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THE QUALITY OF SERVICE AND USER SATISFACTION OF AIRLINE CHATBOTS

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ABSTRACT

Chatbots have shown to be a viable alternative to customer service agents in addressing customer questions and concerns. The airline sector has developed chatbots to meet the needs of their customers. In this paper, the study presents findings from a questionnaire involving 417 chatbot users. The assessment revealed that the quality of the airline chatbot service was deemed good, and users were satisfied with the airline chatbot service. This study also tested the relationship between the variables of the study. The outcomes revealed a significant relationship between users' profile and the quality of the service provided by the chatbot. A significant relationship manifested between the users' profiles and their satisfaction with the airline chatbot service. The results also discover a highly significant relationship between the quality of airline chatbot service and the users' satisfaction. Drawing on the findings, Developers should enhance chatbots to provide better service and boost customer satisfaction.

Keywords: *Airline Chatbot, Quality, Satisfaction*

INTRODUCTION

Artificial intelligence (AI) is undeniably becoming a more powerful force in the tech world, and it is a fundamental advancement that has ushered in a new era in different industries. AI is taking center stage and showcasing its hospitality, tourism, banking, retail, and manufacturing capabilities. It has gradually infiltrated the commercial sector to assist firms with internal business operations and customer interactions in personal and impersonal service experiences. The effects of the pandemic, such as skeletal workforce and business downsizing, brought human customer service to be limited, leading to AI subscription to meet the larger demand since most customers' transactions are now done online. Chatbots have taken control, answering queries and resolving frequent customer concerns rather than

PISSN 2527-9092
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human customer service agents responding to consumer questions and complaints (Prentice et al.,2020). Chatbots are innovative and are somehow challenging the customer service industry in the Philippines. The Philippines largest airline, Cebu Pacific, accelerates its digital transformation by introducing Chatbot Charlie to cater to its clientele (2021). AI, such as chatbots, exhibit parts of human intelligence that are frequently used in commercial operations, and they embody it (Um et al., 2020; Huang & Rust, 2018). Humanity has entered a new age aided by the systems that can reason, form patterns, explore different aspects, and make decisions. Chatbots are used to engage customers and improve the customer experience by providing variety and convenience. Companies that integrate AI will create a better customer experience by delivering personalized customer care and on-demand support while saving time and money on processes (Um et al., 2020; Daqar & Smoudy, 2019).

Chatbots are AI-based technology, and it has been developed and utilized in many industries. With the advancement of technology in chatbot creation, interest in chatbots and their use for business has grown. It is forecasted that in 2027, the revenue market of chatbots will exponentially increase from its current growth. Users have recognized its convenience in communicating with the brand. Several innovative tourism and hospitality companies have begun to deploy AI technology. Businesses are confronted with complex concerns about how to change their customer communication methods. One of the essential demands for the tourism section is to adopt new technologies and operate sustainable enterprises (Um et al., 2020).

The coronavirus pandemic has thrown the airline industry on its head (Tuchen et al., 2020) and hastened chatbots as an option for customer service. Chatbot services are safer for customers' use rather than traveling straight to the airline branch. The significance of assessing chatbot customer service concerns cannot be overstated. This is to gain a deeper understanding of chatbot integration in the airline industry; the researcher wants to uncover the customer experience by evaluating the quality of service of the airline chatbot and user satisfaction with the service provided by the airline chatbot. The goal of this study isn't to establish chatbot as a promising technology; instead, the growing interest in the concept is necessary to understand how consumers evaluate the airline industry chatbot. There is a scarcity of research detailing the constructs of airline chatbot quality and user satisfaction with the services provided by the airline chatbot. In response to the lack of literature, the research has defined the following objectives:

1. *Determine the profile of the airline chatbot users in terms of age and educational attainment.*
2. *Measure the quality of the airline chatbot service.*
3. *Measure the users' satisfaction with the service provided by the airline chatbot.*
4. *Test the significant relationship between the users' profile and the quality of airline chatbot service.*

PISSN 2527-9092
EISSN 2527-6921

5. *Test the significant relationship between the users' profile and their satisfaction with the service provided by the airline chatbot.*
6. *Test the significant relationship between the quality of the airline chatbot service and the users' satisfaction with the service provided by the airline chatbot.*

Specifically, This study aims to test the following null hypotheses:

H_{01} There is no significant relationship between the users' age and the quality of the airline chatbot service;

H_{02} There is no significant relationship between the users' age and their satisfaction with the service provided by the airline chatbot;

H_{03} There is no significant relationship between the users' educational attainment and the quality of the airline chatbot service;

H_{04} There is no significant relationship between the users' educational attainment and the their satisfaction with the service provided by the airline chatbot;

H_{05} There is no significant relationship between the quality of the airline chatbot service and users' satisfaction with the service provided by the airline chatbot.

Chatbots have transformed the business environment through automated help services (Lubbe & Ngoma, 2021). A chatbot is a simple and accessible information service that responds to text users' requests for services and related information. (Lubbe & Ngoma, 2021; Kim & Chang, 2020). Chatbots can also assist in traffic management and ensuring that customers receive accurate information and service, resulting in improved conversations and lower bounce rates. Chatbots have been used by businesses to strengthen client connections. In addition, chatbots can be programmed to greet customers and provide discounts to entice users to avail their services. Another benefit of using a chatbot is its timeliness; this allows customers to obtain assistance anytime and anywhere. Chatbots provide a visual representation of the available options and provide better information and solutions based on the client's current needs and previous conversations (Dash & Bakshi, 2019). According to several studies, chatbots improve customer service by gathering customer expectations based on previous purchases and search histories (Ameen et al., 2021; Um et al., 2020; Davenport et al., 2019).

Intelligent agents such as chatbots are designed with human identities and personalities. Chatbots increasingly manage customer support chat and commercial social media engagements (Radziwill & Benton, 2017). The widespread use of popular instant messaging systems has resulted in a significant rise in business communication. Companies, particularly in the tourism industry, such as the airline

PISSN 2527-9092
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industry, take advantage of this chance to use chatbots to improve their current offers. The importance of chatbots is becoming more widely recognized. The information-intensive tourism and hospitality industries necessitate continuous communication with stakeholders (Ukpabi et al., 2019). AI provides a challenge to human service personnel, notwithstanding its potential for development and inventiveness in customer-facing services. At its most basic level, AI can replace humans by doing intelligent tasks exclusively to the human intellect (Hassani et al., 2020).

Customers are the lifeblood of any business, and maintaining and obtaining new customers is the most challenging task for any established business. One of the strategies to reduce turnover and increase client retention is to improve the customer experience. When companies expand, so does their consumer base. Every consumer is unique and requires different motivators to engage with the business brand; it's critical to think about each customer independently. Chatbots, for example, can bridge the gap between the company and the customer by generating vast volumes of data to better understand the demands of the customer. It's essential to understand artificial intelligence technologies and how they may assist businesses to keep customers and provide more participation to their clientele (Verganti et al., 2020).

Service quality refers to a customer comparing their expectations to service with what the service provider delivers. The importance of service quality has become one of the top concerns in the service industry, and it is commonly understood that service quality is a prerequisite for customer satisfaction. The customer's satisfaction and fulfillment influence the profitability of the business. It's a determination that a product or service feature provides a satisfying level of fulfillment (Prentice et al.,2020; Lee et al., 2016; Ilieska, 2013). Customers will assess the quality of their service encounter and compare it to what was anticipated. Satisfaction is essentially an evaluation of whether the items or services meet the needs and desires of the customers. The assessment of a customers' quality requirements, needs, and expectations should all be met by a product or service. Satisfied customers are more inclined to advocate and promote the product or service, so businesses desire them. Consumers who are pleased with the chatbot are more likely to purchase additional products and services. They are not affected by price or competition and are more likely to become loyal customers. Chatbots are unique, and once it is set up in the correct application, it would also improve the customers' experiences and, ultimately, satisfaction (Lubbe & Ngoma, 2021). The introduction and integration of technology into organizations have transformed operations in a variety of industries. Notably, significant technological advances in e-commerce are intended to sway customer behavior in favor of certain products and businesses (Davenport et al., 2019).

Businesses are rapidly adopting AI innovations supported by data analytics in response to sustained margin stresses, shorter strategy cycles, and higher consumer expectations. AI changes the way businesses communicate with their clients, potentially improving customer-brand relationships. Advances in AI, in particular, can enhance the consumer experience by growing companies' awareness of consumers' tastes and purchasing habits. Companies can reap significant benefits from deploying AI technologies strategically at various customer touchpoints,

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including increased customer satisfaction. Businesses utilize chatbots, content creation, and consumer insights (Ameen et al., 2021). Chatbots free up human agents to handle more complex cases.

Furthermore, as demand ebbs or flows, chatbots deployment can be scaled up or down as required (Davenport et al., 2019). However, consumers may adapt to the new change due to the service process and unfamiliar communication interface. Customers may find it difficult, and that may affect their satisfaction level. The benefits and costs of integrating chatbots in service operations can save time and money by responding quickly to a customer's request. However, on the other hand, a chatbot may result in additional costs, such as installation or maintenance, and employee or customer complaints about inadequate and problematic service (Um et al., 2020). Chatbots have the financial gains and the benefits of socializing with customers. Chatbots are emphasized as new sustainable service tools through personal data, reliable service, and learning (Um et al., 2020). Most of the time, using chatbots can be helpful, but it can also raise the risk of losing personal relationships with customers. Other difficulties include an outdated database and a lack of understanding of the customer's requirements (Daqar & Smoudy, 2019).

METHODOLOGY

This study utilized a descriptive- correlational design using a researcher-made questionnaire. The initial part of the questionnaire is the profile of the participants, which covers their age and educational attainment; In capturing the quality level of the service of the airline chatbot, the questionnaire was crafted based on the study of Radziwill & Benton (2017). The elements were applied from a generic point of view. The questions were selected based on the applicability of the airline chatbots features. The quality section utilized a 4-point Likert scale with the level of quality as the response anchor at a .74 interval; the following designate: four (4) as very good; three (3) as good; two (2) as fair; one (1) poor. In the study Radziwill & Benton (2017), the authors investigate chatbots' scientific, professional, and trade literature. The authors identified and collated the quality attributes of the chatbot from different sources based on the following synthesized dimensions according to the following: *Performance, Humanity, Affect, and, Accessibility*. The provided quality attributes of the chatbot (focused on the services chatbots offer to its clients) were found the most applicable to the study.

In determining the questions in the satisfaction section, the researcher has based this on Hayes (2021). The questionnaire provided standard statements of satisfaction designed to measure the customer requirements: *availability of service, the responsiveness of service, and professionalism of service.* The questionnaire utilized a 4-point Likert scale with the level of satisfaction as the response anchor at a .74 interval; the following designate: four (4) as very satisfied; three (3) as satisfied; two (2) less satisfied; one (1) not at all satisfied. Three expert professors in Tourism and Quality Management from different local universities validated the questionnaire. The instrument also underwent reliability testing resulted in a Cronbach alpha value of 0.90, which is highly reliable and acceptable for administration.

PISSN 2527-9092
EISSN 2527-6921

During data gathering, A letter of consent was provided to assure that participants volunteered and were free to withdraw from participating at any point and for any cause. Each participant was sent a questionnaire with a cover letter explaining the objectives of the study. Since the study's nature had an unknown unlimited population; The following details were set: the population proportion is set at 50%, the margin of error of 5%, and a confidence level of 95%. The formula was used to determine the population size.

$$n = \frac{z^2 \times \hat{p}(1-\hat{p})}{\varepsilon^2}$$

$$n = \frac{1.96^2 \times 0.5(1-0.5)}{0.05^2} = 384.16$$

It was established that there should be at least 384 participants. The researcher was able to collect 417 completed responses. In this research, the airline chatbots being assessed were either international or domestic-based airline companies that provide a chatbot service to their customers. The criteria were set to identify participants of the study. These are the following: (a) should be of legal age; (b) should have accessed the chatbot service during the Covid-19 pandemic; (c) have utilized the airline chatbot from an online platform for online queries or concerns, or both. The participants were given ample time to answer the questionnaire. The data was gathered and statistically treated using the non-parametric Chi-square test were used since the study's data satisfied the assumptions of using the tests.

RESULTS AND DISCUSSIONS

As shown in figure 1 the visual presentation of the results showing the distribution of the participants according to age according from highest to the lowest garnered response. There were 171 (41%) Millennials; 104 (24.9%) Generation X; 74 (17.7%) Baby Boomers; 56 (13.4%) Generation Z; and 12 (2.9%) Silent generation participants.

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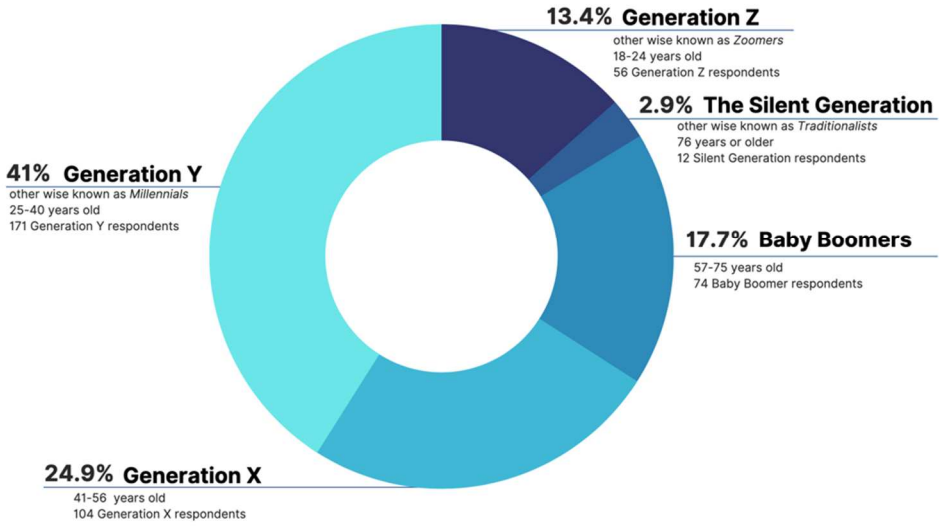

Figure 1. Distribution of the participants according to age

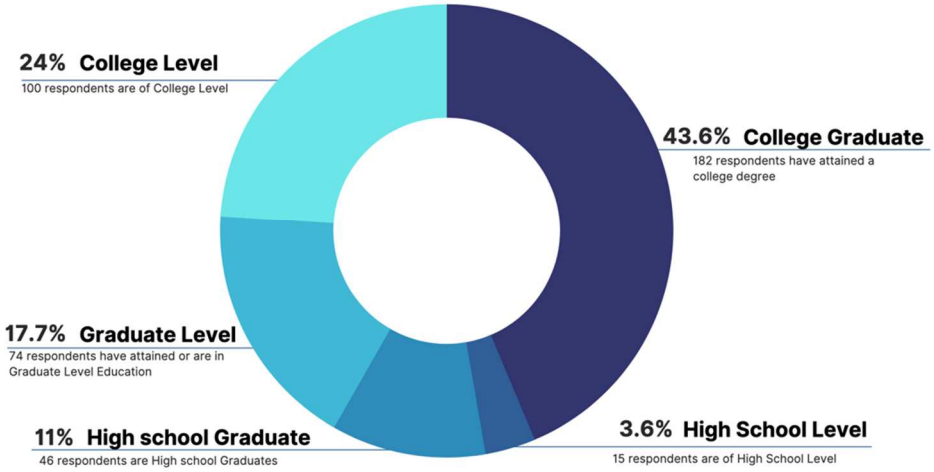

Figure 2. Distribution of the participants according to educational attainment

Figure 2 illustrates the results showing the distribution of the participants' educational attainment. College graduate participants attained the most response at 43.6% (182), followed by the following: college-level participants at 24% (100); graduate-level participants at 17.7% (74); high school graduate at 11% (46); and the least representation based on education, high school level at 3.6% (15).

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Table 1. The level of quality of the service of the airline chatbot

	QUALITY OF THE AIRLINE CHATBOT SERVICE	Mean	Std deviation	Verbal Interpretation
1.	*How would you rate the chatbot's ability to provide service at any given time and day?*	2.95	.816	Good
2.	*How would you rate the chatbot's ability to transfer you to the correct department or a live customer service agent?*	2.00	.879	Fair
3.	*How would you rate the chatbot's ability to maintain privacy in your conversation?*	2.83	.808	Good
4.	*How would you rate the ability of the chatbot in responding to your questions?*	2.70	.804	Good
5.	*How would you rate the chatbot's greeting?*	2.89	.818	Good
6.	*How would you rate the chatbot's personality and engagement?*	2.79	.797	Good
7.	*How would you rate the chatbot's ability to detect meaning and intent?*	2.62	.819	Good
8.	*How would you rate the chatbot's ability to respond to social cues?*	2.58	.845	Good
	Weighted mean	***2.67***	***.687***	***Good***

The itemized results of the quality level of service provided by the airline chatbot are displayed in table 1. Generally, the customers rated the quality as good ($\bar{x}$= 2.67, SD=.687), which means the services were good enough or adequate. Only the *"chatbot's ability to transfer to the correct department or a live customer service agent"* got a fair rating ($\bar{x}$= 2.00, SD=.879), making it the lowest-rated statement. The highest-rated indicator was the *"chatbot's ability to provide service at any given time and day?"* ($\bar{x}$= 2.95, SD=.816). Similar to the findings of Nguyen et al. (2021), service quality, precision, and the currency of AI data are indicators of its quality. In a chatbot system, quality components refer to users' perceptions of AI functionality and are exhibited through the system's flexibility, reliability, and timeliness. Nguyen et al. (2021) stressed that the quality of the chatbot indicates a company's innovativeness, which impacts how people perceive the brand. Smutny & Schreiberova's (2020) investigation reveals that chatbots usually are without any discussion approaches or emulation of human dialogue. It is also essential for airline companies to evaluate the chatbot's ability to transfer to a real human agent. Nguyen et al. (2021) recommend that businesses respond by maintaining relationships with AI system designers to address customer concerns about the lack of human interaction when using the chatbot. Human services do not diminish in importance even as chatbot services increase convenience. Organizations should strive for a balanced approach to human engagement through carefully personalized experiences backed up by a well-trained customer support staff, strengthening the customer relationship. Um, et al. (2020) highlights consumers as a part of the

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service process. The expertise and physical availability of the business customer service impact the quality of service provided. A human service provider can resolve a failure caused by a lack of knowledge about the service process.

Table 2. Users' satisfaction with the service provided by the airline chatbot

USERS' LEVEL OF SATISFACTION WITH THE SERVICE PROVIDED BY THE AIRLINE CHATBOT	Mean	Std deviation	Verbal Interpretation
1. *How satisfied are you with the quality of service you received from the chatbot?*	2.75	.819	Satisfied
2. *How satisfied are you with the chatbot's response to your questions?*	2.57	.823	Satisfied
3. *How satisfied are you with the ease of obtaining the service of the chatbot?*	2.84	.839	Satisfied
4. *How satisfied are you with the courtesy and friendliness of the chatbot?*	2.82	.818	Satisfied
5. *How satisfied are you with the professionalism and expertise of the chatbot?*	2.67	.818	Satisfied
6. *How satisfied are you with the chatbot's speed of service?*	2.92	.864	Satisfied
7. *Overall, how satisfied are you with the performance of the chatbot?*	2.73	.757	Satisfied
Weighted mean	***2.76***	.687	***Satisfied***

The users were satisfied (x=2.76, SD=.687) with the airline chatbot's services. The weighted mean of the seven indicators in Table 2 were within the satisfied level. The users have the highest satisfaction with the *chatbot's speed of service* ($\bar{x}$= 2.92, SD=.864); this indicates that navigation was easy and quick. Their lowest satisfaction was on how *the chatbot's response to their questions?* ($\bar{x}$= 2.57 SD=.823). Such findings are also seen in the study of Sanny et al. (2020), which found that chatbots can assist in the quick resolution of problems. The use of a chatbot improves efficiency. The chatbot service enables deep engagement between the brand and customer care. The study further explains that digital service assistance tools could allow for favorable brand interactions with customers.

In comparison to the findings in Yao et al. (2020), research results show good performance in terms of chatbot satisfaction. It leaves a positive impression on users. There is an experience of how easy it is to access and understand the questions asked by the chatbot. Similar to the discovery of Alotaibi et al. (2020) chatbots were able to interpret the meanings of words and users' requests. Furthermore, users reported that the interaction is efficient and that responses are sent quickly. Users were satisfied, and they liked the idea of being able to voice their demands in their language. Furthermore, people were engaged with the chatbot interaction. The research of Skjuve et al. (2021) also reveals that chatbots gave

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incomprehensible or out-of-context responses. The findings contrast with results from the published research of Cheng & Jiang (2020) users' experience with chatbot services of their chosen brand was positively predicted by gratifications derived through chatbot use. It was also found that users were less satisfied with chatbots because they were concerned about their privacy. Customer loyalty and continued use of chatbot services were both positively affected by user satisfaction. Chatbot communication is simple to grasp, and it can be accessed at any time and from any location. The chatbots also can respond promptly. Nguyen et al. (2021) denote that responsiveness is a crucial moderator in the relationship between AI system and customer-brand.

Table 3. Relationship between age and the chatbot services

Pair of Variables	Chi-Square Value	P -value	Decision	Interpretation
Age and Quality of Chatbot Service	27.390*	.007	Reject Ho	Significant
Age and Satisfaction of the Chatbot Service	42.217*	.000	Reject Ho	Significant

** The result is significant at p < .05*

The study hypothesized that the age of the users influences their perceived quality and their satisfaction with the chatbot service. Since the data was not normally distributed, the chi-square of the independent sample was used to test the hypotheses. Table 3 shows the correlation matrix and the statistical values. The table results revealed that age is correlated *(x2 = 27.390, p=.007)* with the level of service quality. A significant relationship manifests in the results; hence the null hypothesis is rejected. In this perspective, the results tells that there is a high possibility that younger users are more familiar or adept with chatbots; the age groups in this study have a disparity when it comes to quality assessment of the airline users, making it significant enough to establish a relationship and reject the null hypothesis. The results further indicates the younger the age the higher the perceived quality of airline chatbot service.

The same table shows that the users' age also has a bearing on their satisfaction with the chatbot service. Based on the test results, the younger users have higher ratings on the satisfaction of service of airline chatbots than the older users *(x2 = 43.217, p=.000).* The p-value was less than .05, which led to the rejection of the null hypothesis of no correlation. The results mean that when it comes to users' satisfaction with the service provided by the chatbot, the younger group, Generation Z and Generation Y or Millennials, have a higher level of satisfaction than the older groups, Generation X, the Baby Boomer and the Silent Generation. In conclusion, age is a determinant of the level of satisfaction with the

PISSN 2527-9092
EISSN 2527-6921

airline chatbot services; this further stipulates that the younger the user the more satisfied they are with the service provided by the airline chatbot. Therefore, the following hypotheses are rejected:

H_{01} There is no significant relationship between the users' age and the quality of the airline chatbot service;

H_{02} There is no significant relationship between the users' age and their satisfaction with the services provided by the airline chatbot.

In support of Czaja & Lee's (2007) findings, older individuals are open to using technology. However, the individuals' previous computer expertise, available training and assistance, ease of access, and the types of programs offered are crucial factors determining receptivity. In general, younger generations appear to be more easily lumped into the category of self-sufficient digital natives. Still, despite using various technologies, older generations display less self-assurance (Fristedt et al., 2021). In line with the findings of this study, several reasons may have contributed to the discovery. Czaja et al. (2006) explained that internet activities are performed at a lower rate by older people than by younger internet users. The disparity could be due to the nature of their experiences and age. The overall success of technology engagement may vary. Computer technologies have the potential to improve the independence and quality of life of elderly people. However, for technology to reach its full potential from older groups, the requirements and capacities of older individuals must be factored into system design. Unfortunately, most system designers have not considered older persons as active consumers of technology, and as a result, many interfaces have been developed without considering their demands. Czaja & Lee (2007) further notes that it is essential to ensure that older people can successfully adapt to technology. There should be extensive information on user preferences and needs, existing system challenges, and the effectiveness of design solutions.

In connection to the results, the analysis of Kim & Brady (2019) explains that Baby boomers are complicated in terms of technology adoption since they have both a passive attitude brought on by aging and an active attitude that distinguishes them from older generations due to their knowledge and experience. It was found that technologies become more challenging to accept than ever before, usability becomes more vital in their acceptance. Their high level of technology acceptance, on the other hand, appears to be linked to their experience and confidence. Fristedt et al. (2021) note that even though younger people have more homogeneous attitudes toward technology than older people, individuals' experiences with and attitudes toward technologies and technological development are not limited by generation; perspectives can sometimes unite individuals across generations rather than within them. Individual user perspectives such as needs, desires, beliefs, or goals that have been overlooked in existing technology models should be considered in the design and development of future technologies. It is essential to look into the significance of policies to facilitate said technologies, and users from different generations should be involved. These tactics are expected to be successful in promoting the development of universally accessible technology.

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PISSN 2527-9092
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Table 4 Relationship between the users' educational attainment and the airline chatbot service

Pair of Variables	Chi-Square Value	P -value	Decision	Interpretation
Educational Attainment and Quality of Chatbot Service	29.670*	.003	Reject Ho	Significant
Educational Attainment and Satisfaction of the Chatbot Service	24.553*	.017	Reject Ho	Significant

** The result is significant at p < .05*

The assessment found a significant relationship between the users' educational attainment and the participants' perceived level of quality of the chatbot service. The results were found through the use of chi-square of independent sample. Table 4 displays the outcomes of the test and it shows that the relationship between the users' educational attainment and their perceived level of quality of the chatbot service was highly significant *(x2 = 29.670, p = .003).* The results indicate that there is a strong evidence of a correlation between the user's educational attainment and their perceived level of quality of the chatbot service. Focusing on the results reveals that the college graduate airline chatbot users have a higher marking on the quality of the service provided by the airline chatbot than the rest of the participants from the different educational attainment groups.

Similar conclusion manifested on the satisfaction and educational attainment. The same table presents the relationship between the users' educational attainment and their satisfaction with the airline chatbot service. The results display a strong relationship between educational attainment and satisfaction *(x2 = 24.553, p = .017).* The results revealed that those with higher educational attainment were more satisfied with the chatbot service. Shedding some light in the results revealed that college graduate participants are more satisfied with the airline chatbot's service than participants from other educational attainment groups. Therefore the following hypotheses are rejected:

H_{03} There is no significant relationship between the users' educational attainment and the quality of the airline chatbot service;

H_{04} There is no significant relationship between the users' educational attainment and their satisfaction with the service provided by the airline chatbot;

Despite the relationships, these findings support that making technology accessible to people of all ages and abilities is vital. Researchers and designers must ask: *1) why technology is difficult to use when it is; 2) how to design technology to make it easier and more effective to use; and 3) how to effectively teach people to use and take advantage of available technologies* (Czaja & Lee, 2007). It is also

PISSN 2527-9092
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essential to look into educational attainment as a factor in using chatbots and other forms of innovation. Research on innovation adoption tends to downplay the impact of educational attainment in individual technology consumption. Higher levels of educational attainment have a substantial, independent association with internet consumption (Mann et al., 2017).

In comparison the study of, Soomro et al. (2020) and the page of (Stanford university, *The digital divide*) mentions that education is a critical component of bridging the digital divide. When compared to people with only a high school diploma or less, college graduates are thought to be ten times more likely to use the internet and computers to their full capacity in their daily lives. People from all walks of life can effectively contribute to society's growth if people use developing technologies to endorse their lives significantly.

Table 5 Relationship between the Quality and Satisfaction of the Chatbot Service

Pair of Variables	Chi-Square Value	P -value	Decision	Interpretation
Quality of Chatbot Service and Users' Satisfaction	649.573*	.000	Reject Ho	Significant

** The result is significant at p < .05*

Table 5 shows the Chi-square test results; this was done to determine the relationship between the users' quality of the airline chatbot service and satisfaction with the services provided by the airline chatbot among 417 participants. There was a strong, positive correlation between the quality of the airline chatbot service and users' satisfaction with the services provided by the airline chatbot, which was statistically significant *(x2 =649.573, p = .000).* Table 5 revealed that those who rated the chatbot service high in quality were also more satisfied with the chatbot service. This may imply a significantly high chance that the quality of airline chatbot service and the users' satisfaction with the service provided by the airline chatbot are linked.

Therefore, *H_{05} There is no significant relationship between the level of quality of the airline chatbot service and users' level of satisfaction with the service provided by the airline chatbot, is rejected.*

Numerous studies have confirmed a relationship between quality and satisfaction, such as the findings of Sureshchandar et al. (2002) examining the relationship between service quality and customer satisfaction revealed a strong relationship between quality and satisfaction. Similar results were seen in Rossmann et al. (2020) study, where service quality significantly impacts customer satisfaction and service costs. Furthermore, customer satisfaction has a role in moderating the impact of other performance indicators.

In summary, although the study results in terms of the quality of the service

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EISSN 2527-6921

of airline chatbots and the user satisfaction with the service provided by the airline chatbots can be generalized as positive. It is in contradiction to Adam et al. (2020) that the study revealed that although chatbots are increasingly popular in various scenarios and have the potential to save time and money from businesses, many people continue to have negative experiences with chatbots. Sureshchandar et al. (2002) stress that service quality and customer satisfaction are unquestionably the two most important business elements; providing high-quality service in the modern environment and satisfying consumers is the key to long-term competitive advantage. Service providers should strive to improve both service quality and customer satisfaction constantly. Satisfying clients may not be enough in this day of fierce business competition. Customer satisfaction, which is dependent to a large extent on the customer's judgments of total service quality, is the only true benefit of a quality revolution.

The findings of this study can help airline companies better analyze service quality and customer satisfaction, as well as improve the chatbot services they provide to their customers. Chatbots are an innovative way for businesses to satisfy customers' requirements wherever they are and at any time. However, because this is an emerging technology, it is critical to learn more about how users perceive it and what characteristics can help readers and businesses better understand it. Assessing customer satisfaction is essential because it is considered necessary for customer retention and loyalty, and it aids in attaining financial goals. Satisfaction is a widely used construct in computer systems studies to evaluate a system's success and effectiveness, and it is particularly crucial for service systems' success. It shows if customers think service is good or bad (Sureshchandar et al., 2002).

The ramifications for chatbot developers are apparent. Above all, there are specific variances in viewpoints among various individuals, whether based on age or educational attainment, which may lead to better chatbot development. It is also a good idea to provide more evident chatbot quality attributes based on the service and products offered by the business. In this case, the airline industry is being focused on, so a comprehensive assessment of the services provided by the airline chatbots must be done to ensure that the chatbot meets the customers' expectations. Customers will expect more from chatbots, which will become a norm in most companies integrating technology into the system. As a result, it is crucial to keep an eye on these developments and evaluate existing chatbot features regularly.

In measuring the several variables involved in the study, self-administered questionnaires were used. The approach merely tests the users' perceptions (Quality and Satisfaction). The questionnaire was developed entirely in English. Some participants may not have a high level of language fluency to comprehend the content due to a different primary language. This flaw should be considered in future research since it may have altered participants' perceptions and interpretations of specific aspects of the study.

Moreover, Future studies could look into the various customer cultures. Attitude and perception of the customers or chatbot users can also be studied. Qualitative research may be the way to understand better customers' experience on the difficulty and challenges with the chatbot. The plurality of the chatbot

PISSN 2527-9092
EISSN 2527-6921

drawbacks may lead to a lack of adoption of chatbots in the business. It should be assured that the programmers take precautions and embrace the cutting-edge chatbots. Rossmann et al. (2020) state that chatbots have different service dimensions than a traditional service hotline. In a chatbot setting, the most significant service dimensions are decreasing customer effort and organizational justice. Other industries, such as the hospitality industry, may be considered in future studies. It would also be beneficial to do a study comparing and evaluating the service quality of human agents and chatbots to evaluate how well chatbots perform in terms of quality of service and satisfaction.

CONCLUSION

There is still a lot to discover in chatbot-provided service. The introduction of chatbots has ushered in a new way of thinking about engaging with customers online. The capacity to reach a large number of clients at once and automatically allow new opportunities for communication. Developers should specifically consider enhancing the airline chatbots to provide better quality service, improve customer satisfaction, and include the opportunity for chatbot users to connect with a human agent. Developers may incorporate the needs and wants of customers across age and educational attainment. The analysis results revealed that the airline chatbot's service quality was rated good and that users were satisfied with the services of the airline chatbot. The study rejects all the null hypotheses of the research and concludes the following: there is a significant relationship between the users' profile and the quality of the airline chatbot service; there is a significant relationship between the users' profile and their satisfaction with the services provided by the airline chatbot, and there is a significant relationship between the level of quality of the airline chatbot service and users' level of satisfaction with the service provided by the airline chatbot. It is important to note that companies should consider the chatbot design that escalates complaints and concerns to a live customer service representative since there are customer concerns that the chatbot may not yet be capable of solving.

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