

Integrating Trust and Engagement to Improve Customer Experience: Advancing Trust Commitment within the Context of Chatbot Industry

ABSTRACT

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This study aims to analyze the factors that influence user experience in using chatbot services, focusing on the role of information quality, service quality, commitment, trust, and engagement. This study adds engagement variables as a novelty in this study. The primary theory in this work is trust commitment theory. Purposive sampling, which yields 300 samples, is used in this study's quantitative methodology. This study uses Structural Equation Modeling (SEM) analysis with the help of Amos Graphic software as a data processing tool. The results of the study indicate that information quality and service quality have a significant positive effect on user trust and engagement. In addition, user commitment also has a significant effect on user experience, as well as trust which plays an important role in improving user experience on chatbot services. This study provides important insights for chatbot service providers in improving service quality to increase trust, engagement, and user experience.

Keywords: Information Quality; Service Quality; Trust; Engagement; User Experience

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INTRODUCTION

Technological development has been one of the main factors driving the transformation of society throughout history. From the industrial revolution to the digital era, technological innovation has significantly changed various aspects of human life. Chatbot is one of the results of innovation in the technology field, and it has developed rapidly in the last few decades. Chatbot uses natural language processing (NLP) to understand the service user's message and turn it into understandable components. Information quality directly affects the performance, accuracy and relevance of AI services. Information Quality is defined as a function of a series of dimensions such as accuracy, timeliness, precision, reliability, recency, completeness of information, and relevance that provide a basis for measuring and monitoring the quality (Mattioli et al., 2022). Globally, the big data market is expected to grow to over \$401 billion by the end of 2028, up from \$220 billion last year. The quality of data in AI systems is critical to providing accurate information to users. A survey conducted by the Middle East, Africa, and Eastern Mediterranean countries found that poor data quality was a top concern for

456 data professionals (Harry Menear, 2024). AI providers will focus more on developing relationship marketing related to trust and attachment, which will impact increasing positive customer evaluations. Research from the United States states that AI is expected to soar to \$ 407 billion in 2027, because AI already has an attachment to users' daily lives. AI can develop emotional abilities that can increase commitment to continue using AI for a long time (Mark Travers, 2024). AI-based systems work on Black-box algorithms, so trust has to be built among customers who are going to start using the service. Trust is considered an important factor in the psychological state of an individual, which is influenced by exogenous factors (Kushwaha et al., 2021). Belief will affect the customer's behavioral response, which is created because the customer gets the information they are looking for, which will then affect the level of experience with the service. The benefits offered by the service will have an impact on increasing customer satisfaction and encouraging customers to interact with the service. User involvement will increase the level of trust and predictability, which will later contribute to the values of the service (Wilson, 2022). The many opportunities available require service providers to maintain commitment and trust towards users so that chatbots can always be relied on.

This research is based on the leading theory, where the theory is used as the primary reference material for the hypothesis that will be studied later. The theory used in this study is The Trust Commitment Theory. The Trust Commitment Theory shows that trust and commitment are the keys to marketing, because trust and commitment will effectively promote both parties in the transaction to maintain long-term cooperative relationships and partnerships for long-term benefits (You et al., 2022). The relationship between the ideals of commitment and trust is explained by the Trust Commitment Theory. If applied, the theory can increase customer engagement and experience by providing quality service and relevant information, which in turn impacts trust and commitment to Chatbot services. Applying Trust Commitment Theory can create strong and effective relationships that increase user satisfaction.

An attitude of trust formed by the interaction between the provider and the service user and is influenced by integrity, quality. Sensitivity to handling customer data makes the relationship between brand trust and customer experience very common in the context of digital experiences (Ameen et al., 2021). Data collection can be considered a threat to user privacy because their personal information is stored by the service provider. The data can be misused for certain purposes, which will result in a loss of trust for users who feel that their personal data is not protected. User trust in new technology grows with use over a period of time (Alagarsamy & Mehrolia, 2023). User trust will grow along with the positive experiences they get while interacting with the service.

This study has a novelty element by integrating the engagement variable into a model based on the Servqual Model, which is traditionally used to assess service quality. Service quality itself is a well-established concept that is widely used in various contexts. However, the uniqueness of this study lies in how service quality is conceptually linked to trust and engagement, thereby forming a new model that is relevant to the context of digital services. Previous studies have shown that good service quality can encourage

users to become more engaged with a brand, including by providing feedback or actively interacting (Ma & Ma, 2022). Therefore, the main contribution of this research is not in developing a new theory about service quality, but in expanding the application of the Servqual Model by integrating engagement as a mediating variable between service quality and trust, which has not been extensively explored in the context of chatbot-based service technology. Service quality is an extension of the service quality theory that focuses on infrastructure. Service quality can be divided into processing and non-processing facility service quality (Ma & Ma, 2022). Service quality theory focuses on assessing and measuring the quality of service provided to customers to understand customer satisfaction. Integration of novelty engagement in chatbot services can improve overall service quality.

Idea development First sourced from Vo et al., (2022) discovered that consumer engagement with a service is greatly and positively impacted by service quality. High customer engagement and positive customer experience can increase the likelihood of customers recommending a service to others. Second, research conducted by Hossain et al., (2023) found that information quality has a positive impact on engagement. Accurate, relevant and comprehensive information quality can increase user engagement. The higher the information quality provided, the greater the level of user engagement. Third, research conducted by Rather et al., (2022) shows that engagement has a significant and positive influence on customer experience. High levels of engagement will lead to better customer experience and can encourage customers to continue using the service.

Previous studies have shown research gaps. This research, discussing trust in customer experience, was conducted by Peña-García et al., (2024) with the results showing that there is an insignificant relationship between trust and customer experience. This is different from research conducted by Shahid et al., (2022) shows that trust plays a significant role in influencing consumer experience related to m-banking applications. Research on the relationship between service quality and engagement was conducted by (Dhasan & Kowathanakul, 2021) get the result that the service quality, functional, and engagement are said to be insignificant because the interview results show that even though the service quality is good, customers will find it difficult to increase and maintain loyalty if customers are not involved. The results are different from the research conducted by Panigrahi et al., (2021) shows that service quality plays a significant role in engagement, this is because service quality is a key factor that can increase student engagement in the context of e-learning.

LITERATURE REVIEW

Trust Commitment Theory

Trust commitment theory suggests that the influence of trust and commitment is a series of antecedents whose impact can be seen in an individual's behavioral intentions (Mukherjee & Nath, 2007). Trust commitment theory is the main foundation in this research because this theory emphasizes the importance of trust and commitment in

building and maintaining successful relationships, especially in the marketing context. Trust Commitment Theory shows that when trust and commitment are supported by the relationship between the two, optimal results can be achieved (Wang et al., 2020). Trust commitment theory emphasizes the importance of building and maintaining trust and commitment in building and maintaining trust. Trust Commitment Theory argues that commitment is described as the belief to maintain a relationship, while trust is one party's belief in another party.(Matubatuba, 2024). Trust commitment theory reflects the importance of trust and commitment in building relationships between sellers and buyers. Emphasizing that strong trust can increase consumer intentions to make purchase transactions and can build long-term loyalty. Trust commitment theory suggests whether trust and relationship commitment are integral parts of trust to address privacy concerns and increase consumer engagement (Abbas et al., 2023). Trust and commitment are essential for building long-term relationships, while the quality of information can increase trust and reduce privacy concerns.

Information Quality

Information quality is a subjective assessment by users of the characteristics of information that can meet service providers' needs and user objectives (Jiang et al., 2021). Assessment of information quality must be subjective so that service providers can compile and deliver information that meets the needs and expectations of service users. Information quality is determined by slow tempo, there is a vulnerable period for information absorption because the virtual and non-virtual worlds have a longer duration (Farhan & Marsasi, 2023). The media used and the context in which the information is conveyed are factors that influence users in accessing and processing information. Information quality has three dimensions, namely completeness, relevance and verification, which are useful for services to effectively focus on the consequences that will be related to users (Kumar & Utkarsh, 2023). Information quality, in the context of completeness, focuses on the extent to which the information is provided and must cover all data used. It describes the accuracy and precision of information provided by a service system. Timeliness is an important indicator of information quality because information must be produced on time and up to date.(Shahzad et al., 2021). In this study, information quality refers to how good the quality of the information provided by the service provider to the user is. The information provided greatly influences the user's perception of the chatbot service. The quality of information directly affects the performance, accuracy, and relevance of the service.

Service Quality

Service quality is recognized as the customer's approach or reaction to a service (Amoako et al., 2023). Users provide assessments and reactions to the quality of service they receive. Service quality measures the level of service provided to meet customer expectations (Watthanaklang et al., 2024). The difference between what the provider expects and what the recipient of the service expects. Practices that are consistently carried out to meet user expectations. Service quality assessment and evaluation is very important to understand its impact on the provider's results (Prentice & Nguyen, 2021).

High service quality will positively impact the profitability of service providers. Service quality provides criteria for evaluating the services provided, which are for assessing the quality of services before use, based on external information such as recommendations from friends or perceived benefits (Nguyen et al., 2021). In this study, service quality can be defined as the extent to which the services provided by the chatbot service provider meet the user's expectations. Service quality can also be interpreted as a user evaluation material for the ability to provide information and support according to needs.

Commitment

Commitment occurs when consumers with affective commitment continue to use the brand because they want and need to, whereas normative commitment occurs when consumers feel they must remain committed to the brand (Singh et al., 2022). These two types of commitment complement each other in creating long-term relationships. Commitment is based on rational decision making where users want to maintain long-term relationships (Accounting & Accounting, 2024). Commitment in the context of user relationships can be understood as a decision that is later based on comprehensive consideration. Users strive to maintain a long-term relationship with a brand or service. Commitment is the desire to maintain a relationship because of its perceived intrinsic value, such as customer satisfaction, which can strengthen the bond between the seller and the buyer (Fatma & Khan, 2023). In this case, Commitment can be defined as the level of involvement, loyalty of the relationship established between the user and the chatbot service provider.

Trust

Consumer satisfaction with a brand can create trust in the brand because it meets consumer expectations (Bagaskara & Marsasi, 2023). Satisfaction can create confidence that the service can fulfill the promises and expectations the user desires. Trust is a multidimensional construct that has a broad definition in various disciplines (Balakrishnan & Dwivedi, 2021). Trust is complex in nature, and it plays an important role in various types of relationships. This is because trust is not easy to build and is also difficult to maintain. Trust, conceptualized as a trait in relationships built through ongoing interaction, individuals can estimate and assess the value of future exchanges based on rational trust (Kim & Kim, 2021). Individuals can judge future exchanges based on the trust that has been built. The trust that is built can be an aspect for consumers to create an intention to behave again (Arfansyah & Marsasi, 2023). Trust can be determined by how the expertise of the service provider can influence the intention to continue using. Trust significantly influences intention because consumers believe that the service scheme will transparently disclose all relevant information to users while maintaining a strong commitment to optimal well-being (Marsasi et al., 2023). In this context, trust can be defined as the user's confidence when using a service. The service is considered reliable and meets user expectations. Trust is important in user services because it can influence the user's decision to interact with the chatbot service.

Engagement

Customer engagement occurs through interactions with other users or representatives of the service provider (Roy et al., 2022). These interactions usually take the form of support, empathy, and user experience regarding the services used. Customer engagement is defined as a state of involvement and commitment experienced by consumers during shopping, which attracts consumer attention and creates a sense of self-identification with the provider (De Canio et al., 2021). This aspect of engagement can be emotional, making consumers feel connected to the brand, which then has an impact on user commitment, who have the intention to continue interacting with the brand in the long term. Customer engagement is defined as an attitude of involvement that cannot be observed psychologically; it can be observed through behaviors demonstrated by consumers with service providers and triggered by interaction experiences (Asante et al., 2023). The complex process involving psychological and behavioral aspects is greatly influenced by consumers' interaction experiences with service providers. User engagement can be thought of as a series of actions that consumers take on social media in response to brand-related content such as reacting to sharing with others creating content by users (Zheng et al., 2022). In this study, engagement can be defined as a concept that refers to the interaction of relationships between users and service providers. Activities carried out to interact, engage and build positive relationships with users.

Customer Experience

Customer experience is used as a measure of the extent to which a service provides a positive experience for users (Rizky & Marsasi, 2024). User experience in the context of the relationship between provider and user is very important. Customer experience refers to every exchange of services and products encompassing all consumer shopping experiences, typically including the user's intellectual, emotional, behavioral and interpersonal reactions to brand-related activities (Yingfei et al., 2022). Customer experience is not only about the transactions made, but includes all transaction activities between the service provider and the user, both before, after, and during the transaction. Customer experience can be defined as a customer's evaluation of a smooth experience across brand channels (Rahman et al., 2022). Consumer Evaluation experience, this includes how users can assess the quality of their interactions and how well the channel provides a positive and satisfying experience for users. Customer experience is defined as the need for service providers to have the resources and dynamic capabilities to design and provide useful experiences for users. (Wetzels et al., 2023). It is important for service providers to have the resources and capabilities to design and deliver useful experiences for users. The goal of experience is to create a relationship between consumers and brands, this is because consumer knowledge of a brand depends on positive consumer experiences (Marsasi & Yuanita, 2023). In this context, customer experience can be defined as the feelings experienced by users while interacting with a service. Understanding user experience well is a very important key to building user loyalty and satisfaction.

Hypothesis Development

The Influence of Information Quality on Trust

Thuy et al. (2023), Meilatinova (2021), Odusanya et al. (2022), and Li & Xue (2021) discussed the effect of information quality on trust. These studies show that high-quality, relevant, accurate, and updated information can significantly increase user trust in services. Thuy et al. (2023) emphasized that reliable information encourages repeated use of services, while Meilatinova (2021) highlighted that complete and accurate information increases user satisfaction and trust. Odusanya et al. (2022) argued that information quality builds positive perceptions of service integrity, thereby increasing trust. In addition, Li & Xue (2021) noted that high information quality is essential in building public trust in e-government services and in evaluating service quality.

H1: There is a positive influence of information quality on trust.

The Influence of Information Quality on Engagement

Ali et al. (2021), Onofrei et al. (2022), Gosain et al. (2019), and M. Wang & Choi (2022) discuss the effect of information quality on engagement. These studies show that relevant, personalized, and easy-to-understand information can increase user engagement. Ali et al. (2021) emphasize that high-quality information can improve user experience and loyalty, as users are more likely to engage with a service when the information is relevant to their needs. Onofrei et al. (2022) highlight that high-quality information increases consumer satisfaction and brand awareness, and encourages active user participation. Gosain et al. (2019) note that high-quality information presented on a brand page increases user attention and interaction with the service. Similarly, M. Wang & Choi (2022) emphasize the importance of accurate and relevant information in increasing consumer engagement and strengthening the relationship between users and services.

H2: There is a positive influence of information quality on engagement

The Influence of Service Quality on Trust

Kim et al. (2023), Sirimongkol (2022), Qalati et al. (2021), and Shie et al. (2022) discusses the effect of service quality on trust. These studies show that good service quality can increase user trust in service providers, which in turn increases privacy protection and user loyalty. Y. Kim et al. (2023) emphasize that good service quality can create a positive perception of service reliability, which increases user trust. Sirimongkol (2022) highlights the importance of developing service quality dimensions to increase customer trust and loyalty. Qalati et al. (2021) show that good service quality can affect purchase intentions and build long-term relationships with users. Shie et al. (2022) also note that the higher the service quality, the higher the level of customer trust in the service.

H3: There is a positive influence of service quality on trust.

The Influence of Service Quality on Engagement

Ananda et al. (2023), Bacala et al. (2024), Islam et al. (2019), and Kankhuni et al. (2023) discusses the effect of service quality on engagement. These studies show that good service quality can increase user satisfaction, which then has an impact on the level of user engagement. Ananda et al. (2023) emphasize that good service quality encourages users to engage more deeply with the brand, which can increase user retention. Bacala et al. (2024) highlight the importance of empathy in service quality, which can increase user engagement and loyalty. Islam et al. (2019) note that service quality has a significant effect on brand experience and user intention to continue using the service. Kankhuni et al. (2023) show that good support can increase engagement, which in turn increases overall user satisfaction and experience.

H4: There is a positive influence of service quality on engagement

The Influence of Commitment on Customer Experience

Senathirajah et al. (2024), Trawnih et al. (2022), and Rizomyliotis et al. (2022) discuss the effect of commitment on customer experience. These studies show that a strong commitment to a brand or service can improve the overall user experience. Senathirajah et al. (2024) emphasize that a well-established commitment will increase user satisfaction and loyalty. Trawnih et al. (2022) identified that emotional, normative, and calculative commitments can strengthen user experience, where emotional commitment and providing clear information can strengthen user attachment to the service. Rizomyliotis et al. (2022) noted that long-term commitment can increase user satisfaction and strengthen loyalty, due to the positive experience resulting from good interactions between users and services.

H5: There is a positive influence between Commitment and Customer Experience.

The Influence of Trust on Customer Experience

Tulcanaza-Prieto et al. (2023), Bawack et al. (2021), and Mosallamy & Metawie (2022) discusses the influence of trust on customer experience. These studies show that trust plays a significant role in creating a positive user experience. Tulcanaza-Prieto et al. (2023) emphasize that a high level of trust improves user experience and strengthens their loyalty. Bawack et al. (2021) reveal that trust allows users to feel comfortable sharing personal information, which in turn improves user experience. Mosallamy & Metawie (2022) show that trust is a major factor in building satisfactory service quality, which has a direct impact on user experience.

H6: There is a positive influence on trust towards customer experience

The Influence of Engagement on Customer Experience

Winell et al. (2023), Ahmed et al. (2022), Zaid & Patwayati (2021), and Rather & Hollebeek (2021) discuss the influence of engagement on customer experience. These studies show

that high engagement, both emotional and cognitive, can improve the overall user experience. Winell et al. (2023) emphasize that good engagement can strengthen user loyalty and expand market reach. Ahmed et al. (2022) show that affective engagement contributes to a good user experience, which ultimately influences user behavior and increases loyalty. Zaid & Patwayati (2021) highlight the importance of emotional and cognitive experiences in building higher engagement, which has an impact on positive user experiences. Rather & Hollebeek (2021) note that high engagement can create positive experiences that drive user loyalty.

H7: There is a positive influence on engagement on customer experience

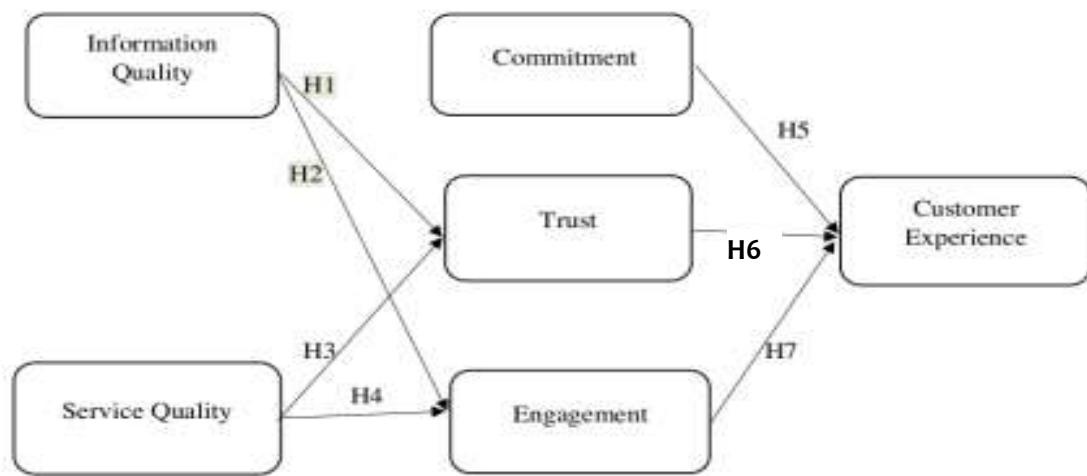


Figure 1. Research Model

Source : authors

METHODOLOGY

This study uses a quantitative approach to test hypotheses by collecting data from many respondents. This approach allows researchers to test theories and relationships between independent and dependent variables. This study uses nonprobability sampling using purposive sampling techniques. The author uses purpose sampling techniques based on the target respondents and specific characteristics. The criteria for respondents required for this study are Generation Y and Z respondents who are active chatbot service users. In this context, active users are defined as individuals who have used chatbot services at least twice in the last month, whether for communication, information search, or customer service needs. These criteria were applied through screening questions at the beginning of the questionnaire to ensure that only eligible respondents could proceed with the survey. A detailed explanation of these criteria not only clarifies the respondent selection process but also enhances the validity and reliability of the research methodology. In this study, the variables used include information quality, service quality, commitment as independent variables, customer experience as dependent variables, and trust and engagement as mediating variables.

The Likert scale is used to measure the extent to which respondents agree or disagree with the statements in the questionnaire, with five levels ranging from "Strongly Disagree" to "Strongly Agree". Data collection was carried out by distributing questionnaires online using platforms such as Google Form, WhatsApp, Facebook, and Instagram, as well as through personal chat and direct interaction in several cities in Java.

The questionnaire used in this study is divided into two types: first, descriptive questions that collect demographic information of respondents, and second, questions that focus on research variables, namely information quality, service quality, commitment, trust, engagement, and customer experience. Sampling was carried out using purposive sampling, where respondents were selected based on certain criteria, such as being active users of Generation Y and Z chatbots. The research sample used in this study were users of the ChatGPT, Deepl.ai, Jenni.ai, and chatbot services. The questionnaire was distributed to several regions such as Semarang, Surabaya, Banten, Yogyakarta, and Solo. Researchers used population data from generations Y and Z as a reference to determine the number of respondents to be distributed in each city.

Structural Education Modeling (SEM) technique is applied in this study as the analysis method. SEM is a statistical technique that is used in analyzing between indicators to directly identify the errors found. The SEM method can analyze the variables used directly (Hair et al., 2019). AMOS Graphics 24 and IBM SPSS Statistics 27 are used in this study as a tool for processing large amounts of data. Testing of the main research data will be carried out in several stages. These stages consist of several that are carried out, namely validity testing, reliability testing, hypothesis testing, structural model testing, goodness of fit, normality and outlier testing, and measurement models. Data input to the SEM testing stage will be operated using Confirmatory Factor Analysis or factor analysis testing.

RESULTS

Respondent Profile

The respondent profile of this study consists of 300 chatbot service users, the majority of whom are from generation Y and Z, with an age range of 21-30 years covering 74% of respondents. Most of them have a high school or bachelor's degree (80%) and work as private employees (34%) or students (26%). Respondents are spread across Java Island, with the cities of Solo (24%) and Yogyakarta (22%) as the largest. The income of the majority of respondents ranges from IDR 2,500,000 to IDR 4,000,000 (37%). This profile shows that chatbot service users are dominated by young, educated individuals with middle to upper incomes who need fast and effective information.

Validity Test and Reliability Test

Researchers processed data from 300 respondents who had been collected when distributing questionnaires. Pearson correlation measures and significance levels were used as references in the validity test. If the Pearson correlation value ≥ 0.5 and the

significance level value ≤ 0.05 , the item can be said to be valid (Hair et al., 2019). The IBM SPSS 29 software program is a medium used by researchers to conduct validity tests.

These findings confirm the adequacy of the validity test. There are 37 indicators that are said to be valid and can be used as an assessment in this study. Indicator of Information quality have a Pearson correlation value ≥ 0.5 ; service quality, commitment, trust, engagement, Customer Experience variables have a Pearson correlation value ≥ 0.5 . This means that the six variables analyzed have good validity because the value is above 0.5. Then, the next step is to conduct a reliability test to assess the dependency of the question items in the questionnaire and ensure that respondents provide consistent answers for each question item. This test was carried out using IBM SPSS Statistics 29. When each variable has a Cronbach Alpha value ≥ 0.7 , it can be said that the variable is reliable (Hair et al., 2019). Indicator of Information quality have a Cronbach's Alpha value ≥ 0.7 ; service quality, commitment, trust, engagement, Customer Experience variables have a Cronbach's Alpha value ≥ 0.7 . This means that the six variables analyzed have good reliability because the value is above 0.7. The reliability results state that the variables in this study have been measured accurately and reflect the behavior to be studied.

Although statistically all indicators have met the criteria for validity and reliability, a more in-depth interpretation is needed to understand the practical implications of these findings. The high Cronbach's Alpha value reflects the homogeneity of items in each construct, indicating that respondents provided consistent responses to the items measured. Meanwhile, the strength of the Pearson correlation between the indicators and their main constructs shows that each item has a significant contribution in explaining the latent variables being studied, thereby strengthening the conceptual validity of the instrument. Specifically, information quality and service quality as exogenous factors play an important role in shaping users' initial perceptions of chatbots, which form the basis for building trust and commitment. The validity of the indicators within the construct reinforces the reliability of the instrument in capturing respondents' objective perceptions of the quality of the technology they use.

Thus, these results not only demonstrate the statistical suitability of the instrument but also confirm that each variable studied is capable of capturing the theoretical and practical dynamics of the relationships between constructs in the context of chatbot use by Generation Y and Z. This strengthens the validity of the conceptual model in explaining how service and information quality can trigger trust and commitment, which in turn enhance customer engagement and experience.

Measurement Test

Measurement Test conducted to test the measurement model using Amos Graphic 24 software and Confirmatory Factor Analysis (CFA) techniques. The purpose of this test is to ensure that the indicators used in the study can represent the variables studied.

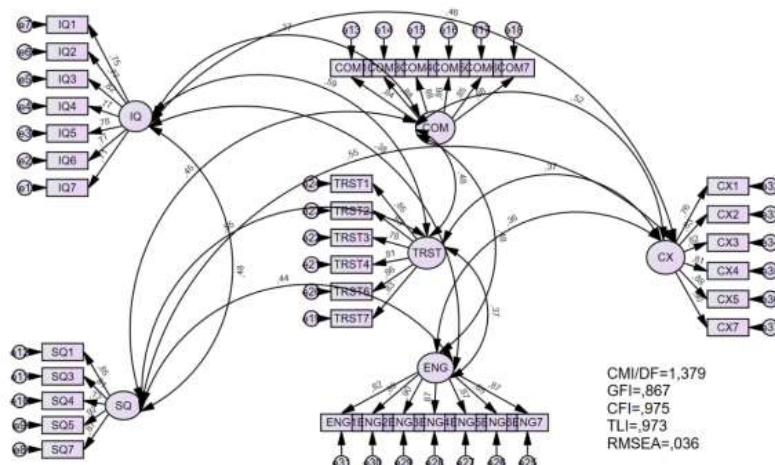


Figure 2. Measurement Test
Source: Primary Data Processed, 2024

Referring to Figure 2, the results of the model test show the importance of paying attention to the loading factor value. This value is used to assess whether the indicators used can represent the variables well or not. The results of the loading factor analysis show that all tested variable indicators have a loading factor value ≥ 0.5 , which indicates that all indicators in the research model are valid. Furthermore, the Goodness of Fit (GOF) test was conducted to evaluate the suitability of the model, with five indices used: CMIN/DF, GFI, CFI, TLI, and RMSEA. The test results show that the research model meets good criteria, with a CMIN/DF value of 1.379 (good fit), GFI 0.867 (marginal fit), CFI 0.975 (good fit), TLI 0.973 (good fit), and RMSEA 0.036 (good fit). A CMIN/DF value of 1.379 indicates that the model has a good fit, as it is within the ideal range of 1 to 3. This index describes the ratio between chi-square and degrees of freedom, and the closer it is to 1, the simpler the model is while remaining accurate.

Furthermore, although the GFI (Goodness of Fit Index) has a value of 0.867, which is slightly below the ideal threshold of 0.90, this value is still considered acceptable in the context of a complex model, as it still indicates that most of the variance and covariance in the data can be explained by the model. Furthermore, the CFI (Comparative Fit Index) value of 0.975 and the TLI (Tucker-Lewis Index) value of 0.973 indicate excellent model fit, as both exceed the ideal threshold of ≥ 0.95 . These two indices compare the research model with an independent model and penalize model complexity, so high values reflect the model's efficiency and accuracy in explaining relationships between variables. Finally, the RMSEA (Root Mean Square Error of Approximation) value of 0.036 indicates a very low level of model approximation error, where a value below 0.05 indicates that the model has a very good fit with the population data. Based on these five indices, it can be concluded that the measurement model used in this study is statistically feasible and valid for use in the subsequent structural analysis stage. Although the GFI value is slightly below 0.9, overall the model can be said to be a "good fit", which means that the measurement model is acceptable and ready to proceed to the next stage of analysis.

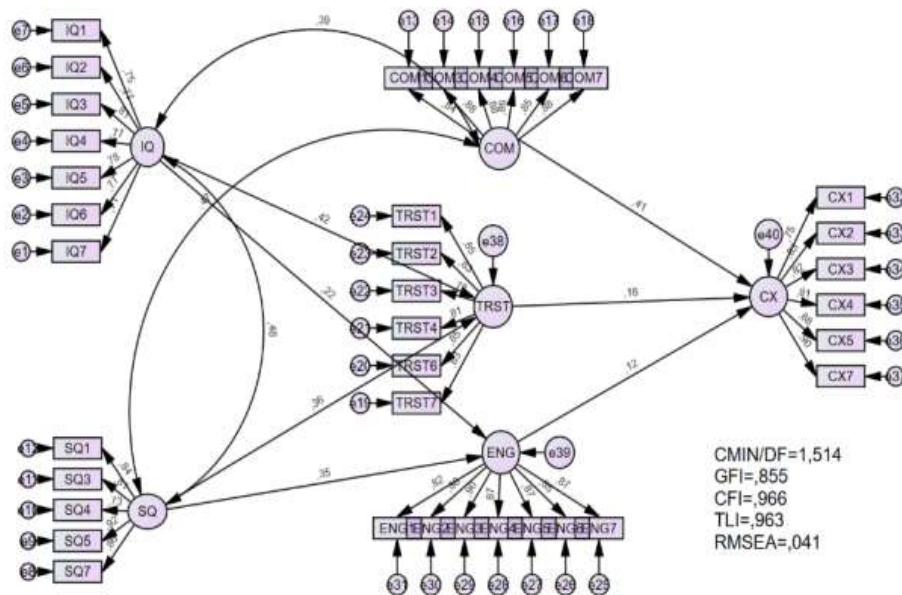


Figure 3. Structural Model Test
Source: Primary Data Processed, 2024

After conducting the measurement model test, the next stage is the structural model test which aims to assess the relationship between latent variables in the proposed model. The results of the structural model test using Amos Graphic 24 software show that this research model meets the Goodness of Fit (GOF) criteria. Based on the values obtained, CMIN/DF is 1.514 (good fit), GFI is 0.855 (marginal fit), CFI reaches 0.966 (good fit), TLI 0.963 (good fit), and RMSEA 0.041 (good fit). Although the GFI value is slightly below 0.9, overall this structural model shows good fit with the empirical data, with a model that is acceptable and ready for the next stage of analysis.

Hypothesis Testing

Hypothesis testing was conducted using Amos 24 software with a sample of 300 respondents. This test checks whether the hypothesis can be considered significant by looking at the probability value (P-value) and Critical Ratio (CR). P-value ≤ 0.05 and CR more than 1.960 are the main criteria for stating whether the hypothesis is supported or not. In addition, Standardized Regression Weight is also used to evaluate the relationship between variables. The results of hypothesis testing can be seen through images and tables that present P and CR values, which indicate whether the hypothesis is accepted or not based on predetermined criteria.

Table 1. Hypothesis Testing Results

Hypothesis	Path	Std. Estimation	CR	P	Std. Reg Weights	Information
H1 (+)	IQ → TRST	0.589	6,659	***	0.425	Supported
H2 (+)	IQ → ENG	0.376	3.378	***	0.220	Supported
H3 (+)	SQ → TRST	0.349	6,659	***	0.356	Supported
H4 (+)	SQ → ENG	0.420	5.393	***	0.349	Supported
H5 (+)	COM → CX	0.342	6.605	***	0.413	Supported
H6 (+)	TRST → CX	0.144	2,621	0.009	0.157	Supported
H7 (+)	ENG → CX	0.090	2.104	0.035	0.120	Supported

Source: Primary Data, processed 2024

From the data above shows that all seven hypotheses tested in this study are significantly supported. The test results show a strong relationship between the variables tested, with a CR value higher than 1.960 and a P value less than 0.05. This indicates that the measurement model in this study has been completed and the hypotheses tested can be accepted.

DISCUSSION

The Influence of Information Quality on Trust

The results of the study show that Information Quality has a significant and positive influence on Trust. The first hypothesis (H1) which tests the relationship between information quality and user trust found a CR value of 6.659 and a P-value of 0.000, indicating a strong and significant relationship. This finding is in line with previous studies which state that information quality has a positive influence on user trust (Thuy et al., 2023; Meilatinova, 2021; Odusanya et al., 2022). The researchers also emphasized that the quality of information provided by chatbot services, such as accurate, relevant, and easy-to-understand information, will strengthen user trust in the service. Users are more likely to trust services that provide information that suits their needs and is presented in a neat and consistent manner. Therefore, high information quality greatly determines the user experience and increases trust in the services provided.

The Influence of Information Quality on Engagement

The results of the study indicate that Information Quality has a significant positive effect on Engagement. The second hypothesis (H2) which tests the relationship between information quality and user engagement obtained a CR value of 3.378 with a P-value of 0.000, indicating a strong and significant relationship. This finding supports previous studies which state that relevant and easy-to-understand information quality can increase user engagement (Ali et al., 2021; Onofrei et al., 2022; Gosain et al., 2019). High information quality, such as accurate and relevant information, can attract users' attention and encourage them to be more actively involved with the service. Users feel more connected to the service when the information provided is in accordance with

their needs and is easily accessible. Thus, the better the quality of the information received, the higher the user's engagement with the service provided.

The Influence of Service Quality on Trust

The results of the study show that Service Quality has a significant positive effect on Trust. The third hypothesis (H3) with a CR value of 6.659 and a P-value of 0.000 supports the findings of previous studies which state that good service quality can increase user trust in the services used. This study is in line with the findings of Kim et al. (2023), Sirimongkol (2022), and Qalati et al. (2021) which state that high service quality strengthens user trust. Fast, responsive, and reliable services, such as in the case of chatbots that provide consistent and relevant answers, can increase user trust. Users are more likely to trust services that provide clear and accountable information, which ultimately has an impact on privacy protection and improving the overall user experience.

The Influence of Service Quality on Engagement

The study also shows that Service Quality has a positive and significant effect on Engagement. The fourth hypothesis (H4) with a CR value of 5.393 and a P-value of 0.000 indicates that high service quality can increase user engagement. The results of this study are consistent with the findings of Ananda et al. (2023) and Bacala et al. (2024) which show that good service quality can encourage user engagement and increase their satisfaction. When users feel that the service provided can meet their needs appropriately, they will be more emotionally involved with the service. Positive experiences obtained from responsive and relevant services can strengthen the relationship between users and service providers, and increase user retention.

The Influence of Commitment on Customer Experience

The results of the study show that Commitment has a positive and significant influence on Customer Experience. The fifth hypothesis (H5) with a CR value of 6.605 and a P-value of 0.000 supports previous studies which reveal that commitment plays an important role in shaping user experience. This finding is in line with research from Senathirajah et al. (2024) and Trawnih et al. (2022) which states that a strong commitment to a service can improve user experience. Users who feel comfortable and satisfied with the sophistication of chatbot services, such as their ability to analyze multiple languages and provide relevant answers, are more likely to continue using the service. New experiences gained from more sophisticated and convenient chatbot services can strengthen user commitment, which in turn increases their loyalty to the service.

The Influence of Trust on Customer Experience

This study also found that Trust has a positive and significant effect on Customer Experience. The sixth hypothesis (H6) with a CR value of 2.621 and a P-value of 0.009 indicates that trust plays an important role in shaping user experience. These results

extend the findings of Tulcanaza-Prieto et al. (2023) and Bawack et al. (2021) which state that trust improves user experience in using services. Trust that is built from positive user experiences with chatbot services, which are fast, easy, and in accordance with user expectations, strengthens the overall experience. Users who are satisfied with the service provided will be more likely to continue using the service and recommend it to others, indicating that the higher the user's trust in the service, the better the experience received.

The Influence of Engagement on Customer Experience

The results of the study show that Engagement has a significant positive effect on Customer Experience. The seventh hypothesis (H7) with a CR value of 2.104 and a P-value of 0.035 supports previous studies which state that user engagement contributes positively to their experience. Research by Winell et al. (2023), Ahmed et al. (2022), and Rather et al. (2022) states that engagement, both affective and cognitive, can improve user experience and strengthen their loyalty to the service. The emotional experience experienced by users while interacting with chatbots plays an important role in increasing engagement, which in turn improves their experience. Users who are satisfied with fast, responsive, and accurate interactions will be more engaged and tend to continue using the service.

CONCLUSION

Based on the research results, the researcher concluded the relationship between the hypotheses that have been proposed in this study. Hypothesis hthe relationship between information quality and trust has a positive and significant influence. the relationship between information quality and engagement has a significant and positive influence. The more users get good quality information, the more users will indirectly feel bound to the chatbot service. The relationship between service quality and trust has a significant positive influence. The hypothesis of the relationship between service quality and engagement has a significant positive influence. The relationship between commitment and customer experience has a significant positive influence. The hypothesis of the relationship between trust and customer experience has a significant positive influence. The relationship between engagement and customer experience has a significant positive influence.

Implications of the Research

This research can contribute by applying a theory, namely the trust commitment theory. The theory focuses on the trust and commitment of users to the chatbot service used. The theory emphasizes trust and commitment to build a strong relationship between service providers and service users. Trust plays a role in building a primary trust so that users can establish engagement which then has an impact on building a positive value of the user's customer experience.

Limitation and recommendations

This research only applying trust commitment theory. Further research should be novel by using stimulus-organism-response theory (SOR). This theory can provide insight that can help users to interact with services that will have a negative effect on the use of services. This theory is used by service providers to help understand the problems and understand the reasons why users use the services used. Another suggestion for further research can be novel by adding a perceived risk variable. Perceived risk can affect the intention to use the chatbot service offered through service quality towards engagement. The addition of new variables and changes to the theory used have the aim of making further research more varied. Further research is then expected to obtain good and accurate research findings.

This study can provide insight to managers of chatbot service companies ChatGPT, Jenni.ai, Deepl.ai and others about factors that can influence the user process of using chatbot services. The first suggestion given by the author is, it can provide new insights into factors that can improve service quality and its impact on satisfaction that affects user loyalty. The second suggestion is that chatbot services can develop metaverse technology in future research to study user experience can change when users start interacting with the chatbot services used. The third suggestion is, collaborating with influencers such as Billie Eilish and BTS, they use chatbot technology to interact and communicate with fans.

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