

USERS' EXPERIENCE ON AIRLINE CHATBOTS

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ABSTRACT

A *chatbot* is an advancing technology that has taken the airline industry to a different level of service. The continuous pursuit drives this development to provide efficient and quality services; however, this technology is not void of challenges that may affect customers' experiences. This study utilizes a sequential mixed method approach that explored the Filipino experiences of using airline chatbots. The results revealed neutral users' experiences. The qualitative components revealed the following themes (1) *Difficult experience*; (2) *Limitations of the chatbots*; (3) *Lack of human connections* and; (4) *Positive experiences*. As a recommendation, further study may be required utilizing different indicators.

Keywords: *Chatbot; Artificial Intelligence; Users' Experience, Airline*

INTRODUCTION

Artificial intelligence (AI) has taken over several industries in the commercial world. Many companies in the tourism and hospitality industries have noticed the existence of this technological breakthrough Cebu Pacific, the country's largest airline, is speeding up its digital transformation by introducing Chatbot Charlie to its passengers, who will answer basic customer questions (2021). AI has gradually invaded the commercial sector to assist organizations with internal business operations and client relations. Because most consumers' transactions are now done online, the repercussions of the pandemic, such as a skeletal workforce and corporate downsizing, created constraints in human customer support, leading to AI subscriptions to meet the increased demand. A *chatbot* is an artificial intelligence-based technology that airlines use to address customer concerns. A *chatbot* is a simple and easy-to-use information service that responds to users' service and information queries (Kim & Chang, 2020; Lubbe & Ngoma, 2021). Chatbots have taken over instead of human customer service professionals responding to consumer questions and complaints (Prentice et al., 2020). Chatbots are cutting-edge, posing a threat to the Philippines' customer service businesses.

Interest in chatbots and their utilization for business has grown as the generation adoption of technology has advanced. The revenue market for chatbots is expected to grow enormously by 2027. Users have noticed how easy it is to communicate with the brand. Several forward-thinking tourism and hospitality businesses have begun to use AI technology. Businesses are grappling with various issues around altering their client communication techniques. One of the essential requirements for the tourism sector is adopting new technology and converting it to sustainable operations (Alotaibi et al. 2020; Marković et al., 2020; Soni et al., 2020; Um et al., 2020).

Companies in the airline industry take advantage of the opportunity to utilize chatbots to improve their current offerings. Chatbots' importance is becoming more widely recognized. Continuous communication with the customers is essential in the information-intensive tourism and hospitality businesses (Ukpabi et al., 2019). Despite its promise for advancement and

inventiveness in customer-facing services, AI challenges human service employees. At its most basic level, AI can replace humans by doing intelligent jobs solely dependent on human intelligence (Hassani et al., 2020). Despite the breakthrough of chatbot utilization in the tourism industry, there are still concerns that need to be addressed to realize the technology's full potential. It is vital to highlight customer feedback as a significant source of input for airlines in determining areas of improvement.

Companies should prioritize reviewing clients' integrated systems; this can be accomplished by measuring User Experience (UX). Before using a product or system, UX assesses products, services, and the complete system involved with the user journey that contributes to producing a user experience. Users' impressions of a brand are influenced by expectations, such as those generated by customers' perceptions of a product, system, or service. All emotions, beliefs, preferences, perceptions, physical and psychological responses, behaviors, and accomplishments that occur before, during, and after use are referred to as the user experience (de Sand et al., 2020).

There has been limited research on users' experiences with chatbots in the Philippines. Because of the knowledge gap, businesses may have difficulty deciding how to create features in their chatbots. The researchers looked into airline passengers' chatbot experiences for this reason. Specifically, the study's objectives are the following: 1) *Determine the airline chatbot Users' Experience (UX)*; 2) *Explore the feedback of airline chatbot users*.

By addressing the need to improve technology-assisted services, the researchers understand the importance of providing high-quality service. The findings of this study could serve as a reference for airlines wanting to improve their services. The researchers looked at how users felt about the airline chatbot's services. Both quantitative and qualitative studies could benefit academics and airline businesses in better understanding how customers perceive the chatbot's strength, complexity, and barriers during use by utilizing the most effective tools available to fulfill the objectives described in the study.

The paper is organized as follows. The following section discusses the material and method of the study. Then, the extensive results and discussion of the study, and the final section concludes the paper.

MATERIAL AND METHOD

The study utilized a sequential mixed method approach in analyzing the user experiences. The researchers first utilized a descriptive quantitative approach focusing on the user's experience using a structured questionnaire adapted from the User Experience Questionnaire (UEQ) in the English Language from the study of Rauschenberger et al. (2013). The questionnaire utilized a 7-point semantic differential scale containing six scales (refer to figure 1) with a total of twenty-six items.

A *semantic differential scale* is used in measuring the connotative meaning that describes the chatbot. Six scales with a total of twenty-six items make up the questionnaire used in this study. The following are: *Attractiveness* refers to a user's overall impression of a chatbot; *Efficiency* refers to the chatbot's speed and efficiency; *Perspicuity* refers to the clarity with which the chatbot may be used; *Dependability* refers to the chatbot's dependability and trustworthiness; *Simulation* the excitement of users in utilizing the chatbot; The *Novelty* refers to the inventive and creative design of the chatbot.

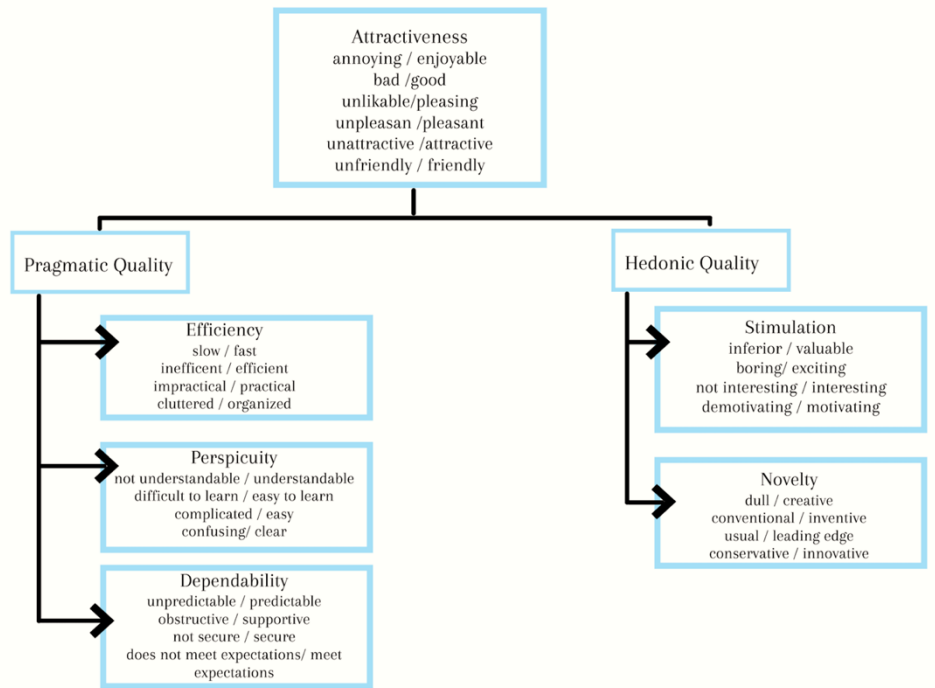


FIGURE 1. Assumed scale structure of the UEQ according to Schrepp et al. (2017)

Permission was granted to the researchers by one of the creators of the English UEQ. The author also provided the researchers with a link to access the UEQ tool, including a results calculator and a questionnaire in different languages. In interpreting the scales' means, the UEQ does not produce an overall score for the user experience. Because of the construction of the questionnaire, it is irrational to build such an overall score since the value cannot be adequately interpreted. The UEQ creators have provided values for interpretation according to Schrepp et al. (2017a); Schrepp et al. (2017b), values between -0.8 and 0.8 represent a more or less neutral evaluation of the corresponding scale, values > 0,8 represent a positive evaluation, and values -0,8 describe a negative evaluation. The range of the scales is between -3 (*horribly bad*) and +3 (*extremely good*).

Since the study's nature had an unknown unlimited population; The following details were set the sample proportion is set at 50%, the margin of error of 5%, and a confidence level of 95%. Based on the results, it was established that there should be at least 384 participants. The researchers garnered 417 completed responses.

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

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

The evaluated chatbots are both international and domestic airlines that have made chatbot services available to clients in the Philippines. The respondents are Filipinos who have utilized the airline chatbot service firsthand. The evaluation in this study is done in a broad sense; hence no specific airline chatbot is being evaluated. In the qualitative component of the study, the researchers looked into the users' experiences with the selected airline chatbots. The inquiry focused on the advantages and challenges of using the airline chatbot through the participants' comments. The comments were then analyzed, coded, and arranged into themes.

RESULTS AND DISCUSSION

UEQ EVALUATION

Table 1 shows the summarized findings of the evaluation utilizing the UEQ English version adapted from Rauschenberger et al. (2013). The values shown in table 1 are from the data calculator crafted by the authors of the UEQ. Table 1 showed that the scores; for all scales grouped according to the following attributes: *pragmatic quality* describes the task-related quality attributes of the airline chatbots; *hedonic quality* are non-task-related quality attributes of the airline chatbot.

In this study, the pragmatic quality attribute *Efficiency* is the only one that attained a positive result; this answer *can users solve their tasks without unnecessary effort?* Meanwhile, *Dependability* has reached a neutral evaluation while *Perspicuity* achieved a less neutral marking from the users; this attribute revealed *if the airline chatbots are easy to get familiar with and if it is easy to learn how to use it?*

The scales describing hedonic quality *Simulation* and *Novelty* also showed a neutral evaluation; this means that *users find the airline chatbots efficient but lags in attractiveness, simulation, dependability, and especially perspicuity*. The results suggest that specific attributes need to be looked into further development by airline chatbot designers. The results generally show a neutral marking. According to Gasper et al. (2019), neutrality depends on whether one is experiencing a decrease in emotional stress or pleasure; it is perceived as pleasant or unpleasant.

TABLE 1. Summative UEQ Results showing the scales and the results of the assessment

<i>UEQ Scales</i>	Mean	Interpretation
<i>Attractiveness</i>		
<i>Overall impression of the Chatbot. Do users like or dislike the Chatbot?</i>	0.689	Neutral
<i>Perspicuity</i>		
<i>Is it easy to get familiar with the Chatbot? Is it easy to learn how to use the Chatbot?</i>	0.373	Less Neutral
<i>Efficiency</i>		
<i>Can users solve their tasks without unnecessary effort?</i>	0.809	Positive
<i>Dependability</i>		
<i>Does the user feel in control of the interaction?</i>	0.598	Neutral
<i>Simulation</i>		
<i>Is it exciting and motivating to use the Chatbot?</i>	0.613	Neutral
<i>Novelty</i>		
<i>Is the Chatbot innovative and creative? Does the Chatbot catch the interest of users?</i>	0.549	Neutral

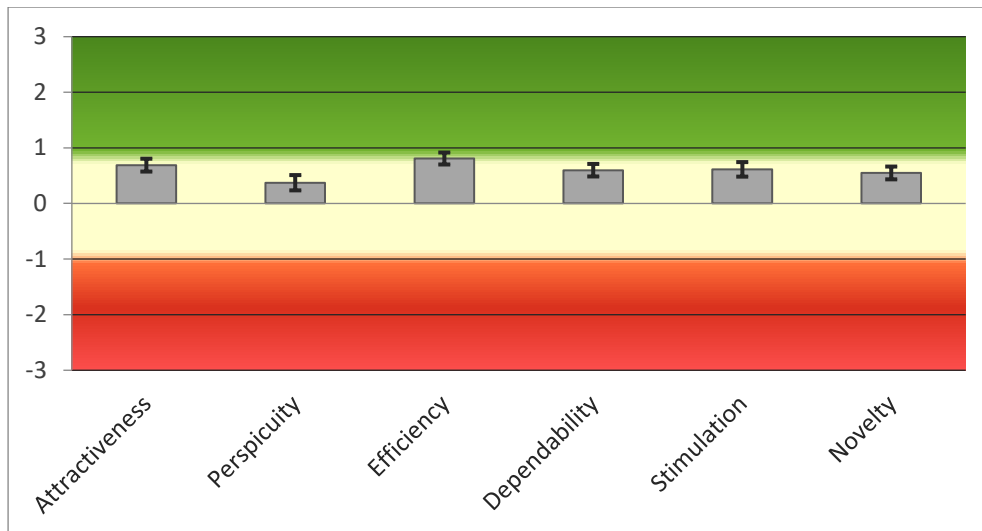


FIGURE 2. Summarized findings of UEQ English Version in the graph

Figure 2 shows the participants' markings graded on a scale of -3 to +3. Once the participant marks 1 on a specific question, the question will receive a score of -3; nevertheless, if they respond 7, the question will receive a score of 3. Figure 2 shows that the mean score according to attributes is primarily neutral. The mean score was derived using the average of all questions pertaining to the attribute. The mean of the scores was utilized to compute the attribute score, -3 denotes the most negative response, 0 denotes a neutral response, and +3 denotes the highly positive response. Users positively think of the item assessed if the scale values are above +1 and a negative impression if the scale values are below -1. Because of well-known response effects such as avoiding extremes, observed scales mean values are typically in the -2 to +2 range. Because more extreme values are uncommon, a result approaching +2 denotes participants' very positive, near-optimal opinion (Rauschenberger et al., 2013).

According to Følstad & Brandtzaeg (2020), for chatbots to be extensively adopted, they must be viewed as valuable and pleasant by users. They emphasized the importance of continuing to undertake philosophically-informed studies on what constitutes a good or terrible chatbot user experience to understand the user experience better while using chatbots. The study contradicts the conclusions of Adam et al. (2020). Chatbots are becoming more popular in numerous contexts and can save organizations time & expense; many consumers continue to have negative experiences with chatbots.

Chatbot users appear to prioritize pragmatic and hedonic chatbot traits differently. According to Følstad & Brandtzaeg (2020), chatbot service providers could benefit from learning about the needs of different user groups and designing chatbots that can adapt to those needs. In task-oriented chatbots, usefulness reigns supreme. Task-oriented chatbot systems must address users' problems and aid users in attaining their goals effectively and efficiently to provide excellent chatbot user experiences. For all chatbot solutions to sustain interest, it is critical to interpret the user's goals and provide suitable responses correctly. Even though chatbots are still a relatively new interaction technology, service providers must ensure that their chatbots accomplish their intended goals and that their customers value these goals.

According to other findings from similar studies, users regard chatbot dialogues as excellent and advantageous to strengthening their relationship with the company (Skjuve et al., 2021). According to Yu (2020), most participants had a better acceptance of innovative technologies and a good user experience. In contrast to the conclusions of Yao et al. (2020), research findings demonstrate that chatbots benefit users.

THEME-BASED EVALUATION

The airline chatbot users' comments were the focus of the qualitative phase, which was evaluated using a thematic analysis approach.

Users identified difficulties or unfavorable characteristics of the chatbot to a lesser extent than good attributes in the findings of Følstad & Skjuve (2019); when users reported on their interactions with the chatbot, they rated it as fast and efficient, and it provided simple help in a readily accessible manner. The user complimented the chatbot's capacity to supplement its textual responses with links to more information or specialized self-service options on the company website. Følstad & Skjuve (2019) note that visual appearance has less impact on the user experience than appearance communicated through textual information. The textual content appears to be more essential to users than the aesthetic attribute when determining a chatbot's persona and appearance. As a result, writing textual content is an integral part of the design process.

FIGURE 3. Data Analysis for Qualitative Data

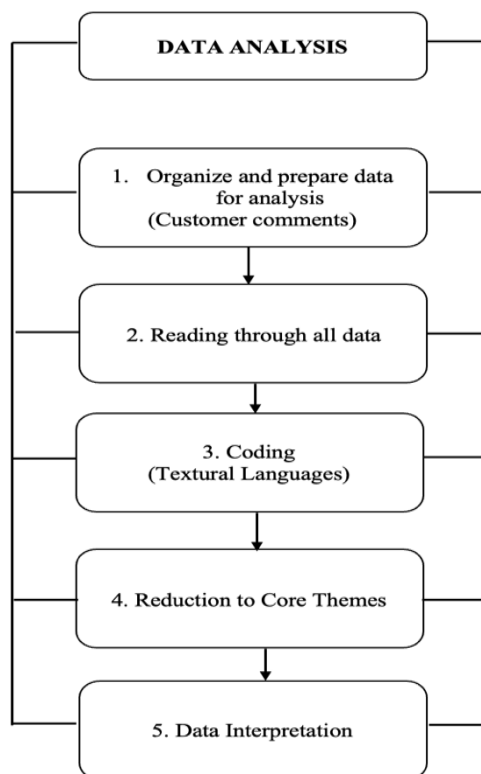


Figure 3 presents the process of analyzing the comments gathered from the users' experience on the airline chatbot. The comments were organized and prepared for analysis; the researchers then went exhaustively to read the statement and search for patterns on similarities and differences of statements from the users of the airline chatbots. The significant statements were then coded and reduced into the core themes.

Table 2 presents the core themes that emerged from the analysis of the comments of the chatbot users. The users described the use of airline chatbots with the following themes: theme 1 Difficult Experience (*problem beyond basic, difficult, inconvenience*); theme 2 Limitations of the airline chatbot (*limited options, internet dependent, limited response*); theme 3 Lack of human connections (*prefer real person*) and; theme 4 Positive experiences (*good features, easy, fast service*).

TABLE 2. Thematic clustering to create core themes

Core Themes of the User Experience	Textural Language
<i>Difficult experiences</i>	Problem beyond basic Difficult Inconvenience
<i>Limitations of the airline chatbots</i>	Limited options Internet dependent Limited response
<i>Lack of human connections</i>	Prefer real person
<i>Positive experiences</i>	Good Features Easy Fast service

Each theme is comprehensively discussed with literature incorporating the expressions and quotes from the participants.

Theme 1: Difficult Experiences in utilizing the Airline Chatbot

Technology delivers both beneficial and adverse changes to one's way of life. In this study, the users provided comments about their experiences with the chatbot, and some expressed their challenges using the chatbot.

Problem Beyond Basic

Some customers who have used the chatbots express their opinions on the improvements needed. The users have the following to say:

"...I like the chatbot, but it needs improvement in catering passengers non-basic questions."

"...my problem is not basic; it's not included among the options provided. "I have to call, and it takes forever, and the refund took more than 6 months too.."

Difficult

The customers also expressed their difficult experiences with the airline chatbots. The following were the comments from the participants:

"...Sometimes it is difficult to use because it needs a stable internet connection..."

"... I asked for help, but the one I asked also does not know how to use the chatbot..."

"... It's difficult to find a person to talk to..."

Inconvenience

Furthermore, the participants find the airline chatbots inconvenient, and these are what they have to say:

"I know this tech is the future, but it is a hassle."

"... Had a lot of trouble processing my request...."

"...I find as more problems than solution...."

According to Følstad et al. (2018), the chatbot only works well for simple, general questions and provides responses that have been well-reviewed. The most challenging part of deploying chatbots for customer service was deciphering difficulties. The chatbot does not always understand the customer's question (Um et al. 2020). Participants also found an issue with chatbots being unable to answer complex queries. Følstad et al. (2018) stressed that the chatbot could efficiently assist, match a question with an appropriate response, and ensure that the responses are high quality. When it came to users' tasks, Cheng et al. (2021) state that

consumers may be more concerned about the chatbots' professional level and ability to solve problems than their attitudes. Customers may seek assistance from customer service when the problem is too challenging to address. In this instance, customers may pay more attention to the knowledge and professionalism displayed by customer service representatives. As a result, being warm and sympathetic yet providing inflexible and standardized solutions will not increase client satisfaction (Illescas-Manzano et al., 2021).

Theme 2. Limitations of the airline chatbots

Despite advancements in airline chatbot technology, there are still limitations. Any technology can have flaws that need to be addressed. Participants have echoed this sentiment in their remarks.

Limited Options

Chatbots are designed to address the customers' needs, but some express limited commands.

The customers have the following to say:

"...but it can only manage basic passenger problems like information 101.."

"...I hope they will provide a choice to speak to someone or chat with some human...."

Other customers also said:

"... they should be accepting ticket payments thru credit card, Paypal...."

"...chatbot accommodates limited questions only.."

"...If only it could provide more alternative options depending on your reasons why you need their help.."

Internet-dependent

One participant has highlighted the need for internet connection:

"... it's fine as long as you have a good smartphone and good internet...."

Limited response

Because the chatbot is designed to meet the needs of customers, Users have stressed the limited response of the Chatbot:

"...service is not yet at par with the service I get when I go the ticketing office or travel agency solves the right problems right away..."

"...I asked my kids because I had a tough time accessing the help through chat. It doesn't give us the answer we need...."

"...The technology options given are generic, if only it could provide more alternative options...."

Customers are more likely to share their bad encounters than good ones (Gingiss, 2019). Chatbots are often thought to be less knowledgeable and unpleasant, decreasing users' communication efficacy. Both corporations and customers prefer chatbots that represent a company's image and give a positive user experience. Users who trust chatbots can improve brand perception and trust and produce a good attitude toward the company (Yu, 2021). Chatbot services require a solid internet connection (Adampoulou & Moussaides, 2020); this means that a consumer must have a reliable internet source to use the service. Følstad et al. (2018) report that there was concern regarding the future availability of human customer

service, which was frequently expressed as a need to have customer care workers as an alternative, even if more efficient chatbots were available the future. Not having such quick access to customer service people may be a disadvantage. The ability of customer service chatbots to correctly read customers' inquiries and demands and their ability to provide helpful and informative responses is a critical factor determining their confidence. Customers are more concerned with the ability of chatbots to solve complex or straightforward problems (Illescas-Manzano et al., 2021). A chatbot must achieve its primary aim while surpassing existing websites, applications, or search engine alternatives by providing a wide range of new and better capabilities. Furthermore, chatbots must inform clients about their capabilities and check for domain compatibility (Jain et al., 2018).

Theme 3. Lack of Human Connections

Technology advances strive to make human activities more convenient and productive; nonetheless, this does not rule out the possibility of human interaction, which chatbot users value.

Prefer Real Person

The participants' response emphasizes incorporating human touch into all customer service encounters.

"...I have trouble with the process my request was not granted, I need a person to help me with my changes. It takes so much time...."

"...I feel much better with a person responding to me.."

"...It made me feel that somehow the conversation I have was non-human or robotic.."

"...there is something about human connection that would make a difference in my experience...."

Although socially intelligent chatbots are unlikely to replace the best human customer service representatives, they may improve the customer experience. On the other hand, human service agents struggle with consistency in service delivery and expertise (Brandtzaeg & Følstad, 2017). When it comes to interacting with clients, human similarity is vital. A human-like communication strategy will help to build trust. The need for the chatbot to converse in a compassionate and human-like manner was stressed by Um et al. (2020) people prefer to stay in their current condition since dealing with situations in a new environment is difficult. The absence of human likeness is determined by communication style. According to Følstad et al. (2018), failure to do so may lead the user to believe that the chatbot can do more than it can, resulting in annoyance and a diminished desire to use chatbots for this reason. According to Jain et al. (2018), individuals are disillusioned and sometimes irritated by chatbot linguistic skills that are inadequate. Users claimed that chatbots frequently misunderstood their input content or intent, preventing them from engaging with or responding to them effectively.

Theme 4. Positive Experiences

Many things may be learned through experiences, and the participants used the airline chatbots to share their positive experiences. The following are what the chatbot users had to say:

Good Features

According to some participants, the airline chatbots have good characteristics:

"...it is easier now to get hold of information.."
"... creative and helpful, and I accessed it fast.."
"...The technology is good and smart. "
"...the chatbot was so nice. I had a lot of fun using it and it's really fast too!"

Easy

The airline chatbot, according to some participants, has simple to use characteristics:
"...it is easier now to get hold of information at a click of the finger...."
"...Easy, helpful, and convenient...."
"...Easy on the eyes. Easy to navigate. That's about it..."

Fast service

The participants also shared that the airline chatbot provides fast service:
"...amazing to have your questions answered at very fast speed...."
"...The system is very fast and easy to access like talking.."
"...When I have used the chatbot, it is better than calling a representative; it is faster...."

Chatbots are more efficient and can reach a broader audience than humans. Chatbots have the potential to be helpful in information gathering. Chatbots help save time (Adamopoulou & Moussiades, 2020). The majority of participants in Brandtzaeg and Følstad (2017) study claimed that the primary motive for using chatbots is efficiency. The participants chose chatbots because of their simplicity, speed, and convenience. Chatbots provide help and information. Many customer service professionals are expected to accomplish tasks with near-mechanistic efficiency and precision; yet, individual employees behave differently, and even the same employee's behavior can alter during the day. The majority of businesses are concerned about service delivery standardization. The findings of this study are comparable to those of Deksnė & Vasiljevs (2018) who found that users of the chatbot find it easy to comprehend and valuable. On the other hand, other users were not pleased with the guided dialog. Some users were dissatisfied with the guided dialog since they could not locate the answer they were looking for; yet, this shows that a guided dialog may efficiently answer common questions.

Chatbots' functions and social abilities are connected and the communication technique makes users feel polite and human-like (Cheng & Jiang, 2020). Humanization can help chatbots provide a better user experience; too much humanization might harm trust. As a result, essential features such as chatbot information, privacy, and perceived safety will surely improve the company's reputation among users. Chatbots should communicate a sense of trust when dealing with real people to help customers create trust. It uses emotional discourse to establish a friendly relationship between users and businesses, built on human-computer interface design and content. As a result, it impacts the user's emotional cognition and trust and if the product or service can project a positive image and attitude toward the organization. With this in mind, the chatbot successfully replaces real-time customer support by offering users accurate and rapid responses via online services or consultations (Yu, 2021).

This study investigates the user experiences with airline chatbots. To better understand the experiences, the researchers used two critical methodologies to delve beyond the bounds of quantitative indicators. The survey's findings suggest that efficiency received a score that requires a favorable interpretation. Still, most attributes received a neutral level of response,

except Perspicuity, which received a score that warranted a less neutral reading. On the one hand, the qualitative data demonstrated that customers have positive and negative experiences. The ease of use and quick response are two positive primary results; nevertheless, users also mentioned that airline chatbots have limitations in handling problems that go beyond the basics. Another noteworthy conclusion is the requirement for actual human interaction; some consumers would still like to speak with a live person to express their concerns. There may be issues that require further explanation, although there were disappointments among the participants in this survey. The researchers were able to extrapolate from both investigations what customers worry about most when it comes to airline chatbots in general. It is vital to highlight that chatbots in the Philippines are still in their infancy stage. As a result, adoption may not be as enthusiastically accepted as one might assume, given the goal of integrating an AI-based customer service. Airlines may need to examine the acceptance of this growing technology from customers' standpoint as a continuous improvement input.

CONCLUSION

In the Philippines, the usage of chatbots in airline firms is a novel concept. The study allowed researchers to look at the customers' points of view. Airline chatbot users in the study gave their positive and negative feedback in using the airline chatbot. To summarize, the airline chatbots may still have a long way to go; despite rapid technological advancements, clients in the Philippines have yet to embrace AI-based customer care. Customers will expect more from chatbots, which will become routine in most technology-enabled businesses. As a result, it is vital to regularly stay on top of these developments and evaluate existing chatbot features. Chatbots have recently begun to replace traditional services. Having a high-quality chatbot available to users can provide businesses with an advantage. Chatbots are still evolving, and users' perceptions alter over time due to their interactions with them. Because chatbots are still a relatively new technology, it is critical to learn more about how users perceive them and what characteristics help developers understand them. Companies and individuals can quickly access airline services because of innovations like chatbots. Airlines must integrate chatbots into their organizational culture and recognize that there is still a need for human interaction or escalation throughout the user's interaction with the airline chatbot. There are some issues that airline chatbots cannot address yet. Chatbots are gaining popularity among businesses, and several industries are likely to integrate them in the future. As users grow more familiar with the new technology and its impacts, they may develop acclimated to the services provided and respond differently over time.

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