Managing Customer Trust and Satisfaction on Chatbots in the Retail Industry

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Abstract

This study investigates the relationship between the user interface and problem-solving towards the continuous intention to use the services. New products or services will always face tough challenges for the customer, especially when the new procedures require them to learn and change some behaviors. Chatbots are also facing the same situation in Malaysia, where customers refuse to accept using chatbots to represent their physical presence. To understand customer behaviors, a quantitative survey was designed. Four hundred twenty-two data were collected from the online survey method. As per the results, the predictors of chatbot continuous intention are user interface and problem-solving. Apart from that, this study also measures the role of mediator, namely trust and customer satisfaction. This study contributes to unique academic and practical insights that can be used to explore the effectiveness of chatbots. The results revealed that both predictors were significant towards the continuous intentions. Besides, the role of the mediator was found to be significant and

relevant in the relationship between trust and customer satisfaction and customer satisfaction and trust towards continuous attention.

Keywords: Chatbots, User interface, Problem-solving, Intention.

Introduction

Digitalization purportedly offers intelligent solutions that facilitate business growth and efficiency while enhancing customer satisfaction. However, the effectiveness of these solutions in achieving these objectives remains subject to empirical investigation. Notably, the latest technological innovation in customer service is voice Artificial Intelligence (AI), which promises to revolutionize how businesses communicate with their customers. Although chatbots, AI-powered programs designed to facilitate communication, have become increasingly popular, their ability to provide effective and efficient customer service remains a subject of debate (Eren, 2021). It is often constructed on a programming platform with user interfaces for cloud storage, monitoring, and database management. Through text or text-to-speech functionality, chatbots are frequently utilized as digital assistants in various contexts, including but not limited to messaging services, smartphone apps, websites, and other digital devices (Omoge et al., 2022).

The application of machine learning and artificial intelligence-driven technology has bestowed upon chatbots an unprecedented level of efficacy. According to estimations, chatbots possess the capability to autonomously manage a substantial 68.9 percent of chat interactions from inception to conclusion, without necessitating any intervention from the user. This technology presents a significant temporal advantage for entities seeking to mechanize specific functions, such as client assistance and the resolution of frequently posed inquiries regarding commercial transactions. The integration of chatbots into the consumer purchasing experience has become an indispensable component. They can be used to address shipping inquiries or refund requests, and they are a quick and easy way for customers to ask questions regarding the goods. As chatbot technology improves functionality and accuracy, it may be possible to sell goods and services to customers without communicating with them directly (Hentzen et al., 2022). Chatbots can be applied in many contexts (Nguyen, 2020). Chatbots will eventually make it simpler for clients to finish their sales experience. The chatbot's advantages are improved operational effectiveness, customer communication, promotion of the company's brand, tracking and management of data, smoother handling of

financial transactions, and computerized inbound marketing and qualification procedures (Rakib et al., 2022).

One of the primary elements contributing to the expansion of the chatbot industry is the increasing importance placed on customer participation across various platforms worldwide. The economy's expansion can be attributed partly to businesses" growing importance on customer service to reduce overhead costs and meet rising consumer expectations for self-service options (Magno & Dossena, 2022). Efforts to create self-learning chatbots that deliver a more human-like contact experience are affecting the sector, as is the growing demand for round-the-clock customer service at lower investment costs. Furthermore, strict passenger safety regulations, rapid technological advancements, rising urbanization, and consumers" growing preference for messaging services over social networking websites all favor the chatbot market.

However, the industry's expansion is anticipated to be impeded by problems, including inaccurate user voice authentication and the inability to accurately determine a customer's meaning. According to Howarth (2017), "Humans are instinctively designed to react to novel things in a way that aims to protect oneself," As a result, people are often resistant to new technologies because they force them to adapt to changes in their immediate environment (De Cicco et al., 2020). The chatbot market is projected to have obstacles over the predicted period due to a lack of awareness regarding chatbot technology's influence on various applications.

Literature Review

Over the past two decades, e-commerce has virtually transformed the buying and selling of goods. The COVID-19 pandemic has further underscored the true value of e-commerce by enabling people to shop and do business online in the face of lockdowns and stay-at-home emergency protocols (Pal et al., 2022). Today, we utilize AI chatbot technology to empower conversational commerce. Originally when both were starting, conversational commerce centered on customer support. We began thinking about users reaching out to the company. The customer asks many questions, but the company takes so long to respond or is unavailable 24/7. Such a situation leads to a negative customer experience (Pitardi et al., 2022).

Initially, people used chatbots more for customer support to track an order, get a refund, or cancel the order. Then the bots changed their narrative to conversational commerce. The company deployed the chatbot to sell products, acquire customers, and generate revenue. Soon many companies realised that these channels were so powerful that they could help to increase revenue. As a result, bots slowly evolved into this conversational commerce powered by AI chatbots.

Integrating technology in the retail industry has facilitated efficient order fulfillment by automating scheduling, dispatch, and routing operations through artificial intelligence. As a result, customers benefit from a streamlined delivery process that ensures timely and accurate delivery of their orders. However, to ensure customer satisfaction, it is imperative to keep customers informed of the delivery status and provide them with an opportunity to provide feedback through interactive communication channels.

Chatbots are increasingly being utilized for customer engagement, creating opportunities for deeper relationships and uncovering additional sales opportunities. By providing a seamless delivery experience, customers are more likely to respond positively to follow-up messages, increasing positive reviews and feedback for chatbot-assisted online services. However, the efficacy of chatbots in enhancing the customer experience and creating positive customer reviews warrants further empirical investigation.

On the whole, the reaction of consumers to the new technology is valid and has been expected. Consumers need more time to get used to technology (Sidaoui et al., 2020). At the same time, the company should be ready to ensure that the services provided are friendly to customers both systemically and benefiting the user. Users will support the technology if it can solve their problems. We must look at it as if we want to make the most positive contribution to our lives.

Chatbot's features offered many advantages, but as the services are still new, many customers refused and were reluctant to adopt the new practices (Xu et al., 2022). Most complaints highlighted the user interface and problems that cannot be solved using the services. A past study also highlighted trust and satisfaction as factors that must be prioritized. This paper explores the role of user interface and problem-solving towards customer trust and satisfaction. This paper also aims to measure the effect of trust and satisfaction towards continuance intentions based on the e-retail industry in Malaysia.

This study is based on TRA as a model to consider three dimensions of service quality, i.e. user interface, reliability, and responsiveness. These three factors are partly the dimensions of SERVQUAL. This study combined reliability and responsiveness as problem-solving. This study aimed to examine the impact of user interface and problem-solving on implementing chatbots in the e-retail industry. Trust and customer satisfaction are the mediators in the studies related to e-retail service systems.

The user interface in this study refers to the user's comfort in using the chatbot conveniently, overall design, and ease of navigation. According to past studies, users will constantly object to something new due to a lack of trust in new concepts. As a result, users claimed to be less satisfied with their experiences using the services of chatbots.

According to (Jones, 1996), customer trust is important as it can lead to an effective attitude. In placing an order online, 'satisfaction' refers to a state of mind favoring the purchased product or service. The theory of Rational Actor Behavior (TRA) asserts that behavioral beliefs can influence attitudes toward behavior.

Continuous Intention

The continuous intention in this study refers to customers who intend to use or reuse the system on an ongoing basis (Chatbots). In general, digital transformation is about implementing agile practices and maintaining a high level of agility (Pal et al., 2022). In the event of successful implementation, agile practice is very beneficial and helps the organization with transformation. Yet implementing such a practice does not always guarantee transformation (Cheng & Jiang, 2022). The success of digitalization is crucial for every business. McKinsey's global survey found that successful transformations use agile ways of working. The path to digitizing an entire enterprise is long and challenging, especially for companies still using legacy processes. With agile practice, the risk of failure is significantly reduced (Rita et al., 2019). Agile is not only used to adopt digital transformation within the company. Businesses can also use it to improve customer experience delivery to consumers. The important thing is to provide users with a positive experience to continue using the facilities provided (Al Qudah et al., 2020).

Today is the age of the client. And the company knows this. Most of their digital transformations begin with increasing customer satisfaction as the core. Technology can help companies build excellent customer satisfaction and ultimately reap the rewards (Nguyen, 2020). Besides customer satisfaction, customer trust is also important to ensure that users stay on the network. E-retailing is not just about offering high-quality products or services; It provides and shows value through offers and suggestions that customers are interested in (Hsiao & Chen, 2022). They will trust you more when they feel you have given them value by offering them what they need. This raises loyalty and the possibility of customer loyalty.

Past studies have suggested that using new technology-based methods should provide customers with a wide range of user interfaces and the ability to solve customer problems (Doborjeh et al., 2021; Jiménez-Barreto et al., 2022). In this context, the chatbot provided should increase customer engagement and satisfaction. From it, the convenience and comfort of the service should be arranged so that the user does not feel burdened or frustrated at not being able to fulfill their needs (Fan et al., 2022). Customers will be delighted when they can take advantage of self-service tools easily and seamlessly.

In addition, past studies have also suggested that Systems and networks must be reliable and available for customer needs (Yoon & Yu, 2022; Battour et al., 2022). Ease of use gives customers a quick buying trip with minimal friction. Finally, Bots are useful and can help us

in the digital field. Moreover, the technological process of fine-tuning the concept of human psychology helps us leap our knowledge and business practices.

User Interface

Past research stated that customers are more interested in transacting on a user-friendly and reliable online technology-enabled platform. The implementation of the chatbot is something new, especially in developing countries. This AI-enabled customer service is the least unexpected, especially in using chatbots. Technically, the client will assume that the relationship between humans and human is more practical and friendly with the ability to understand the problem regarding grievances, emotions, and tone of voice (McLean et al., 2020). Exposure to new things requires user exposure and acceptance by providing a system that has a customer-friendly user interface. This is reflected in previous research showing how user interface factors, such as how easy and beneficial they are, can affect trust and pleasure while using chatbots for continuous intent (Sharma et al., 2022).

When interacting with chatbots, our brain believes it is chatting with other humans. This happens because bots seek to create false mental perceptions during interactions by encouraging users to assume bots have human-like characteristics (De Cicco et al., 2020). This will certainly look foreign but can be overcome by providing a user interface that facilitates the customer.

Problem-Solving

Problem-solving is seen as one of the important factors in implementing Chatbots. The purpose of implementing chatbots is to serve customers better. In this investigation, the term "problem-solving" refers to the capacity of the chatbot to provide accurate solutions to problems per the consumer's preferences. Previous research has demonstrated that the primary objective of AI customer service robots is to raise overall productivity levels (Jiménez-Barreto et al., 2021). At the same time, the main factors are improving customers on the level of convenience, efficiency, and ease of use (Rana et al., 2022). As such, it is important to evaluate from time to time whether the chatbot will link the organization and the customer. The replies users give to chatbots nowadays still range from complacency to not being interested (Pal et al., 2022). Some of the respondents get their replies more swiftly when using AI services. This response demonstrates how soon an AI customer care robot that can save time while providing support and information more straightforwardly will garner great appreciation (Hsiao & Chen, 2022). At the same time, the organization should also assess the negative impact on users who have problems communicating with chatbots, thus encouraging them to look for other alternatives.

Chatbots' ability to solve problems contributes to anthropomorphism among e-retail chatbots' consumers. In this case, the technology behind chatbots has always been improved

as part of the effort to make them appear more human. In addition, confirming the behavior of AI customer service robots is vital since these robots communicate with humans via language (Abdulquadri et al., 2021). To earn customer trust, the products or services that can answer customers" concerns must at least enable them to meet customer expectations. In the context of the online experience, customer satisfaction can also be understood as a positive reflection of the service received by the customer.

One of the most important reasons for this research is to investigate users" thoughts and feelings after utilizing chatbot services. This has been deduced as a result of the concern regarding the responses and views of users, as well as the requirement to forecast their opinion regarding such services (Leung & Wen, 2021). In this study, the theoretical model that was provided explores the correlations between independent and dependent components. One of the topics covered is the effect of trust and pleasure as a mediator between the user interface and problem-solving in the direction of continuous intentions.

Hypotheses

These intentions are examined by their experiences based on their perception of the user interface and the problem-solving function. We aim to investigate the relationship between how users" interface and problem-solving influence customers to continue using chatbots. Furthermore, this study will also measure the role of trust and satisfaction based on the customer experiences of using the services. Figure 1 is the research model and the measurement relationship for the research.
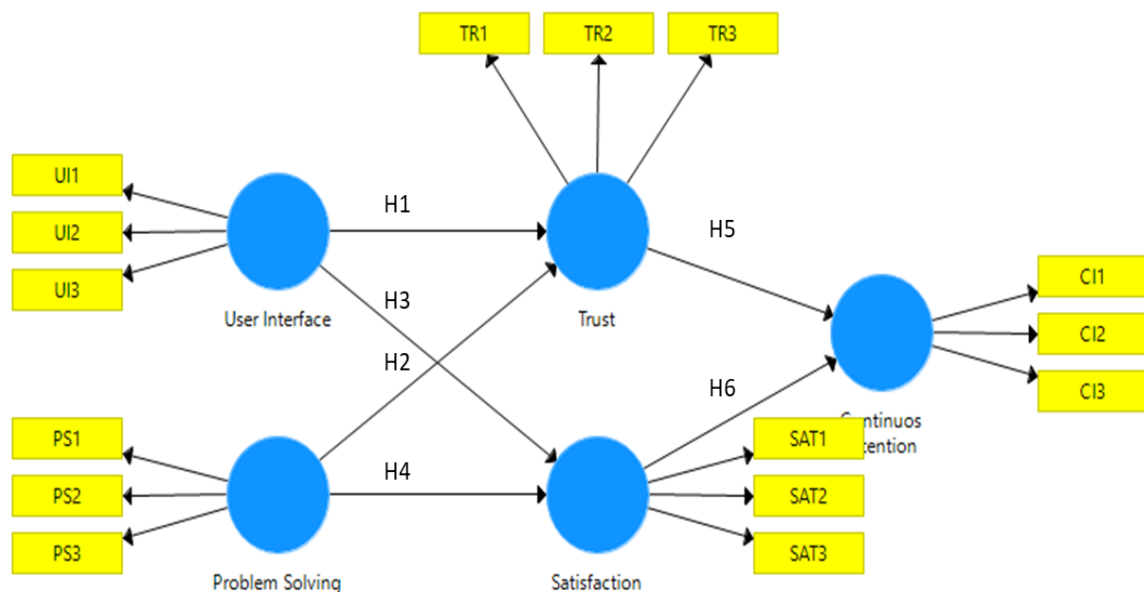

Figure 1. Research Model

According to Figure 1, the following hypotheses can be drawn:

H1: User interface positively influences the trust towards using the chatbot's

H2: Problem-solving positively influences the trust in using the chatbot's

H3: User interface positively influences the satisfaction towards using the chatbot's

H4: Problem-solving positively influences satisfaction with using the chatbot's

H5: Trust positively influences the chatbot's continuous intentions

H6: Satisfaction positively influences the chatbot's continuous intentions

H7: Trust mediates the relationship between the user interface and continuous intentions

H8: Satisfaction mediates the relationship between problem-solving and continuous intentions

Methodology

The research sought responses from specific groups because those groups were thought to be the most likely to supply the information required for the study and to meet the criteria that had been established. A chatbot utilized in online shopping in Malaysia is the focus of the investigation. The news, product information, and inquiry options are all accessible via a shortcut menu at the bottom of the chatroom. Customers can obtain the required information without typing it in themselves using the shortcut menu and clicking the buttons. Customers can begin placing a purchase in the chatroom by clicking the icon labeled "options". The customers will then be led through a series of easy steps by the chatbot to select the option that best suits their needs, the form of payment that they favor, and the location of the store where they would want to pick up the meal. The available buttons drive the majority of the conversations in the chatroom.

Across cross-sectional survey among the people who use e-retailing bot services was conducted to compile the research data. To construct and administer an online questionnaire for this research project, internet resources from Google were utilized. The webpage containing the questionnaire was shared on well-known social media websites (SNSs) for two weeks.

Customers who participated in online communities and SNSs were allowed to complete the questionnaire at leisure. Most of them completed the online form in between eight and ten minutes. There were 422 valid surveys after removing the duplicates, the partial responses, and the users who were not chatbots. The data on the personal information are presented in Table 1 below.

A structured questionnaire was prepared following the research that had been done, as well as the utilization of chatbots in the online retail industry in Malaysia. For this study, pre-existing scales were adapted, changed, and expanded. The survey's construct items were chosen based on previous research in the relevant field. It was decided to invite three professionals in the relevant field to assess the survey items and provide feedback on how they could be improved. The goods that helped solve the problems used Kozak's items (2002). The items proposed by Liljander et al. were utilized to measure user interface perception (2002). The weighting system for the trust is based on Choi and Lee's most recent iterations of the items (2017). The concept of satisfaction was borrowed from Choi and Lee (2017), and the idea of continuing intention was appropriated from Venkatesh et al. (2012). In each of the constructs, a five-point Likert scale was utilized, with values ranging from one (which indicated strong disagreement) to five (which indicated strong agreement). A cover letter was offered to guarantee the correctness and explain the study's goal. They inquired about the respondents" prior experiences with e-commerce chatbots and asked them to recall those experiences. Before being allowed to continue with the survey and participate in the research, participants were required to answer two screening questions regarding chatbot awareness and usage at the very beginning of the questionnaire.

The preliminary poll was broken up into six sections, which were as follows: chatbot awareness and use; demographics, user interface; problem-solving; trust; satisfaction; and desire to continue using chatbots. The preliminary questionnaire's language and reliability were put through a pilot test with an online convenience sample that we carried out to check our work. We made some changes to the questionnaire for the final data collection after reviewing the comments received from the preliminary test. The participants who responded to the pilot test were not included in the subsequent sample.

Results

The hypotheses of this study were tested and analyzed using Statistical Product and Service Solutions (SPSS) and SmartPLS. SmartPLS was deemed the more appropriate tool due to the formative constructs of the structural equation model. In particular, SmartPLS provides a path model that characterizes connections between variables and indicators, allowing for more latitude in the relational specification and model complexity. SmartPLS is more accommodating in terms of data needs because it does not necessitate distributional assumptions. Because of these merits, SmartPLS is an excellent instrument for probing the intricate interrelationships among the study's variables, which should lead to a richer and more nuanced comprehension of the study's central topics. Information about individual users is summarised in Table 1.

Table 1. Sample profile

Gender	Frequency	Percentage
Male	245	58.3%
Female	175	41.7%
Age (in years)		
Younger than 20	15	3.6%
20–29	65	15.5%
30–39	125	29.8%
40–49	159	37.9%
50 or older	56	13.3%
Highest level of education		
Doctorate	7	1.7%
Master's degree	105	25.0%
Bachelor's degree	287	68.3%
Other	21	5.0%
Income (RM)		
No income	12	2.9%
Less than RM3,000	118	28.1%
RM3,001 - RM6,000	141	33.6%
RM6,001–RM9,000	98	23.3%
RM9,001–$12,000	34	8.1%
More than RM12,000	17	4.0%
Experience in using AI chatbot		
Yes	391	93.1%
No	29	6.9%

The statistical analysis indicates that the variable with the highest mean value (3.843) is the intention to continue, whereas the user interface variable obtained the lowest mean value (3.419). In addition to the aforementioned, the standard deviation for trust exhibited a preeminent score of 0.933, whereas the user interface evinced the most inferior score of 0.550. On the whole, the findings indicate that the subjects had a favorable encounter with the technology and were inclined towards its sustained usage. Notwithstanding, the arithmetic means of the scores also suggest that there exists a scope for enhancement in domains such as reliance, contentment, and the interface for the end-user. The research could delve deeper into the determinants that underlie these construct scores, including distinct technological attributes or demographic traits of the subjects. Comprehending these variables may aid in pinpointing domains for refinement and augmenting the user's encounter, ultimately culminating in heightened acceptance and contentment with the technology.

Table 2. Means and SD of the construct*s*

Constructs	Means	SD
Continuance intention	3.843	0.785
Trust	3.619	0.933
Satisfaction	3.691	0.809
User interface	3.419	0.550
Problem-solving	3.752	0.816

According to the study results, there was a strong relationship between the continuation Intention construct and its underlying items, as evidenced by a factor loading of 0.843. The construct appears to have high internal consistency and reliability, as indicated by the high Cronbach's alpha value of 0.905 and composite reliability of 0.762.

The AVE value of 0.762 suggests that the continuity Intention construct explains 76.2% of the variance in the items, which is considered acceptable. The Trust construct exhibited a factor loading of 0.858, along with high Cronbach's alpha and composite reliability values of 0.913 and 0.779, respectively. The results indicate that the Trust concept is also very dependable and has strong internal coherence. The AVE value of 0.779 suggests that the underlying construct accounts for 77.9% of the variability in the Trust items. The factor loadings for the Satisfaction, User Interface, and Problem-Solving constructs ranged from 0.756 to 0.788, which suggests that there are moderate-to-strong relationships between the items and constructs.

These constructs also demonstrated high Cronbach's alpha values ranging from 0.848 to 0.873, indicating high internal consistency. The composite reliability values for these constructs ranged from 0.651 to 0.698, indicating acceptable reliability. The AVE values for these constructs ranged from 0.651 to 0.698, suggesting that the underlying constructs explain a moderate percentage of variance in the items. Overall, the results suggest that the study's constructs are reliable and valid measures of their respective latent variables.

Table 3. Measurement properties

Item	Factor loading	Cronbach's alpha	Composite reliability	AVE
Continuance Intention		0.843	0.905	0.762
CI1	0.900			
CI2	0.815			
CI3	0.900			
Trust		0.858	0.913	0.779
TR1	0.883			
TR2	0.878			
TR3	0.887			
Satisfaction		0.769	0.869	0.690
SAT1	0.729			
SAT2	0.837			
SAT3	0.915			
User Interface		0.756	0.848	0.651
UI1	0.858			
UI2	0.789			
UI3	0.771			
Problem-Solving		0.788	0.873	0.698
PS1	0.912			
PS2	0.824			
PS3	0.764			

Note(s): (1) AVE = average variance extracted. (2) All factor loadings were significant at the 0.05 level

Table 4. Discriminant validity

Constructs	Continuous Intention	Problem-Solving	Satisfaction	Trust	User Interface
Continuous Intention	0.873				
Problem-Solving	0.398	0.835			
Satisfaction	0.572	0.528	0.830		
Trust	0.591	0.376	0.621	0.882	
User Interface	0.251	0.487	0.359	0.376	0.807

The correlation matrix above shows the relationships between the five constructs: Continuous Intention, Problem-Solving, Satisfaction, Trust, and User Interface. The diagonal of the matrix displays the constructs" reliability coefficients, which are all above 0.7, indicating that the constructs have good internal consistency.

The off-diagonal elements display the correlations between each pair of constructs. Continuous intention has the highest correlation with Trust (0.591) and Satisfaction (0.572), indicating that trust and satisfaction are strong predictors of continuous intention. Problem-solving has the strongest correlation with Continuous intention (0.835), suggesting that effective problem-solving leads to higher continuous intention.

User Interface has the weakest correlation with all other constructs, suggesting that it may not directly affect continuous intention. However, it still has moderate positive correlations with Satisfaction (0.359) and Problem-Solving (0.487), implying that a good user interface can enhance problem-solving and satisfaction.

Overall, the correlation matrix suggests that Trust, Satisfaction, and Problem-Solving are crucial factors in predicting Continuous intention. At the same time, User Interface may indirectly influence it by affecting Satisfaction and Problem-Solving.

Table 5 presents the Variance Inflation Factor (VIF) values for each item in the model. VIF is a measure of multicollinearity, a phenomenon where two or more predictors in a model are highly correlated with each other, making it difficult to assess their individual effects on the dependent variable. Generally, a VIF value of 1 indicates no multicollinearity, while values above 5 or 10 indicate a high degree of multicollinearity.

Looking at the VIF values provided, most of the items in the model have VIF values below 2, which indicates that multicollinearity is not a major issue.

Table 5. VIF Value

Items	VIF
CI1	2.394
CI2	1.702
CI3	2.317
PS1	1.879
PS2	1.789
PS3	1.472
SAT1	1.377
SAT2	2.232
SAT3	2.726
TR1	2.218
TR2	1.976
TR3	2.390
UI1	1.295
UI2	1.830
UI3	1.936

Structural model and hypothesis testing

The table presents the hypothesized paths, path coefficients, t-values, and study results. The first hypothesis (H1) proposes that User Interface positively affects trust received support with a path coefficient of 0.000 and t-value of 4.997. The second hypothesis (H2), proposing that Problem-Solving positively affects trust, was supported with a path coefficient of 0.000 and a t-value of 5.873. The third hypothesis (H3), suggesting that User Interface positively affects satisfaction, was supported with a path coefficient of 0.005 and a t-value of 2.830. The fourth hypothesis (H4), proposing that Problem-Solving positively affects satisfaction, was strongly supported with a path coefficient of 0.000 and t-value of 9.833. The fifth hypothesis (H5) proposes that trust positively affects continuous intention received support with a path coefficient of 0.000 and t-value of 9.292. The empirical findings have validated the sixth hypothesis (H6), which posits that satisfaction has a positive impact on continuous intention. This is evidenced by a path coefficient of 0.000 and a t-value of 7.232.

The model's predictive ability was assessed by utilizing the R^2 value, which measures the proportion of the dependent variable's variability that can be explained by the independent variables. The findings suggest that a significant amount of the fluctuation in trust values (R^2 = 0.190), satisfaction values (R^2 = 0.293), and continuous intention (R^2 = 0.418) can be attributed to the model, indicating that the autonomous variables have a strong impact on the dependent variables.

Table 6. Direct Effect Measurements

	Hypothesized path	Path coefficient	t value	Result
H1	User Interface → Trust	0.000	4.997	Supported
H2	Problem-Solving → Trust	0.000	5.873	Supported
H3	User Interface → Satisfaction	0.005	2.830	Supported
H4	Problem-Solving → Satisfaction	0.000	9.833	Supported
H5	Trust → Continuos Intention	0.000	9.292	Supported
H6	Satisfaction → Continuos Intention	0.000	7.232	Supported

The study further examined four additional suppositions (H7-H10) that proposed secondary consequences of User Interface, Problem-Solving, Trust, and Satisfaction on Persistent Intention through the intervention of Trust and Satisfaction. The results suggest that all four hypotheses were corroborated, as demonstrated by notable path coefficients and t-values. The findings of the study indicate that the User Interface and Problem-Solving aspects possess a significant indirect influence on Continuous Intention, which is mediated by the factors of Trust and Satisfaction. Similarly, it has been ascertained that Trust and Satisfaction exert a significant indirect influence on Continuous Intention. The findings suggest that enhancing the user interface, problem-solving aptitude, trustworthiness, and gratification may result in an indirect upsurge in sustained inclination. The attainment of this objective is facilitated by the intermediary impact of trust and contentment. Thus, it is of utmost importance for corporations to augment these variables to ensure patronage preservation and attain enduring financial gains. The research delved into the interrelationship among user interface, problem-solving, satisfaction, trust, and continuous intention within the realm of online grocery shopping. The analysis of the survey data evinced that all the hypotheses were corroborated, thereby signifying a favorable association between the independent variables and the dependent variable.

The empirical evidence suggests that the establishment of customer trust in the realm of e-grocery shopping is contingent upon the provision of an interface that is both user-friendly and visually appealing. It is a widely acknowledged phenomenon that the level of contentment a consumer experiences with a given interface is positively correlated with their propensity to place trust in the platform. Consequently, this engenders a heightened proclivity among users to persist in utilizing the aforementioned service. As per the research findings, the act of problem-solving holds significant importance in augmenting the level of customer confidence and contentment. The expeditious and effective resolution of issues can engender a favorable perception of the platform amongst patrons, thereby augmenting their proclivity to sustain its usage.

The results of the investigation underscore the importance of customer contentment and reliance in the realm of virtual grocery procurement. The aforementioned factors are of utmost significance in the establishment of a steadfast clientele. As per the results of the study, the provision of a facile and meticulously designed interface, coupled with efficacious

troubleshooting techniques, can augment the contentment, reliance, and allegiance of the clientele. The findings of this investigation have the potential to be exceedingly advantageous for e-commerce purveyors of groceries who seek to augment their clientele's satisfaction and fortify their patronage.

Table 7. Indirect Effect Measurements

	Hypothesized path	Path coefficient	t value	Result
H7	User Interface → Trust → Continuos Intention	0.000	4.195	Supported
H8	User Interface → Satisfaction → Continuos Intention	0.004	2.859	Supported
H9	Problem-Solving → Trust → Continuos Intention	0.000	5.635	Supported
H10	Problem-Solving → Satisfaction → Continuos Intention	0.000	5.363	Supported

Note: Recommended t-values > 1.96; p < 0.05.

The model's study of the hypothesized paths reveals numerous important links that influence users' ongoing propensity to utilize a mobile banking app. The empirical evidence suggests that trust and satisfaction exert a direct and favorable impact on the propensity to persist. The statistical analysis revealed that the coefficients about the pathways originating from trust and satisfaction and leading to continuous intention were deemed significant, as evidenced by their respective t-values of 9.292 and 7.232. This assertion posits that the sustained usage of a mobile banking application is contingent upon the customers' trust in its functionality and satisfaction with its features. To enhance customer loyalty, financial institutions ought to accord priority to cultivating trust and guaranteeing that their application aligns with customer anticipations.

An additional salient revelation pertained to the impact of the user interface on trust and satisfaction, exhibiting coefficients of 0.000 and 0.005, correspondingly. The statistical analysis reveals that the path leading from the user interface to trust exhibits a t-value of 4.997, whereas the path leading from the user interface to satisfaction exhibits a t-value of 2.830. The aforementioned findings suggest that the implementation of an interface that is both user-friendly and aesthetically pleasing can play a crucial role in fostering confidence and augmenting patron contentment. To cultivate enduring patronage, financial institutions must allocate resources toward the development of mobile banking applications that are both aesthetically pleasing and intuitively navigable.

Furthermore, the examination reveals that the act of resolving issues possesses a straightforward impact on both reliance and contentment, with t-values of 5.873 and 9.833, correspondingly.

This postulates that the efficacy of the mobile banking application in resolving customer issues can potentially augment their confidence in the application and contentment with its

offerings. Financial institutions must furnish dependable and proficient customer service to effectively resolve any concerns that patrons may encounter during their utilization of the application.

The study has found that the ramifications of user interface and problem-solving on continuous intention are mediated by trust and satisfaction. The statistical analysis reveals that the t-values associated with the paths originating from user interface and problem-solving, and leading to continuous intention via trust and satisfaction, fall within the range of 2.859 to 5.635. This suggests that augmenting the user interface and problem-solving capabilities can have an indirect effect on continuous intention by bolstering the trust and satisfaction levels of customers. Consequently, financial institutions ought to enhance these variables to guarantee the sustenance of patronage and allegiance.

The empirical evidence suggests that the establishment of customer trust in the realm of e-commerce for grocery shopping necessitates the provision of an interface that is both visually appealing and user-friendly. A widely acknowledged phenomenon is that clients are inclined to place greater confidence in a given platform provided that they are content with its user interface. Consequently, this engenders a heightened proclivity on their part to persist in utilizing the aforementioned service. As per the research findings, the act of problem-solving is deemed to be of utmost importance in augmenting the level of trust and contentment exhibited by customers. The expeditious and effective resolution of issues can engender a favorable perception of the platform among patrons, thereby augmenting their proclivity to persist in utilizing it.

The study's results underscore the importance of customer contentment and confidence within the realm of virtual grocery procurement. The aforementioned factors hold significant importance in the establishment of a steadfast clientele. As per the results of the study, the provision of a facile and meticulously designed interface, coupled with efficacious troubleshooting techniques, can augment the contentment, reliance, and allegiance of the clientele. The potential advantages of this investigation are considerable for e-commerce grocery vendors seeking to augment their clientele's satisfaction and elevate their patronage.
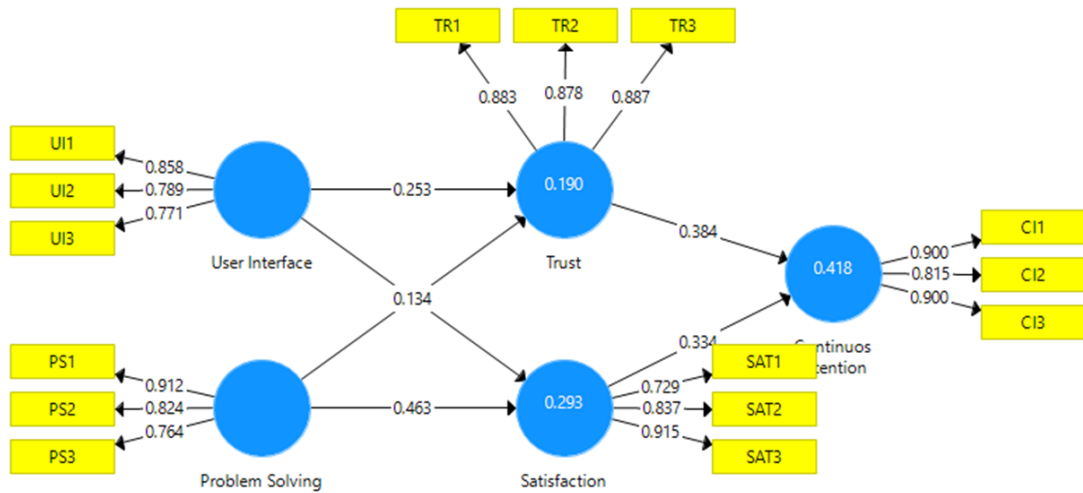
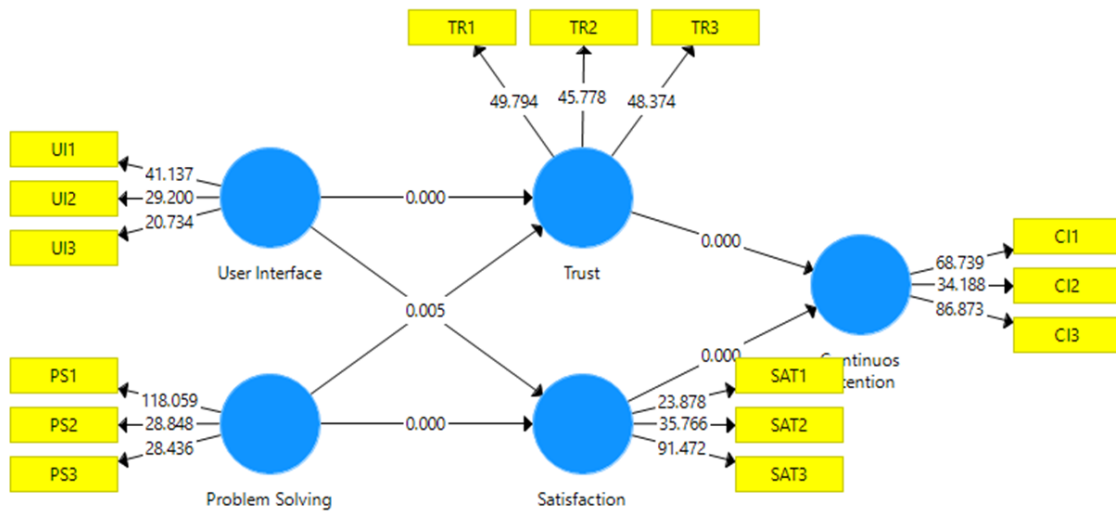**Figure 2. SmartPLS measurement model**

Figure 3. Structural model

Conclusion

The objective of this study was to investigate the impact of chatbot implementation on customers' continuance intention, as well as the influence of customer trust and satisfaction on continuance intention in the context of e-retailing. The result revealed that user interfaces and problem-solving positively influence trust, satisfaction, and continuous intention. Both predictors are important in influencing the consumer to keep using chatbots. Importantly both predictors are also critical for trust and satisfaction. Service providers should focus on designing and developing the user interface to be more friendly and easy to use. Apart from

that, marketers and retailers may focus on how they can conduct more awareness programs and position chatbots as the new tools to help customers with their smooth shopping or dealing with retailers. Retailers may also provide a help desk or IT support team on standby to help inquiries among consumers when they get stuck or frustrated with the services. Immediate service recovery in terms of solving customer problems may develop customer trust and confidence in the retailer's serious effort to enhance their services to the customer for betterment.

Limitation

This study has limitations that need to be acknowledged. Firstly, the research sample was restricted to users in Malaysia, and the data collection was conducted via Google Forms. Therefore, the findings only represent consumer behavior in specific geographic regions and market segments, which may not be generalizable to other parts of the world. Future research should consider involving a broader demographic perspective that includes greater cultural variations to address this limitation. Secondly, the study collected data from general users. There may be a possible gap in response to technology-based services among different generations. For instance, millennials are more receptive to tech-savvy products and services. At the same time, Generation X is more receptive to robot-based services. Therefore, future work should investigate and compare the feedback across different generational groups. Finally, this study did not account for demographic effects, such as gender, age, education level, and experience, which have been shown to influence consumer behavior toward technology-based services in previous studies. Future research should address these factors to obtain a more comprehensive understanding of consumer behavior towards chatbot adoption in e-retailing.

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