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AIRLINE CHATBOTS AS COMMUNICATION TOOL TOWARDS CONSUMER SATISFACTION ON PRE-FLIGHT ASSISTANCE SERVICES

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Abstract

Tourism is a catalyst for facilitating a change in the aviation industry, particularly the development of new business models like commercial airlines which known to be the key global leader in aviation which provides different services and evolves as they adapt into the ever-changing needs of society. Thus, this study intended to determine effects of airline chatbots as communication tool towards consumer satisfaction on pre-flight assistance services. The researchers utilized descriptive method of research design to complete this study. Using the adapted-modified and researchers' made instrument, the researchers surveyed 350 respondents who resides at CALABARZON, a frequent flier of at least one of the major airlines in the Philippines and have experienced using airline chatbot on pre-flight assistance services of at least one of the major airlines in the Philippines. It was then revealed that airline chatbots as a communication tool affects travelers' satisfaction on pre-flight assistance services. Moreover, regarding the result on spearman rho, this study implies that there is a strong direct relationship between airline chatbots used as a communication tool and the consumer satisfaction on the pre-flight assistance services. Therefore, using airline chatbots as a communication tool with its features to automate, personalized, to understand, to feel emotions and to make decisions contributes to the satisfactory of travelers on accessing different necessary information as for their pre-flight background researching.

Keywords: Airline chatbots, consumer experience, pre-flight assistance, satisfaction

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1. Introduction

Tourism is a catalyst for facilitating a change in the aviation industry, particularly the development of new business models like commercial airlines. Wherein the airline industry refers to the enterprises that provide paid air transportation. Given this, the airline industry can be considered a subset of the more significant aviation industry. According to the study made by Trapero et al. (2020), the airline business is a key global leader in aviation. It has helped make the world more attractive by increasing mobility and accessibility. The essence of the tourism and hospitality industry, which relies heavily on information, necessitates, continuous communication with stakeholder and also consumers want to keep up with what businesses are providing. They look for this information on websites and other means of communication such as phone calls and instant messaging. For instance, as Ukpabi et al. (2019) stated, the increase in communication on primary instant messaging services such as WhatsApp, Facebook Messenger, Snapchat, and Skype have evident ramifications for businesses. Companies, particularly in the tourism industry, could take advantage of this chance to use chatbots to improve their existing services. In adapting to the ever-changing needs of society, the three major airline industry in the Philippines such as Cebu Pacific, Air Asia and Philippine Airlines produced its new features using their websites with the use of chatbots to answer the inquires of the consumers. Caiga et al. (2018), stated that local airlines in the Philippines are classified as mainline, regional, charter, and cargo including the 3 major airlines in the Philippines such as Cebu Pacific Air, Philippine Airlines, and Philippine Air Asia.

As stated by Zemčík (2019), the tremendous spread of the Internet, particularly social networking sites, led to a boom in the use of chatbots, whether with a simple or more advanced artificial intelligence application. This system is used as a communication tool to engage with consumers and advertising and promotion, gathering data, and a platform used to influence public opinion. In relation to the study made by Bansal and Khan (2018), a chatbot is a representation of human interaction and artificially intelligent software. It is a system that consists of an electronic program that communicates using several names, including a computer conversation system, electronic agent, dialogue system, and chatterbot using spoken language that replicates realistic conversation. Chatbots, as one of the features of airline websites, helps tourist engagement. Wherein Winkler and Sollner (2018) elaborated that its goal is to boost consumer engagement by interacting instantaneously and being accessible twenty-four (24) hours a day and anticipating consumers' queries, allowing them to communicate with people and give them the information they require.

As indicated by Ashfaq et al. (2020), consumers' confidence toward chatbots is strongly influenced and predicted by their happiness with chatbot e-service, according to the studies. To significantly boost consumer satisfaction, chatbots must improve their data and information quality. Consumers loyalty is lowered when a system is slow and consumers experience service interruptions, has a bad user experience design, does not reply in a timely and accurate manner, or does not provide individual attention (Gao & Waechter, 2017). Users who feel intrinsic excitement and come up with a system interesting throughout their use might influence overall consumer happiness and consumer intelligence, because consumers occasionally utilize technology for fun and enjoyment rather than performing improvement (McLean et al., 2020).

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According to Chen et al. (2021), chatbots had a favorable impact on external user experience values, whereas chatbot responsiveness had a positive impact on genuine consumer experience values. However, chatbots in some other point is unable to make decisions (Lin et al., 2022), which create different issues. Chatbot discussions are usually recognized as unnatural and impersonal in nature (Liebrecht & Hooijdonk, 2020). As stated by Elliott (2018), misinterpreted inquiries, inappropriate replies, and inadequate interaction with human service agents cause consumers to be frustrated with chatbots that affect the consumer satisfaction. Thus, this study aims to explore the effects of airline chatbots as a communication tool towards consumer satisfaction on pre-flight assistance services.

Moreover, with this study, it will be helpful and useful most especially to those airline companies who have already launched a chatbots and used it as one of their services towards communicating to the consumer/clients. This would also help the airlines to enhance the features of the chatbot that can easily adapt and accessible by the consumers in all ages not just only in pre-flight assistance services but can also assist in the post flight. Upon knowing that airline chatbot is existing and already known and catches the attention of the consumers, airline companies would like to improve its services in any aspect that will benefit both, the company and the consumer. We all know that artificial intelligence is now relevant especially now in our present generation, hence, this research paper will be helpful to the airline industry for them to know the different insights of consumers and will led them to always improve and continue to innovate in terms of the features of their airline chatbots.

This study aims to explore the effects of Airline Chatbots as a Communication Tool towards Consumer Satisfaction on Pre-Flight Assistance Services. Moreover, it sought to determine the demographics of the respondents in terms of age, sex, and employment status. To determine the effects of airline chatbots as a communication tool in terms of automatability, personalization, limited understanding, lack of emotion and null decision making. It also sought to determine how the airline chatbots affects the consumer satisfaction on pre-flight assistance services in terms of credibility, availability, relevancy of information, convenience, and accessibility. To determine if there is a significant difference between the effects of airline chatbots as communication tool and consumer satisfaction on pre-flight assistance services when grouped according to demographics. To determine if there is a significant relationship between the effects of airline chatbot as communication tool and consumer satisfaction on pre-flight assistance services. Lastly, to propose an output/improvement plan which is aligned with the results and findings of the study and could be the basis for the enhancement of the services provided by chatbots.

2. Methods

The descriptive method of research has been utilized to collect necessary data and information about the given variables. Descriptive research is a kind of research that affords a precise representation of characteristics of an individual, situation, or group. Moreover, the said kind of study is aimed to realize new meaning, describe the current existence, determine the regularity with which something occurs, and classifying information. It is concerned with situations, practices, structures, variances, or relationships that exist and opinions held processes that are going on or trends that are evident. The research design has been used to be able to comprehend and explore the variables of the study which are chatbots as

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communication tool used in airline and the consumer satisfaction upon using chatbots on pre-flight assistance services. This is for the researchers to be able to come up with such study that will explain if there is a significant difference between the effects of airline chatbot as communication tool and consumer satisfaction on pre-flight assistance services when grouped according to demographics and the significant relationship between the effects of airline chatbot as communication tool and consumer satisfaction on pre-flight assistance services.

The respondents of the study are locale residing at CALABARZON, Filipino citizens and was born from 2003 – below, have experienced using airline chatbots of at least one of the major airlines in the Philippines – Philippine Airlines, Cebu Pacific, and Air Asia as for their pre-flight assistance services as they gathered information for travel. Using the G-Power method, the researchers calculate the sample size of 350 tourists with an effect size of 0.2, an alpha error of 0.05, and a power of 0.95.

These aided the researchers in their ability to compile data and develop a thorough understanding of the parameters of their chosen study. The questionnaire was distributed through own judgement of the researchers on choosing the members of the target demographic until the sample size was attained. The researchers established a selection of qualified respondents based on their knowledge of the study and population. Additionally, this contributed to the research study's credibility and validity being established on conducting the research - as these qualifiers served as a guide for the study on obtaining its credibility. The respondents chosen by the researchers are selected using a purposive sampling.

To be able to come up with 350 respondents, the researcher utilized purposive sampling which is a non-probability sampling technique wherein the sampling relies on the judgement of the researcher in selecting the units that are to be studied. It's a non-random strategy that doesn't require any underlying ideas or a predetermined quantity of respondents. Simply said, the researchers determine what information is required and sets out to discover people who can and will supply it based on their knowledge or experiences, Etikan et al. (2016). The criteria for selection were the following: a resident of CALABARZON, frequent flier of at least one of the three major airlines in the Philippines, have experienced the chatbot pre-flight assistance services in the websites of at least one of the three major airlines in the Philippines.

The researchers of the study self-administered the survey questionnaire. The data has been collected with the use of google forms. The researchers worked as a team to gather all the respondents of the study with the means of utilizing social media platform. Humbly asking for the permission to lend their short time in answering the survey questionnaire honesty. In the letter attached before the questionnaire, the respondents were informed that the participation in answering the questionnaire is voluntary. Second, they will be advised that wrong and right answers do not exist for each item in the questionnaire. Lastly, they are guaranteed that the answers will be treated with discreetness and anonymity, thus their names were never asked.

Respondents were provided with Google Form survey links that linked them to the questionnaire during the actual data collection. The researchers distribute the survey questionnaire through several social media platforms and contact respondents through private message to ensure that persons who reply to the survey questionnaire have experience and familiar with airline chatbots. Before participants agreed to the terms and conditions between respondents and researchers by placing a checkmark in the box, they

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were provided with a brief overview of the study so that they would be aware of what they would be participating in. It took approximately five to ten minutes to complete the survey. After completing the questionnaire, the results were tallied and collated, which served as the basis for analysis and interpretation.

The data collected were tallied and calculated using different statistical measures. It was encoded and summarized using tables by a descriptive data analysis. The data were analyzed accordingly using the following statistical tools: Frequency and Percentage, Kruskal-Wallis Test, and Spearman rho.

Furthermore, the test of the normality of the data using the Kolmogorov-Smirnov and Shapiro-Wilk shows that the data are not normally distributed given that the significant value is less than 0.05. Moreover, nonparametric analysis is often the best choice for this kind of study because the conclusions don't alter if the numerical data change. It is a test procedure that does not need to investigate a distribution to meet the assumptions. Because of this, it is often called "distribution-free tests." Instead of parametric tests like the T-test or ANOVA, nonparametric tests can be used. Parametric tests, like the T-test or ANOVA, can only be used to show the underlying data and make sure it meets requirements and assumptions.

3. Results and Discussion

Table 1 presents the profile of the respondents; the result shows that majority of the respondents according to age are Gen Z which is 180 or 51.4%, followed by Millennials which is 125 or 35.7%, Gen X which is 33 or 9.4% while Boomers which is 12 or 3.4% are the least represented. The result shows that Gen Z is the one who were effectively using chatbots on their pre-flight assistance services when to travel. Travelers of Generation Z are aware of the specific benefits of travel, such as understanding other cultures, building life experiences, and increasing self-confidence. They also believe that tourism is beneficial to the communities in which it occurs and recognize that tourism is beneficial to the communities in which it occurs. It can be gleaned that this generation are now on the trend of using online or in technological aspect. As supported by the study of Dimock (2019), Generation Z is described as anyone born after 1997. Gen Z flourished up in the digital age, the internet, and media platforms, which often leads to stereotypes of tech-addicts. Hence, they are the type of individuals who uses online cites as part of their daily life.

Table 1. Frequency Distribution of Travelers in terms of Age

Age	Frequency	Percent
Boomers (1946-1964)	12	3.4
Gen X (1965-1976)	33	9.4
Millennials (1977-1995)	125	35.7
Gen Z (1996-2003)	180	51.4
Total	350	100

Table 2 illustrated that 42.65 of the respondents are male and 57.4% were female. It only signifies that most of the females considered using online assistance when it comes to travelling. Women travel more daringly than men do, looking for unusual and new places to go. Men, on the other hand, prefer to

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go to places they know well. Furthermore, women are more likely than men to book their own flights and hotel rooms while traveling in a group so that they can maximize the use of their frequent flyer miles, loyalty points, and hotel rewards. As the study by Gibson et al. (2018) discovered that women and men's tourist preferences differed significantly over time in a study of travel preferences. Women were discovered to be the key decision makers in terms of travel and being more committed to the brand than men. Thus, this means that females are committed on finding necessary information that basically serves as the basic needs to execute a very well-planned travel. Since they believe that it's crucial to have a plan in place that dictates travel details like where to go. There has been a recent increase in new of women vacationers, and these tourists tend to be eager to find good deals.

Table 2. Frequency Distribution of Travelers in terms of Sex

Sex	Frequency	Percent
Male	149	42.6
Female	201	57.4
Total	350	100

It is evident from table 3 that 172 of the respondents were employed, 106 were unemployed and 72 marked themselves as self-employed. From the results, it can be gleaned that most of the employed individuals are using online assistance and are likely to travel. Also, some of the studies also considered giving motivations or incentives like travelling to their employees as a reward for hard work. Then, chatbots are the best way for agencies to please most of their customers, especially working people who don't have much time to go to a travel agency and ask for help. The chatbot can act as a travel agent and answer important questions from consumers. Furthermore, to basic facts, the chatbot would be able to give each consumer personalized suggestions. In fact, chatbots use a combination of two technologies that make them good at customer service. They can act based on what's going on because of ai technology and automatically generated natural language processing. Also good, a chatbot for commerce can be linked to all kinds of communication channels, like social networks, which are very useful and easy to use for people who are busy—employees and don't have time to talk to a travel agent.

Table 3. Frequency Distribution of Travelers in terms of Employment Status

Employment Status	Frequency	Percent
Employed	172	49.1
Unemployed	106	30.3
Self Employed	72	20.6
Total	350	100

Table 4 shows how Gen Z's, female and employed travelers marked the Automatability of airline chatbots as a communication tool with a composite mean of 3.00. It indicates that the automatability of airline chatbots as a communication tool to the user was often performed. It can understand and reply to queries posed to it in normal language, much like a human being. Rather of relying solely on set scripts, it also employs machine learning algorithms to come up with answers. The chatbot will react to a question depending on the information in its knowledge base at the moment the question is asked. Since majority

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of the respondents are came from Gen Z, they are satisfied with the automatability that is providing by the chatbot.

Table 4. Effects of Airline Chatbots as a Communication Tool in terms of Automatability

I can say that…	Weighted Mean	Interpretation
The automated replies of the airline chatbots are relevant to my queries.	3.09	Satisfied
The performance of airline chatbots in answering repeated tasks automatically is effective.	2.88	Satisfied
The airline chatbots automatically respond quickly and pay attention without interruption.	3.04	Satisfied
Composite Mean	3.00	

Legend: 3.50 - 4.00 – Very Satisfied (VS); 2.50 - 3.49 – Satisfied (S); 1.50 - 2.49 – Dissatisfied (D); 1.00 - 1.49 – Very Dissatisfied (VD)

Table 5 shows the results on how Gen Z's, female and employed travelers marked the personalization of airline chatbots as a communication tool with a composite mean of 3.01. It indicates that the personalization of airline chatbots as a communication tool to the travelers was often performed. Personalization is one of the ways which connects the AI and the consumer, it is how the chatbot can provide services as natural as it is with the means of online interaction. Based on the findings, chatbots can leave a remarkable experience to the consumer, thus, it means that during the interaction, chatbots are being programmed on how they can reply to the consumer queries as easy, understandable, and naturally.

Table 5. Effects of Airline Chatbots as a Communication Tool in terms of Personalization

I believe that…	Weighted Mean	Interpretation
The format used by airline chatbots on the chat box has given me a remarkable experience.	3.04	Satisfied
The replies of airline chatbots are personalized messages that are related to my queries.	2.97	Satisfied
The airline chatbots customize their response to my preference.	3.03	Satisfied
Composite Mean	3.01	Satisfied

Legend: 3.50 - 4.00 – Very Satisfied (VS); 2.50 - 3.49 – Satisfied (S); 1.50 - 2.49 – Dissatisfied (D); 1.00 - 1.49 – Very Dissatisfied (VD)

Table 6 shows how Gen Z's, female and employed travelers marked the limited understanding of airline chatbots as a communication tool with a composite mean of 2.95. It indicates that the limited understanding of airline chatbots as a communication tool to the travelers was often performed. Limited understanding is on how chatbots can easily understand the queries of the consumer, in any words and that can provide an answer which is accurate to the information that was being asked. Based on the table above, chatbots has its capabilities to recognize words and can adapt into different situation which makes the consumer to interact lively and with curiosity, hence, it is undeniable that sometimes the AI has the limitations, it is since everything was set and already programmed.

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Table 6. Effects of Airline Chatbots as a Communication Tool in terms of Limited Understanding

I am able to experience that…	Weighted Mean	Interpretation
The airline chatbots easily reply to multiple sets of questions.	2.93	Satisfied
The airline chatbots easily adapt to different sets of situations.	2.88	Satisfied
The airline chatbots easily recognized consumer inquiries.	3.05	Satisfied
Composite Mean	2.95	Satisfied

Legend: 3.50 - 4.00 – Very Satisfied (VS); 2.50 - 3.49 – Satisfied (S); 1.50 - 2.49 – Dissatisfied (D); 1.00 - 1.49 – Very Dissatisfied (VD)

The Table 7 shows how Gen Z's, female and employed travelers marked the lack of emotion of chatbot as a communication tool with a composite mean of (2.86). It is evidence that the travelers are pleased with the emotions that were displayed by the chatbot while they were interacting with it. Lack of emotion is somehow being personalized since it is the feelings that a consumer wanted to feel even though it was an interaction online, it is important to build trust and especially for the travelers or consumers to feel free when using online chatbots. Based on the findings, chatbots is programmed in the way that it can easily build relationship with the consumer, it is for example, with the use of greetings and as well as emojis. It also shows that it is possible that chatbots may employ emotions connected to humans.

Table 7. Effects of Airline Chatbots as a Communication Tool in terms of Limited Lack of Communication

I encounter that…	Weighted Mean	Interpretation
Airline chatbots express emotion during our interaction.	2.85	Satisfied
Airline chatbots addresses me properly during our conversation.	2.95	Satisfied
Airline chatbots detect my emotions during our discussion.	2.77	Satisfied
Composite Mean	2.86	Satisfied

Legend: 3.50 - 4.00 – Very Satisfied (VS); 2.50 - 3.49 – Satisfied (S); 1.50 - 2.49 – Dissatisfied (D); 1.00 - 1.49 – Very Dissatisfied (VD)

Table 8 shows how Gen Z's, female and employed travelers marked the decision making of chatbot as a communication tool with a composite mean (2.90) satisfied. It is clearly seen that the consumers feel the decision making of the chatbot since it gives them accurate and pointed answers that have thorough analysis to answer their queries. One of the most important parts of the system of chatbots is on how it works to understand the queries for it to be able to provide the appropriate response. It is like a mind working whether to decide which the best answer will fit to the questions. Based on the findings above, chatbot was launched following its main goal, which is to provide an accurate travel detail, to comprehend questions, decide and make judgment, Airline chatbot figure out the questions and needs of the consumers and help them understand what services or offers they have that can improve their experience with their interaction.

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Table 8. Effects of Airline Chatbots as a Communication Tool in terms of Null Decision Making

I can feel that…	Weighted Mean	Interpretation
Airline chatbots make judgments during our interactions.	2.86	Satisfied
Airline chatbots provide absolute decision-making.	2.85	Satisfied
The airline chatbots comprehend questions easily.	2.98	Satisfied
Composite Mean	2.90	Satisfied

Legend: 3.50 - 4.00 – Very Satisfied (VS); 2.50 - 3.49 – Satisfied (S); 1.50 - 2.49 – Dissatisfied (D); 1.00 - 1.49 – Very Dissatisfied (VD)

The table 9 shows how Gen Z's, female and employed travelers marked the credibility of chatbot concerning consumer satisfaction (3.00) satisfied. It means that the consumers are satisfied with the credibility that the chatbot has. The credibility of information is what makes chatbot more trusted by the travelers or consumers since it is what they are looking for and to acquire the credible information that will suffice to their needs. Based on the results, when interacting with the chatbot, it can provide the information they needed as pure and truthful. They can affirm that airline chatbot gives them a credible information in relation to their queries.

Table 9. Effects of Airline Chatbots to Consumer Satisfaction on Pre-Flight Assistance Services in terms of Credibility of Information

I can affirm that…	Weighted Mean	Interpretation
Airline chatbots support communications accuracy and credibility.	3.00	Satisfied
Airline chatbots provide legitimate and credible information.	2.94	Satisfied
Airline chatbots reply, understand, and deliver credible information regarding my concerns.	3.05	Satisfied
Composite Mean	3.00	Satisfied

Legend: 3.50 - 4.00 – Very Satisfied (VS); 2.50 - 3.49 – Satisfied (S); 1.50 - 2.49 – Dissatisfied (D); 1.00 - 1.49 – Very Dissatisfied (VD)

Table 10 shows how Gen Z's, female and employed travelers marked the relevancy of information of chatbot as a communication tool with a composite mean of 3.02, satisfied. It indicates that the information provided to consumers by airline chatbots is beneficial and valuable. The information that the chat the chatbot is providing to the travelers can help them plan their trip as if they are talking to a real human travel representative. they trust in the answer that the airline chatbot is giving to them since they can feel and assume that those replies given by the chatbot can greatly help them and as a result chatbot can gained trust from the travelers.

Table 10. Effects of Airline Chatbots to Consumer Satisfaction on Pre-Flight Assistance Services in terms of Relevancy of Information

I can attest that…	Weighted Mean	Interpretation
Airline chatbots replies to my requests are useful.	3.02	Satisfied
Airline chatbots gives information efficiently and manageably.	2.97	Satisfied
Airline chatbots provide benefits and advantages in addressing my needs.	3.06	Satisfied
Composite Mean	3.02	Satisfied

Legend: 3.50 - 4.00 – Very Satisfied (VS); 2.50 - 3.49 – Satisfied (S); 1.50 - 2.49 – Dissatisfied (D); 1.00 - 1.49 – Very Dissatisfied (VD)

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Table 11 shows how Gen Z's, female and employed travelers marked the availability of chatbots as a communication tool with a composite mean of 3.01, satisfied. It signifies that airline chatbots were useful for consumers in terms of assisting anytime and engaging. By analyzing the context of a user's inquiry, chatbots may now provide useful responses. They provide an intriguing channel for firms to interact with consumers because of the combination of rapid reaction and constant availability.

Table 11. Effects of Airline Chatbots to Consumer Satisfaction on Pre-Flight Assistance Services in terms of Availability

I can assert that…	Weighted Mean	Interpretation
Airline chatbots interact with me at any time of the day.	3.02	Satisfied
Airline chatbot manages my queries and provides minute answers immediately.	2.99	Satisfied
Airline chatbots provide me with successful assistance.	3.03	Satisfied
Composite Mean	3.01	Satisfied

Legend: 3.50 - 4.00 – Very Satisfied (VS); 2.50 - 3.49 – Satisfied (S); 1.50 - 2.49 – Dissatisfied (D); 1.00 - 1.49 – Very Dissatisfied (VD)

Table 12 shows how Gen Z's, female and employed travelers marked that the convenience of the airline chatbots in the consumer has a composite mean of 3.03. It means that the airline chatbot is convenient for the consumers. It shows that the respondents of the study are totally satisfied on using the chatbot. Compared to humans, chatbots are more effective and have a wider audience. For the travelers it is more convenient to use the chatbot rather than going to a certain site to ask for an assistance. The chatbot has a flexible answer depending on the queries made by travelers.

Table 12. Effects of Airline Chatbots to Consumer Satisfaction on Pre-Flight Assistance Services in terms of Convenience

I can tell that…	Weighted Mean	Interpretation
Airline chatbots usage can help the consumer to feel comfortable.	3.02	Satisfied
Airline chatbots can provide a correct information in accordance with what consumer needs which makes the book processing convenience.	2.99	Satisfied
Airline chatbots can help consumers to access all the necessary details at their own pace.	3.08	Satisfied
Composite Mean	3.03	Satisfied

Legend: 3.50 - 4.00 – Very Satisfied (VS); 2.50 - 3.49 – Satisfied (S); 1.50 - 2.49 – Dissatisfied (D); 1.00 - 1.49 – Very Dissatisfied (VD)

Table 13 exhibits how Gen Z's, female and employed travelers marked the accessibility of the airline chatbots in the consumers has a composite mean of 3.04. Chatbot has an easy conversational pattern that is very accessible to the travelers' queries on their pre-flight. Having chatbot can give the travelers an ease while accessing and getting information that they need. They can access different information within anytime and anywhere they are. Moreover, they can talk to a chatbot just like a human figure that can give them quick and effective information that they can use.

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Table 13. Effects of Airline Chatbots to Consumer Satisfaction on Pre-Flight Assistance Services in terms of Accessibility

I believe that…	Weighted Mean	Interpretation
Airline chatbots' ability to be accessible to consumers and respond to their needs at any time is an advantage of accessibility.	3.05	Satisfied
Airline chatbots add a new level of support to the service quality dimension by ensuring that personalized assistance is accessible to fulfill client always demands and in any location.	3.00	Satisfied
Airline chatbots provide consumers with a lot of assistance during the process of booking a flight and any desired leisure activity.	3.08	Satisfied
Composite Mean	3.04	Satisfied

Legend: 3.50 - 4.00 – Very Satisfied (VS); 2.50 - 3.49 – Satisfied (S); 1.50 - 2.49 – Dissatisfied (D); 1.00 - 1.49 – Very Dissatisfied (VD)

The table 14 shows the effects of airline chatbots as a communication tool when grouped according to age shows no significant difference between limited understanding (.647), lack of emotion (.456), and null decision making (.586) since the obtained p-values were greater than 0.05 alpha level.

Data, however, reveals that age has a high influence on respondents in terms of automatability (.028) and personalization (.009) since majority of the respondents shows affection on how chatbots showcase their own features as well as having the capability to respond immediately. Since its introduction, AI has been used to great effect across a variety of sectors. The dynamic travel industry is likewise using AI to modernize its processes. Because of this, modern travel agencies heavily rely on AI-powered products and solutions for everything from travel research to airport arrival. Moreover, chatbot are becoming more popular especially when it comes to the different age of travelers since most of them are longing for instant reply that can easily help them in planning their trip. Automated reply and personalization of chatbot is very significant when it comes to the age of the travelers as it greatly affects the perceive usefulness of chatbot depending on the familiarity and interest of each traveler when it comes to their age gap. As chatbot promotes natural communication and comfort for the traveler it can easily get the trust of the travelers on the different queries that they have on their mind to ask in the airline chatbot and can get instant reply that is impossible to do in the old booking ad inquiries techniques.

Table 14. Difference between the Effects of Airline Chatbots as a Communication Tool when grouped according to Age

Effects of airline chatbots	Kruskal Wallis (x2) value	p-value	Interpretation
Automatability	9.076	.028	Significant
Personalization	11.598	.009	Significant
Limited Understanding	1.656	.647	Not Significant
Lack of Emotion	2.611	.456	Not Significant
Null Decision Making	1.937	.586	Not Significant

Note: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

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The table 15 shows the effects of airline chatbots as a communication tool when grouped according to sex shows no significant difference between automatability (.230), personalization (.199), limited understanding (.462) and lack of emotion (.378) since the obtained p-values were greater than 0.05 alpha level.

Table 15. Difference between the Effects of Airline Chatbots as a Communication Tool when grouped according to Sex

Effects of airline chatbots	Kruskal Wallis (x2) value	p-value	Interpretation
Automatability	1.439	.230	Not Significant
Personalization	1.652	.199	Not Significant
Limited Understanding	.541	.462	Not Significant
Lack of Emotion	.777	.378	Not Significant
Null Decision Making	5.770	.016	Significant

Note: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

Data, however, reveals that sex has a high influence on respondents in terms of null decision making (0.16) since majority of the respondents considered making sensible decisions as they want to travel safe and according to their prepared plans. There is also a difference when it comes to male and female when it comes to decision making that can greatly affect their trust on using and trusting the chatbot replies to their queries. On the other part, female wants a comprehensive answer in a certain question and need more explanation and choices to prove their choices, but on the other hand males wants a direct to the point answers regarding on their queries. Though, chatbot performance depends to the view of the travelers it can still give an answer that can be use in planning the trip of the travelers, although this is a system based representative there are still questions that cannot process by its system and as a result travelers will continue to look for the answers that will satisfy their queries regarding on their travel plan.

The table 16 shows the effects of airline chatbots as a communication tool when grouped according to employment status shows no significant difference of all sub-variables such as automatability (.202), personalization (.250), limited understanding (.051), lack of emotion (.378), and null decision making (.180) since the obtained p-values were greater than 0.05 alpha level.

Table 16. Difference between the Effects of Airline Chatbots as a Communication Tool when grouped according to Employment Status

Effects of airline chatbots	Kruskal Wallis (x2) value	p-value	Interpretation
Automatability	3.202	.202	Not Significant
Personalization	2.769	.250	Not Significant
Limited Understanding	5.373	.051	Not Significant
Lack of Emotion	1.856	.395	Not Significant
Null Decision Making	3.429	.180	Not Significant

Note: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

As majority of the sub-variables on effects of airline chatbots as a communication tool have no significant relationship to respondents' employment status, chatbot must display social cues that can aid in the formation of positive relational perceptions within the consumer when interacting with it. Chatbots aren't meant to be a one-to-one replacement for human agents, but they can be made to perform many

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common duties as well as any human worker. A chatbot can function as a virtual travel advisor by providing personalized recommendations based on the user's preferences, answering frequently asked questions (FAQs), and even receiving orders and making reservations. When a bot is in over its head, it can quickly transfer the query to a human agent for more assistance. To deal with user inquiries, you may also create an AI chatbot.

The table 17 shows the effects of airline chatbots in consumer satisfaction on pre-flight assistance services when grouped according to age shows no significant difference between relevancy of information (.121), availability (.391), convenience (.157) and accessibility (.101) since the obtained p-values were greater than 0.05 alpha level.

Table 17. Difference between the Effects of Airline Chatbots in Consumer Satisfaction on Pre-Flight Assistance Services when grouped according to Age

Effects of airline chatbots	Kruskal Wallis (x2) value	p-value	Interpretation
Credibility of Information	13.720	.003	Significant
Relevancy of Information	5.819	.121	Not Significant
Availability	3.004	.391	Not Significant
Convenience	5.215	.157	Not Significant
Accessibility	6.232	.101	Not Significant

Note: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

Data, however, reveals that age has a high influence on respondents in terms of credibility of information (.003), since most of the respondents or the consumers always looked on the right and accurate information which should be visible on the airline chatbot during their interaction. It is very essential to the travelers to look for the different information that they are interacting with since it can greatly affect the whole duration of the trip if they did not focus on the different information that chatbot is providing them. Being a system-based agent, chatbot can solve the problem of the travelers when it comes to their plan of travel. It can also affect on perceive chatbot trustworthiness of the travelers because of the legitimacy of information of chatbot providing to the travelers.

The table 18 shows the effects of airline chatbots in consumer satisfaction on pre-flight assistance services when grouped according to sex shows no significant difference of all sub-variables such as credibility of information (.221), relevancy of information (.323), availability (.386), convenience (.795) and accessibility (.115) since the obtained p-values were greater than 0.05 alpha level.

Table 18. Difference between the Effects of Airline Chatbots in Consumer Satisfaction on Pre-Flight Assistance Services when grouped according to Sex

Effects of airline chatbots	Kruskal Wallis (x2) value	p-value	Interpretation
Credibility of Information	1.565	.211	Not Significant
Relevancy of Information	.976	.323	Not Significant
Availability	.752	.386	Not Significant
Convenience	.067	.795	Not Significant
Accessibility	2.483	.115	Not Significant

Note: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

As majority of the sub-variables on effects of airline chatbots as a consumer satisfaction on pre-flight assistance services have no significant relationship to respondents' sex, to be able to provide virtual

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excellent assistance, the features of airline chatbot should emphasize the coverage of its services to cater the needs of all the airline chatbot travelers. The use of chatbot as virtual assistants to assist clients in making travel and lodging arrangements is well-known. Chatbots do not, however, provide a full range of services that cover the entirety of the arranging a holiday process. Travelers would find this challenging because they would need to download or use several systems for various objectives.

The table 19 shows the effects of airline chatbots as a consumer satisfaction on pre-flight assistance services when grouped according to employment status shows no significant difference between availability (.095), convenience (.092), and accessibility (.251) since the obtained p-values were greater than 0.05 alpha level.

Table 19. Difference between the Effects of Airline Chatbots in Consumer Satisfaction on Pre-Flight Assistance Services when grouped according to Employment Status

Effects of airline chatbots	Kruskal Wallis (x2) value	p-value	Interpretation
Credibility of Information	6.476	.039	Significant
Relevancy of Information	6.958	.031	Significant
Availability	4.699	.095	Not Significant
Convenience	4.763	.092	Not Significant
Accessibility	2.762	.251	Not Significant

Note: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

Data, however, reveals that employment status has a high influence on respondents in terms of credibility of information (.039) and relevancy of information (.031) since majority of the respondents gave consideration in making cautious choices because of their desire to travel in a comfortable manner and in accordance with the arrangements they had made. The travelers are meticulous in finding different information that they need for their travel since it can greatly affect the whole duration of their trip as planned. Travel information are crucial indicators that can greatly affect the perceive usefulness of the chatbot based on the employment status of the travelers. It can also show the intention or of such traveler in using chatbot as they are longing for credibility and relevant information that can really help them in planning their trip.

Table 20 shows the result of a significant relationship between all sub variables under the effects of airline chatbots as a communication tool and the credibility of information, wherein all sub variables having a p-value below .05, which is considered significant.

Table 20. Relationship between the Effects of Airline Chatbots as Communication Tool and Consumer Satisfaction on Pre-flight Assistance Services in terms of Credibility of Information

Credibility of Information	Rho-value	p-value	Interpretation
Automatability	.667	.000	Significant
Personalization	.650	.000	Significant
Limited Understanding	.646	.000	Significant
Lack of Emotion	.563	.000	Significant
Null Decision-Making	.622	.000	Significant

Note: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant. (Interpretation of correlation coefficient, r) +(-) 1.00 = Perfect direct (inverse) relationship; +(-) .70 to .99 = Very strong direct (inverse) relationship; +(-) .40 to +.69 = Strong direct (inverse) relationship; +(-) .30 to +.39 = Moderate direct (inverse) relationship; +(-).20 to +.29 = weak direct (inverse) relationship; +(-) .01 to +.19 = Negligible direct (inverse) relationship; 0 = No relationship [zero order correlation]

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This signifies that there is a strong direct relationship between the effects of airline chatbots as a communication tool and consumer satisfaction on pre-flight assistance services in terms of credibility of information on automatability (.667), personalization (.650), limited understanding (.646), lack of emotion (.563), and null decision-making (.622). As a result of the analysis of research conducted on chatbots for the purpose of idea evaluation indicating that trustworthiness is a significant component that may influence the perceived usefulness of the comments supplied by the chatbot. Chatbots are becoming an increasingly popular alternative to traditional methods of providing customer service. It is essential that consumers have trust that chatbots can offer the necessary assistance for them to feel comfortable using chatbots for this reason. However, there is a limited knowledge on the factors that influence the level of trust that users have in chatbots at the present time.

Table 21 illustrates the results of significant relationship between all the sub variables under the effects of airline chatbots as a communication tool and the relevancy of information, whereby all sub variables have a p-value below .05, which is recognized as significant.

This signifies that there is a strong direct relationship between the effects of airline chatbots as a communication tool and consumer satisfaction on pre-flight assistance services in terms of relevancy of information on automatability (.693), personalization (.665), limited understanding (.620), lack of emotion (.551), and null decision-making (.618). One of the important aspects of being an able to automate answers as soon as it receives the question, is the fact that the answers can be found relevant to the queries itself. Knowing the fact that it will be the basis for further questioning and information researching. It is important that a system-based AI or chatbots can analyze questions, words and pays attention. It is not because you automate, delivered in a nice way, fast replies as it feels so understandable, decides in an instant manner, it means it was a well-generated system, the relevancy of information still matter to called it a success information delivery.

Table 21. Relationship between the Effects of Airline Chatbots as Communication Tool and Consumer Satisfaction on Pre-flight Assistance Services in terms of Relevancy of Information

Relevancy of Information	Rho-value	p-value	Interpretation
Automatability	.693	.000	Significant
Personalization	.665	.000	Significant
Limited Understanding	.620	.000	Significant
Lack of Emotion	.551	.000	Significant
Null Decision-Making	.618	.000	Significant

Note: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant. (Interpretation of correlation coefficient, r) +(-) 1.00 = Perfect direct (inverse) relationship; +(-) .70 to .99 = Very strong direct (inverse) relationship; +(-) .40 to +.69 = Strong direct (inverse) relationship; +(-) .30 to +.39 = Moderate direct (inverse) relationship; +(-).20 to +.29 = weak direct (inverse) relationship; +(-) .01 to +.19 = Negligible direct (inverse) relationship; 0 = No relationship [zero order correlation]

Table 22 shows from the result that all sub variables under effects of airline chatbots as a communication tool has a significant relationship with the availability wherein all sub variables produced a p value below .05 which can be interpreted as significant.

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Table 22. Relationship between the Effects of Airline Chatbots as Communication Tool and Consumer Satisfaction on Pre-flight Assistance Services in terms of Availability

Availability	Rho-value	p-value	Interpretation
Automatability	.696	.000	Significant
Personalization	.607	.000	Significant
Limited Understanding	.624	.000	Significant
Lack of Emotion	.559	.000	Significant
Null Decision-Making	.620	.000	Significant

Note: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant. (Interpretation of correlation coefficient, r) +(-) 1.00 = Perfect direct (inverse) relationship; +(-) .70 to .99 = Very strong direct (inverse) relationship; +(-) .40 to +.69 = Strong direct (inverse) relationship; +(-) .30 to +.39 = Moderate direct (inverse) relationship; +(-).20 to +.29 = weak direct (inverse) relationship; +(-) .01 to +.19 = Negligible direct (inverse) relationship; 0 = No relationship [zero order correlation]

This signifies that there is a strong direct relationship between the effects of airline chatbots as a communication tool and consumer satisfaction on pre-flight assistance services in terms of availability on automatability which obtained a Rho-value (.696), personalization Rho-Value (.607), limited understanding Rho-Value (.624), lack of emotion Rho-Value (.559), and null decision-making Rho-Value (.620). AI is considered as one of the helpful technology instruments that provides information about the certain product/services. A fact that the information availability upon using chatbots is beneficial and proves that chatbots can provide an answer in an instant basis aligned with the understanding of the questions, how it was being perceived, and being delivered is sign that chatbots performed systematically along with its main task.

Table 23 shows the result of a significant relationship between all sub variables under the effects of airline chatbots as a communication tool and the convenience, wherein all sub variables having a p-value below .05, which is considered significant.

Table 23. Relationship between the Effects of Airline Chatbots as Communication Tool and Consumer Satisfaction on Pre-flight Assistance Services in terms of Convenience

Convenience	Rho-value	p-value	Interpretation
Automatability	.685	.000	Significant
Personalization	.637	.000	Significant
Limited Understanding	.619	.000	Significant
Lack of Emotion	.516	.000	Significant
Null Decision-Making	.594	.000	Significant

Note: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant. (Interpretation of correlation coefficient, r) +(-) 1.00 = Perfect direct (inverse) relationship; +(-) .70 to .99 = Very strong direct (inverse) relationship; +(-) .40 to +.69 = Strong direct (inverse) relationship; +(-) .30 to +.39 = Moderate direct (inverse) relationship; +(-).20 to +.29 = weak direct (inverse) relationship; +(-) .01 to +.19 = Negligible direct (inverse) relationship; 0 = No relationship [zero order correlation]

This signifies that there is a strong direct relationship between the effects of airline chatbots as a communication tool and consumer satisfaction on pre-flight assistance services in terms of convenience on automatability (.685), personalization (.637), limited understanding (.619), lack of emotion (.516), and null decision-making (.594). Searching information online is also considered a lot of works since there are many information that can be displayed. Establishing and featuring chatbots as one of the online products of an airline provides conveniency especially it was programmed to provide an answer to all the queries as soon as questions are being asked. Also, on how it was being designed adds for the fast and ease of use

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knowing that all the data in the system were inputted as understandable as it is and using international language.

Table 24 illustrates the results of significant relationship between all the sub variables under the effects of airline chatbots as a communication tool and the accessibility, whereby all sub variables have a p-value below .05, which is recognized as significant.

Table 24. Relationship between the Effects of Airline Chatbots as Communication Tool and Consumer Satisfaction on Pre-flight Assistance Services in terms of Accessibility

Convenience	Rho-value	p-value	Interpretation
Automatability	.684	.000	Significant
Personalization	.622	.000	Significant
Limited Understanding	.668	.000	Significant
Lack of Emotion	.566	.000	Significant
Null Decision-Making	.616	.000	Significant

Note: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant. (Interpretation of correlation coefficient, r) +(-) 1.00 = Perfect direct (inverse) relationship; +(-) .70 to .99 = Very strong direct (inverse) relationship; +(-) .40 to +.69 = Strong direct (inverse) relationship; +(-) .30 to +.39 = Moderate direct (inverse) relationship; +(-).20 to +.29 = weak direct (inverse) relationship; +(-) .01 to +.19 = Negligible direct (inverse) relationship; 0 = No relationship [zero order correlation]

This signifies that there is a strong direct relationship between the effects of airline chatbots as a communication tool and consumer satisfaction on pre-flight assistance services in terms of accessibility on automatability (.684), personalization (.622), limited understanding (.668), lack of emotion (.566), and null decision-making (.616). The ability to automate answers is already given with the use of chatbots and a great help to all the inquirers, how it was being personalized and what are the data or input that was being programmed in the system which help travelers to have the access on the different information they need anytime and anywhere. Having the access is one of the important factors for a great travel especially in this time of pandemic since all as usual and necessary steps to travel does change to qualify on the different safety protocols.

4. Conclusion

The main purpose of the study is to determine the effects of airline chatbot as communication tool on consumer satisfaction when it comes to the pre-flight assistance services and if it truly serves its purpose as a communication tool on the major airlines in the Philippines. The demographic profile of respondents in terms of age, sex and employment status was taken and assessed. After careful evaluation, it was determined that most of the traveler who experienced using airline chatbot are Gen Z (1996-2003), they are most likely female and employed. Majority of the respondents are satisfied on the services that airline chatbot are providing for them as a communication tool. The travelers are satisfied on the automated reply of the chatbot that can help them get an instant answer on their queries. Also, it indicates that the personalization of airline chatbots as a communication tool to the travelers was often performed during the conversation. It is one of the ways which connects the AI and the consumer during an online interaction. The travelers are pleased with the emotions by the chatbot during their interaction. The trustworthiness of the chatbot can also affect the emotions perceive by the travelers. It is programmed in the way that it can easily build relationship with the consumer, it is for example, with the use of greetings

and as well as emojis on the conversation. moreover, the consumer feels the decision making of the chatbot as right in relation on planning their trip. The chatbot clearly understand the query of the travelers. The result of the study also implies that the airline chatbot affects the consumer satisfaction on the pre-flight assistance services in terms of the credibility of information that makes the chatbot more trustworthy since the travelers are looking for credible information that will suit to their queries. When interacting with chatbot, it can provide the travelers information they needed as pure and truthful. Moreover, as perceive by the travelers, chatbot replies are very beneficial and valuable on their part. Airline chatbots were useful for consumers in terms of assisting anytime and engaging as needed. By analyzing the context of the traveler's inquiry, chatbots may provide useful responses that can help travelers plan their trip. Consumers can use chatbots to easily access all their flight-related questions and address their concerns conveniently. Furthermore, all the information needed in the pre-flight can be seen in the chatbot as it can greatly help the traveler plan and decide their next trip. In assessing the significant difference, the study reveals that there is no significant difference between the effects of airline chatbots as a communication tool when grouped according to age when it comes to limited understanding, lack of emotion, and null decision making and shows significant difference in terms of automatability and personalization. The study also reveals that when grouped according to sex, it shows that there is no significant difference between of all sub-variables such as credibility of information, relevancy of information, availability, convenience, and accessibility. The data also revealed that when grouped according to employment status, it shows is no significant difference between availability, convenience, and accessibility and shows significant difference in terms of credibility of information and relevancy of information. In assessing the significant relationship between the effects of airline chatbots as a communication tool and consumer satisfaction with pre-flight assistance services, it can be gleaned from the results of the data that there is a strong direct relationship among all sub variables. As the results shows that travelers marked their analyzation as satisfied, it only means that chatbots was helpful but needs a continuous improvement. It is reliable to conclude that airline chatbots as communication tool and consumer satisfaction have strong and significant direct relationship on how consumer was satisfied upon using airline chatbots as for their pre-flight assistance services.

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