforming E-Commerce: AI Chatbots for Supercharged Customer Experiences. 2024 International Conference on Information Technology Research and Innovation (ICITRI), 299–304. https://doi.org/10.1109/ICITRI62858.2024.10698874

Shahzad, M. F., Xu, S., & An, X. (2024). Assessing the impact of AI-chatbot service quality on user e-brand loyalty through chatbot user trust, experience and electronic word of mouth. Journal of Retailing and Consumer Services, 79, 103867. https://doi.org/10.1016/j.jretconser.2024.103867

Sidlauskiene, J., Joye, Y., & Auruskeviciene, V. (2023). AI-based chatbots in conversational commerce and their effects on product and price perceptions. *Electronic Markets, 33*(1), 24. https://doi.org/10.1007/s12525-023-00633-8

Singh, C., Dash, M. K., Sahu, R., & Kumar, A. (2024). Investigating the acceptance intentions of online shopping assistants in E-commerce interactions: Mediating role of trust and effects of consumer demographics. *Heliyon, 10*(3). https://doi.org/10.1016/j.heliyon.2024.e25031

Tamara, C. A. J., Tumbuan, W. J. F. A., & Gunawan, E. M. (2023). CHATBOTS IN E-COMMERCE: A STUDY OF GEN Z CUSTOMER EXPERIENCE AND ENGAGEMENT – FRIEND OR FOE? *Jurnal EMBA : Jurnal Riset Ekonomi, Manajemen, Bisnis Dan Akuntansi, 11*(3), https://doi.org/10.35794/emba.v11i3.49501

TIger NIlson, E., & Bengtsson, I. (2024). The New Shop Assistants? Unveiling ConsumerAttitudes towards AI-powered Chatbots in E-commerce : An exploratory study. https://urn.kb.se/resolve?urn=urn:nbn:se:lnu:diva-130197

Wang, C., Li, Y., & Fu, W. (2023). Whether to trust chatbots: Applying the event-related approach to understand consumers' emotional experiences in interactions with chatbots in e-commerce. *Journal of Retailing and Consumer Services, 73,* 103325. https://doi.org/10.1016/j.jretconser.2023.103325

Zakaria, A., & Doheir, M. (2024). Infinite Potential of AI Chatbots: Enhancing User Experiences and Driving Business Transformation in E-commerce: Case of Palestinian E-Commerce. *Journal of Ecohumanism, 3*(5), 216–229. https://www.ceeol.com/search/article-detail?id=1273597

Zhu, Y., & Zhang, J. (2022). AI is better when I'm sure: The influence of certainty of needs on consumers' acceptance of AI chatbots. *Journal of Business Research, 150,* 642–652. https://doi.org/10.1016/j.jbusres.2022.06.044