

Understanding Trust Formation in AI Chatbot Interactions among Generation Z Users

Vishnu Mahesh V¹, Anagha K A², Ragavendra G³ and Harikrishnan R⁴

¹⁻⁴Amrita School of Business, Amritapuri, Amrita Vishwa Vidyapeetham, Kollam, India

Abstract— Chatbots are now a part of the digital customer care, but the issue of trust is the decisive factor in the usage of artificial intelligence (AI) chatbots. In this research, the authors focus on the aspects of development of trust in AI chatbot interactions in Generation Z consumers. Primary data were gathered by the means of structured questionnaire and were analysed by the use of SPSS. Internal consistency across constructs was confirmed by way of reliability testing, whereas exploratory factor analysis offered six trust-shaping factors, namely Customer Loyalty Value, Chatbot Service Competence, Chatbot Reliability, Chatbot Advice Credibility, Chatbot Service Experience, and Human-Like Language. The findings suggest that the functional (accuracy, speed, competence, reliability) and relational (personalisation, tone, perceived credibility, human-like communication) aspects play a crucial role in both trust and the further behavioural consequences, including further usage and loyalty intentions. It is worth noting that even one human-like linguistic signal had a positive influence on trust perception, which reflects the psychological significance of the talk naturalness. The findings not only give theoretical understanding of how trust is formed in the services mediated by AI but also provide practical recommendations to organisations who want to create trustful chatbot systems.

Index Terms— Artificial Intelligence, AI chatbots, Customer Trust, Chatbot Credibility, Trust Formation, and Generation Z.

I. INTRODUCTION

The customer service industry has been shifting towards artificial intelligence fast, and the AI chatbots have taken center stage in this change. Shawar and Atwell [15] explained that the first automated systems provided easy predefined responses, whereas the new chatbots adopt natural language processing and sophisticated learning algorithms to comprehend inquiries, trail the discussion, and provide suitable answers. They have also changed their interfaces as plain text programs have been replaced by smoother conversational interfaces which are more natural and human like. McLean & Osei-Frimpong [10] discussed that lots of chatbots are written in a friendly style, with kind tones and positive words since they are designed to make the customers feel good even when using technology. It is also possible to use advanced systems to identify emotional indicators in user messages and react to them with empathy, which means that digital systems are now trying to promote emotional communication, not only answer questions.

In spite of this development of technology, the issue of trust still exists. The speed of reaction and 24-hour access can not necessarily make people trust chatbots. Correctness, proper flow of information, and a sense of being comprehended are significant factors in determining the reliability of the chatbot to the user.

Emotional attachment is also important. The human-like chatbot with the communicative style that is either robotic or distant might make the users question its capacity to comprehend their needs in their entirety. Moreover, there can be lowered trust in privacy concerns and the handling and storage of the data. Ameen et al. [17] highlighted that customers desire efficiency and at the same time, they desire to be assured that their personal data is safe and that the system is open in its activities.

This research target is the generation Z users, a cohort that is characterized by heavy use of the digital assets and technological comfort. Gen Z is a perfect group to learn about the trust in AI chatbots since the target group is very exposed to the online platforms, they frequent automated services, and they require speed and meaningful interaction. The key research question that this research would use to guide the study is as follows: What determines customer trust in AI chatbots amongst Gen Z users? To answer this question, the study aims at positive and negative impact on user trust such as accuracy, tone, emotional support, reliability, perception of privacy, and experience in interaction.

As a contrast to the previous research on the use of chatbots or their service quality, which mostly focus on the first or the second, the given study is innovative in its own manner because it empirically identifies and proves the validity of specific trust-forming dimensions and correlates them with the loyalty-related outcomes among Gen Z users. The study goes a step further in suggesting a more coherent approach to the development of long-term consumer behaviour by placing the element of trust as a primary explanatory factor and not a by-product as a result of AI chatbot interactions.

This study aims at determining the positive aspects of the AI chatbot interaction that would build trust amongst the Gen Z generation users. The paper relies on actual user feedback gathered in the form of a structured survey questionnaire that aims at quantifying the perception of reliability, clarity, emotional support, and the general trust in the interaction with a chatbot. The research will help to understand why certain systems are trusted by consumers and others make them hesitate or doubt by examining the experience young consumers have with AI chatbots and the ways they assess them. The rest of this paper has been structured in the following manner. Section Two serves the purpose of reviewing the available literature on artificial intelligence chatbots and customer trust in the online setting. Section Three presents the method of the research, survey design and data collection process. Section Four reveals the findings based on the response of the users and statistical results. Section Five presents conclusions about implications to business strategy, limitations of the study and suggestions of future research directions.

II. LITERATURE REVIEW

Traditional Chatbots, powered by AI, have become a key component of online customer service and therefore, researchers have investigated the development of trust in automated exchanges. Brandtzaeg and Folstad [4] and McLean and Osei-Frimpong [10] indicates that the users are more open to trusting chatbots when they have dependable, helpful, and emotionally supportive interactions, and this tendency is particularly widespread among the users of the Generation Z, who tend to use mobile services and tools of instant communication most of the time. Moussawi et al. [22] and Lee and Choi [9] explained that emotional design, natural dialogue, and friendly tone also increase the user comfort, creating a sense of perceived distance between the user and the chatbot and fostering relational trust. Gao et al. [6] and Naqvi et al. [12] noted that since chatbots are proliferating into various industries, scholars note that it is necessary to define which attributes enhance or diminish trust among younger digital consumers.

The decisive role is also determined by the functional attributes. Ashfaq et al. [2], Chung et al. [5] and Adam et al. [1] proposed that fidelity, transparency, individualization, speed of response and the simplicity of interaction reoccur as fundamental sources of trust. Any minor errors can harm the perceived credibility, and individualized responses allow users to experience their recognition and understanding. Roy et al. [19] and Hill et al. [7] reported that Gen Z is more sensitive to speed and rapid navigation compared to older customers, thus efficiency and simplicity are key factors in building trust. Pizzi et al. [14] and Bansal et al. [3] noted that data privacy and data responsible use are still an issue of concern; users trust chatbots more in the case of transparent data protection and easily convey the message.

Together with performance, relational signals including courtesy, sympathy, warmth, and openness enhance the perceptions of genuineness and affection. Moussawi et al. [11] and Lee and Choi [9] proposed that short supportive messages (e.g., I understand) make people feel more comfortable and prompt offline communication, especially with younger audiences used to interaction with the digital environment. Gao et al. [6] found that lack of emotional sensitivity leads to disengagement and attraction towards human assistance among users. Therefore, trust is built where emotional attachment and technical performance support each other.

According to recent literature, trust is a multidimensional concept that is influenced by recurrent contact, consistency, naturalness of conversation, and well-articulated privacy policies. Intuitive and easy-flowing discussions can also promote confidence, as they ease the level of confusion and effort. Trust, in general, is not a result of a particular feature, but a combination of the influence of accuracy, transparency, emotional communication, and the design of interactions.

Kim et al. [8] and Pantano and Pizzi [13] noted that there is increased interest in chatbot adoption, the majority of previous studies focus on the quality of the service or technology acceptance but do not study how these concepts interact to create trust and do not consider the emotional communication trait of chatbots and performance attribute of chatbots as well as the design of the conversational system as a single framework.

Addressing this gap, the present study integrates functional performance, advice credibility, and service experience into a single empirical framework and examines how this trust dimensions collectively influence loyalty-related outcomes among Gen Z users. This integrated perspective extends existing chatbot research by explicitly linking trust formation mechanisms with downstream behavioural consequences.

The given research adds to the literature addressing the problem of trust as the key concept and discussing which particular features of chatbots can enhance or reduce trust in Gen Z. The study concentrates on emotional cues, functional performance, flow of communication, accuracy, and data perception that are important but not analysed comprehensively. As a majority of the current research lacks comprehensive information about the trust-building process among the young digital natives, the study has brought new theoretical clarity and practical significance to the businesses that are currently utilizing chatbots as a service to cater to the needs of younger customers.

III. METHODOLOGY

The current research is based on a quantitative research design as it aims to explore the impact of factors on trust in interactions with AI chatbots among Gen Z users. A closed-ended questionnaire was constructed in a structured format based on the constructs identified in the literature review and conceptual framework, which include functional performance, emotional and relational qualities, privacy perception, trust, and customer loyalty. The questionnaire consisted of 30 Likert-type items measured on a five-point scale, which is commonly used to quantify attitudes and behavioral intentions in social science research. Google Forms was used to administer the survey as it is easy to access and collect data. The research design is suitable since it will enable measuring systematically perceptions associated with the performance of chatbots and emotional experience and the analysis of connections between the perceptions, trust, and loyalty among Gen Z users. The questionnaire has a structured nature, which ensures the consistency of responses and the possibility to use such statistical methods as the factor analysis.

To examine the data gathered, several statistical applications were used to interpret the relationships of the study variables. Their demographic features and the patterns of use of a chatbot were first summarized using descriptive statistics. To determine the underlying factor structure in the dataset, the exploratory factor analysis (EFA) was then performed. Factor analysis is a multivariate statistical method that attempts to shrink a huge quantity of observed variables into a smaller set of significant latent variables founded on a mutual variance. This approach is a good fit to the current study because the constructs associated with the performance of chatbots, their emotional tone, the privacy, trust, and loyalty are multidimensional.

The appropriateness of the data before the factor analysis was undertaken was evaluated by the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett test of sphericity. The factor-rotated component matrix was analyzed with the intent of attending to similar items under coherent factors that signified functional performance, emotional-relational characteristics, perceived security, trust and loyalty. Cronbachs alpha was used to evaluate the internal consistency of each of the identified factors through reliability analysis. All statistical procedures were done with SPSS, which is a popular software package that is used to conduct quantitative studies.

The convenience sampling method was used to collect data by focusing on Gen Z respondents between the ages of 18 and 30 years. The convenience sampling technique was selected because it is reasonable and effective in reaching people who interact with AI chatbots on a regular basis and can be easily located via the Internet. The Gen Z was specifically chosen due to the fact that this generation is extremely active in the sphere of digital customer service technologies and can be characterized by high expectations of online interactions in terms of speed, clarity, emotional involvement, and privacy security.

Google Forms was used to collect 170 valid responses. This sample is deemed sufficient to do the exploratory factor analysis because it is larger than the often recommended values of at least 5 respondents per item; it is also

consistent with the methodology which proposes that at least 150 respondents are needed to have consistent factor solutions in the social science study. The size of the sample is also adequate in terms of providing adequate statistical power to test co-relations among constructs regarding trust and loyalty.

Although convenience sampling allows efficient data collection, it also has a number of limitations. The sample might not be a complete representative of the larger population of Gen Z, since only those respondents who have access to the internet could participate and those who have had previous interactions with chatbots. This could also bring about self-selection bias and restrict the generality of the results. Nevertheless, because of the exploratory character of the research, as well as the emphasis on the process of trust development in active users of chatbots, convenience sampling is relevant. This limitation can be tackled in future research by using the probability based or the stratified sampling methods in various demographic and cultural settings.

The interviewed individuals were students and young professionals who had previously used chatbots on online shopping websites, banking applications, travel websites, and food delivery applications and call centers. These respondents were chosen due to their intensive and repeated exposure to domain-specific chatbots allows them to give informed and credible information regarding the aspect that determines trust and loyalty in AI-driven service interactions.

IV. FINDINGS

To determine the internal consistency of the factors that were extracted, Cronbachs alpha was used to test the reliability of the measurement instrument. All the coefficients of reliability were above the recommended level of 0.70 meaning that there was acceptable to high internal consistency in the measurement items. This affirms that the scale items of each factor were always able to measure the underlying latent constructs of trust and the results of chatbot interaction. The acceptable levels of reliability offer a robust base of further interpretation of factors to be used.

TABLE I: RELIABILITY ANALYSIS

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
.947	.946	30

The exploratory factor analysis was then performed to determine the latent structure of the observed variables. The Kaiser- Meyer- Olkin (KMO) measure of sampling adequacy exceeded the value of the minimum of 0.60, which means that the sample size was sufficient to conduct the analysis of the factors. The test of Bartlett-Sphericity was significant. ($p < 0.001$), which demonstrates that the correlation matrix was not an identity matrix and that the variables were related to each other adequately. These diagnostics contribute to the suitability of factor analysis of the data.

TABLE II: KMO AND BARTLETT'S TEST

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.920
Bartlett's Test of Sphericity	Approx. Chi-Square	2878.130
	df	435
	Sig.	0.000

The Principal component analysis, which was done using the varimax rotation technique, led to the removal of four factors with eigenvalues higher than one. All these factors led to a significant percentage of the overall variance, which suggests that the explanatory framework of trust development during AI chatbot communication is strong. The factor loading of the rotated component matrix showed distinct factor loadings above the defined cutoff and a low amount of cross-loading, which increased the interpretability and the clarity of the construct.

Factor 1 displays Customer Loyalty Value that reveals the intention of users to build long-term relationships to a brand after positive chatbots interactions, repeat usage, make a recommendation, and pay a premium. Such aspect implies that the trust towards chatbot interactions is not limited to instant gratification but carries over to the long-term behavioral and attitudinal loyalty. Factor 2 is composed of Chatbot Advice Credibility which is a perception of the truthfulness, credibility and reliability of the information and suggestions given by the chatbot. The fact that these items are grouped in a manner implying that a user is more prone to the advice provided by chatbots can be explained by the fact that it is perceived as honest, credible, and practical. Factor 3 competences Chatbot Service Competence is perceived ability of the chatbot to comprehend the needs of the user, display knowledge and solve the problems by itself and with precision. This element underscores competence as an important mental force of trust, where performance is consistent and able, this makes users trust AI-based

services. Factor 4 is Chatbot Service Experience that combines the perceptions of the smoothness of interactions, the quality of visual design, the assurance of privacy, and the emotional comfort during the usage of a chatbot. The factor proves the fact that the formation of trust depends on technical performance as well as on the experience quality of the interaction in general.

TABLE III: ROTATED COMPONENT MATRIX

Rotated Component Matrix					
	Component				
	1	2	3	4	5
Long Term Commitment	.771				
Purchase Intention	.717				
Shopping Simplicity	.684	.316	.331		
Suggestion Adoption	.671	.304	.308		
Reuse Intention	.671			.358	
Price Premium	.656				
Brand Advocacy	.643	.304	.355		
Customer Recognition	.623				.376
Emotional Bond	.620	.392			
Price Loyalty	.610	.449			
Privacy Trust	.579				.494
User Control	.479	.320			
Needs Understanding		.742			
Problem Solving		.645	.305		
Perceived Competence	.309	.637			
Information Accuracy		.621			
Quick responses	.408	.575			
Personalization	.420	.493			.354
Design Experience		.466	.373		.352
Data Security	.336	.445	.355	.302	
Customer Interest			.679		
System Reliability		.398	.648		
Proactiveness	.341		.639		
Information Credibility			.613		
Chatbot Confidence			.497	.490	
Availability				.784	
Friendly Tone				.624	.353
Language Clarity	.416			.590	
Brand Trust				.581	
Human-like language		.339			.633

V. DISCUSSION

The results of the current research show that the level of trust in AI chatbot interaction among Gen Z users is a multidimensional phenomenon that depends on the cognitive, relational, and experience dimensions. The fact that Customer Loyalty Value has become a significant force means that trust built during the interactions between chatbots is not limited to the completion of immediate tasks but has an impact on the long-term effects of behavior. Roy and Naidoo [19] and Pantano and Pizzi [18] argue in favour of the idea that reliance on AI based service interfaces leads to repeat usage, recommendation intention, readiness to pay a premium and unwilling to switch to other alternatives. The chatbot trust is a relational resource among Gen Z users that solidifies the brand attachment and the decision to engage in the future.

Chatbot Advice Credibility identification shows the significance of perceived sincerity, naturalness, and utility of chatbot-generated suggestions. Advice credibility unlike functional accuracy alone is the measure of the confidence that users have in the advice that chatbot gives them. Go & Sundar, 2019[21] and Ashfaq et al[2]. indicate that users make a distinction between information receipt and trust of this information in making a decision. The findings also indicate that the perceived wisdom and reliability of chatbots are improved with proactive and credible advice.

Chatbot Service Competence became one of the fundamental cognitive pillars of trust, as it captures the perceptions of the users in terms of the chatbot capacity to comprehend the needs, to exhibit knowledge, to solve problems by its own, and to provide correct answers. Diederich et al. [20] states that competence is presented as a condition to trust AI systems. Notably, the results reveal that Gen Z users consider competence not only in the correctness but also in autonomy and uniformity in service delivery.

The Chatbot Service Experience factor proves that the formation of trust depends on the holistic quality of interaction and not just on technical performance. The components like the ease of interaction, aesthetics, sense of control, data protection, and emotional assurance were grouped and implied that users evaluate the trustworthiness of the chatbots based on functional and aesthetic perception. This is consistent with previous studies that focused on the importance of experiential quality and emotions reassurance in the formation of digital trust as identified by Moussawi et al.[22]. The positive experience with the use of AI systems decreases the psychological distance to AI systems and strengthens the confidence of the users in further existence of the use of the chatbot-based services.

The theoretical framework used in the present research has defined customer trust in AI chatbots as the mediating factor that clarifies the way in which customer-related factors of the chatbot can be converted into downstream customer loyalty results. In particular, the model implies that trust is not the primary phenomenon that arises in a vacuum but is conditioned by a variety of antecedent conditions connected to the quality of chatbot performance and interaction. These antecedents of chatbot service competence, chatbot advice credibility, and chatbot service experience are the cognitive assessment, relational assessment and perceptual experience of the users of the chatbot during chatbot experience.

Trust, in its turn, serves as a decisive psychological process that connects the said antecedent factors to the customer loyalty outcomes. With the foundation of trust, users are better positioned to keep using the chatbot, refer other people to the brand, stay loyal in the long term, and show resistance to the rival alternatives. The framework emphasizes that the positive characteristics of chatbots are not enough to create loyalty without developing trust, and this aspect can be achieved by modeling trust as a mediator. This framework highlights how incredibly strategic trust-based chatbot design can be since trust is the channel, where functional performance and experiential quality can impact repeat usage, readiness to pay a premium and referral. Generally, the model offers a theoretically based articulation of how trust can help AI chatbots become a tool of transactional services rather than the relationship-building mechanisms in the long-term.

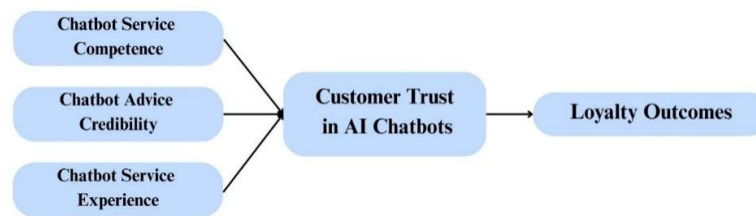


Figure 1. Conceptual Framework Linking Chatbot Trust Factors, Trust, and Customer Loyalty Outcomes

Combined, these results help to understand that trust is a core mediating variable which connects the design features of chatbots to the loyalty-related results. Instead of recreating service quality influences, the research shows that competence, credibility, and experience interact to create trust, which consequently determines continued involvement and decision-related to the brand.

On the whole, the discussion has shown that the credibility of service competency, believable advice, experience-based quality, and loyalty-driven result all interact to produce trust in AI chatbots among Gen Z users. Trust does not just mediate instant appraisals of the chatbot performance, but also has a role to play in future consumption and choice of brand. These results support the strategic significance of creating chatbot systems that combine technically outstanding design with plausible communication and superior service experiences to promote sustainable trust and long-term relationships with customers.

VI. CONCLUSION

This paper has analyzed the formation of trust during AI chatbot interactions among Gen Z customers and the effect of trust on subsequent consumer behavior. The results reveal that trust in AI chatbots is not a one-dimensional outcome but the resultant effect of the service competence, advice credibility and the experience of the service in general. The trust-building factors influence the confidence of users in chatbot-enabled services and have a direct impact on the loyalty-related results, such as repeat usage, recommendation intention, and long-term brand commitment. The findings show that Gen Z consumers assess the credibility of chatbots based on cognitive (e.g. competence and information credibility) and relational (e.g. comfort, control, and feeling of safety during interaction) judgments. The research also demonstrates that trust is a strategical variable in the process of making future choices regarding products and services. In case users think that chatbot interactions

are capable, trustworthy, and convincing, they will tend to trust chatbot-mediated recommendations and have continued relationships with the brand. This underscores the increasing role of trust-based chatbot design to not just immediate service appraisals, but also future behavioral intention. In terms of management, the results highlight the importance of creating AI chatbots as the service, trust-focused agents, as opposed to efficiency tools, a combination of correct problem-solving, reliable advice, and smooth service experience would help to maintain the consumer-focused engagement.

Future research can improve this research on a number of dimensions. To begin with, the comparative or cross-cultural research may involve the investigation of whether the trust development in AI chatbots differs among the generational cohorts or the cultural settings. Second, longitudinal research designs would be able to follow the development of trust throughout the series of repetitive chatbot interactions and the reaction to service malfunctions or privacy-related incidents. Third, the research can be extended with other relational or contextual variables in terms of various service industries (healthcare, banking, or public services) in which the requirements of trust are higher. These expansions would increase the applicability of the results and improve the insight into the nature of trust in AI-mediated service settings.

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