

Exploring Users' Insights on Chatbots Experiences within Online Travel Agency (OTA)

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Abstract

Continuous technological automation through Artificial Intelligence (AI) is changing the frontline services within the hospitality and tourism industry. Chatbots is an AI based automated program featuring human-like interaction via chat or voice assistant with the customers; and it can be found in numerous service-based websites and mobile apps including Online Travel Agency (OTA). Understanding users' (or customers') chatbots experiences is critical to ensuring its' success implementation within the customer service field. Despite the growing number of hospitality and tourism firms adopting chatbots to delivering customer care, little attention has been paid towards chatbots users' reaction, particularly

from the OTA standpoint. Underpinning Technology Acceptance Model, this paper examined chatbots' antecedents covering perceived ease of use (PEOU), perceived playfulness (PP) and perceived usefulness (PU); towards users' experience and satisfaction in OTA. It was found that chatbots' perceived playfulness (PP) and perceived usefulness (PU) affect customer experience in OTA; while chatbots experience mediates the relationship between perceived playfulness (PP) and perceived usefulness (PU) towards customer satisfaction in OTA. Outcome from this study is hoped to facilitate both the academicians and practitioners whom are promoting AI within the digital business environment particularly in the hospitality and tourism services.

Keywords:

Chatbots, perceived ease of use (PEOU), perceived playfulness (PP), perceived usefulness (PU), online travel agency (OTA), experience, satisfaction

1 Introduction

Nowadays travelers are prone to using information and communication technology (ICT) during their travel, beginning with pre-trip info searches, making accommodation reservations as well as transport arrangements, and so on (Gretzel et al., 2006). Technological advancement via the integration of Artificial Intelligence (AI), robotics and other cutting-edge solutions are digitalizing business processes within the hospitality and tourism industry (Tussyadiah, 2020; Bowen & Morosan, 2018). Specifically, the use of AI through text-based conversational agent (known as chatbots) is replacing conventional customer service functions (Nica et al., 2018; Ukpabi et al., 2019). Designed as a software program that converse with users (or customers) in natural language like chats; chatbots can be found in various platforms including websites, mobile applications, and even voice assistants (Melián-González et al., 2019). Needless to say, autonomous customer service function is evolving within the hospitality and tourism industry following chatbots integration (Følstad, 2018).

Despite the growing number of service companies resorting to autonomous customer service function, many customers (or users) remain hesitant to use chatbots as they are skeptical about its service capability (Forrester, 2019). Nevertheless, Kvale et al. (2019) revealed that customer service acceptance is the key to success implementation of chatbots within customer service function.

Technology Acceptance Model (TAM) was initially created to investigate elements that influence user adoption of computer systems. Later, it was expanded to assess user acceptance criteria for a variety of information technologies (Huang & Chueh, 2020). With the rising popularity of wireless networks and mobile devices in recent years, the technological acceptance model has become a common tool for assessing user acceptance criteria for mobile applications and distant services (Huang & Chueh, 2020). Although digitally equipped customer-facing platforms are popular in many industries, some people find it challenging to use this technology. It's not an easy transition from traditional user interfaces like websites and apps to chatbots to convey information and services. There is a lack of data on customers' reaction to chatbots following the replacement of human customer service representatives, as well as how

the presence of chatbots in online social networks affects multi-party interactions (Mouchine, 2021). For such reason, it was proposed that the following three TAM antecedents [perceived ease of use (PEOU); perceived playfulness (PP); and perceived usefulness (PU)] of a Self-Service Technology (SST) will influence customers' experience, and as experience build-up; it will be able to predict the customers' expectations and satisfaction judgment (Bilgihan et al., 2016; Haung & Liao 2015; Wang et al., 2013).

According to Lubbe and Ngoma (2021), prior literature didn't comprehensively address all TAM's antecedents and its influence on chatbots experience. Although Feine et al. (2019) applied sentiment analysis to investigate the impact of a chatbots service encounter on satisfaction, and Djelassi et al. (2018) investigated the relationship between Self Service Technology experience and Self-Service Technology satisfaction, the mediating role of chatbots experiences between these TAM antecedents and chatbots satisfaction has yet to be investigated from the online travel agency (OTA) perspective.

Despite the growing body of literature on chatbots, little attention has been paid about the influence of customer's satisfaction on online travel agencies (OTAs). While similar study has exists, it was tested on a different setting. Chung et al. (2018) studied about customer satisfaction on chatbots in the setting of premium brands whereas Ashfaq (2020) accessed the impact of chatbots on consumer pleasure, brand attitude, and purchase intention in the context of e-Commerce to improve customer satisfaction. Having said that, this paper examined OTA chatbots' antecedents covering perceived ease of use (PEOU), perceived playfulness (PP) and perceived usefulness (PU); towards users' experience as well as their satisfaction.

2 Literature Review

2.1 Online Travel Agency (OTA)

The integration of online and offline channels for businesses has gotten more attention as Internet progressed. A growing number of businesses offer products or services via both channels. Shopping and banking industries for example have expanded their businesses through online channels and encouraged customers to adopt online services (Chang et al., 2018). The same is evident within the hospitality and tourism industry; with more businesses resorting to online distribution channels to expand their market via online sales (Chang et al., 2018), and better reach their customers (Lv et al., 2020). Online travel bookings can be made directly on a service provider's website (for example, reserving a hotel room on Marriott.com) or through Online Travel Agencies (OTAs), which combine the services offered by a number of travel and tourism related organizations (Talwar et al., 2020; Jasni et al., 2020). OTAs use websites and apps to sell travel and tourism related products like hotel rooms, airline tickets, taxis, and vacation packages (Rezgo, 2019). The use of OTAs by customers is a worldwide phenomenon; and it is growing in popularity around the

world (Talwar et al., 2020). Ray and Bala (2021) further indicated that OTAs draws repeat business through the quality of their websites' services.

2.2 Chatbots

Luo et al. (2019) describes chatbots as a program that employ voice commands or text chats to replicate human discussions and act as virtual assistants for users. Chatbots has become a popular marketing tool to strengthen customer's connection via digital platforms and social networks (Mouhcine, 2021). Miguel and Huertas (2022) in their studies mentioned that applications that can improve visitor experiences and create additional value are referred to as "Smart Tourism Technology" (STT) and chatbots is considered as one of the STTs. Depending on the artificial intelligence resources involved, these systems can perform activities as simple as mailing plane tickets or as complicated as providing health, financial, or retail advisory (Araujo, 2018).

Other than that, chatbots are widely used in customer service (Følstad et al., 2021). Customers who require information or wish to make a complaint can type their questions into a dialogue screen which often resembles a chat interface and receive natural language responses. The key feature of this sort of communication is that, despite the fact that the responses are created automatically; the conversation is designed to mimic a human-to-human chat. Folstad et al. (2021) also mentioned that chatbots are increasingly being applied for marketing through customer relationship management (CRM), pre and post-purchase operations, and other support services. Several studies revealed that chatbots influenced user satisfaction. Chung et al. (2018) investigated chatbots and customer satisfaction on premium brands. They discovered that utilizing chatbots increases brand satisfaction; because chatbots can engage customers and provide interactive customer assistance. From the e-commerce perspective, Holzwarth et al. (2006) as referenced in Ahsfaq et al., (2020) investigated the impact of virtual agents (or chatbots) on consumer satisfaction, product attitude, and purchase intention. Since chatbots has the potential to satisfy user's needs/desires by providing personalized information; making the shopping experience more enjoyable, they find that chatbots in online shopping leads to greater consumer "satisfaction with the retailer, a more positive attitude toward the product, and a greater purchase intention".

Hence, firms can improve customer happiness by interacting with them via chatbots. According to Abbas (2019), real estate (28 percent), tourism (16 percent), education (14 percent), healthcare and finance (both ten percent each) are the top five businesses benefiting from chatbots. However, Luo et al. (2019) revealed that despite its potential benefits, one of the most significant challenges this technology is facing is potential customer resistance. In reality, many customers are reluctant to talk to computer programs about their personal wants or purchase decisions. Many businesses adopting chatbots are torn between exposing the artificial nature of the channel to customers and risking negative consequences as a result of the technology being perceived as less knowledgeable and empathic entity (Luo et al., 2019).

2.3 Technology Acceptance Model (TAM)

TAM is a well-known model in technology adoption studies that looks into people's behavioral intentions to adopt new technology (Pillai & Sivathanu, 2020). Rafique et al. (2020) mentioned that the Theory of Reasoned Action (TRA) developed by Ajzen and Fishbein (1980) stated that an individual's behaviour is determined by his or her behavioural intention (BI), which is determined by subjective standards and attitude. Rafique et al., (2019) also revealed that Davis (1989) later extended the theory by proposing Technology Acceptance Model (TAM) which consists of two basic factors: perceived usefulness (PU) and perceived ease of use (PEOU). Huang et al. (2021) stated TAM assumes that some external variables, such as perceived usefulness (PU) and perceived ease of use (PEOU) are mediators within external variables that affect willingness to use a system, influence perceived usefulness and perceived ease of use. As a result, TAM can serve as a foundation for establishing correlations between external variables, internal beliefs, attitudes, readiness to use, and actual usage.

According to Lubbe and Ngoma (2021), perceived playfulness (PP) was extended in the TAM antecedents by Moon and Kim (2001) and this model has proven to be a reliable tool for explaining new technology acceptance, as it accurately represents user behavior across a wide range of user groups and end-user technologies. The subsequent section will discuss about 'TAM attitude' that refers to users' experience and their satisfaction on chatbots services encountered in online travel agencies (OTAs).

2.4 Chatbots Experience

According to Chan and Leung (2021), customer experience is a combination of user's perception and response following the use of a product, system, as well as service. Customer experience is commonly characterized as a dynamic and holistic, direct or indirect contact between a customer and a company that includes components such as thought, feeling, action, relationship and sensation (Sidaoui et al., 2020). Chatbots, a text-based AI conversational agent plays a significant role in delivering better customer experience (Ambawat, 2019). Chatbots enhances online consumer experience by giving the impression of real person communicating and providing information in timely manner (Gümüş & Çark, 2021). Gümüş and Çark (2021) also added that chatbots assist brands and businesses in maintaining contact with their customers while improving user experience and brand trust. Satisfaction perception is derived following customer's appraisal on chatbots experience; whether their expectations are fulfilled or not (Lubbe & Ngoma, 2021). According to Diaz (2019) and Jain et al. (2018), customers are more satisfied with chatbots delivering quality and engaging customer experiences. A positive chatbots experience will improve the service and, as a result, increasing customer's satisfaction with the technology (De Haan et al., 2018; Djelassi et al., 2018). Several researchers investigated the connection between happiness and smart tourism experiences. Lee et al. (2018) discovered that when South Korean visitors' overall pleasure were assessed, they

placed greater emphasis on what they perceive during their destination travel experiences than during their encounters with smart tourism technology (STT) services. Meanwhile, Kim and Hall (2019) evaluated the hedonic motivation adoption frameworks for virtual reality (VR) tourism and discovered that subjective wellbeing significantly impact perceived enjoyment

2.5 User Satisfaction

According to Bhattacharjee's (2001) as cited in Ashfaq, (2020), user satisfaction is the key to their continuance intention towards a technology. It is also referred as core antecedent in marketing (Brill et al., 2019), and it is crucial to attracting and maintaining long-term customers (Ashfaq et al., 2019). E-commerce is an ongoing trend in which industry players acknowledged them as part of a service-based business strategy. As a result, more customers today are making online rather than offline purchases. To be successful, online travel agencies (OTAs) must meet or exceed customers' satisfaction (Nguyen et al., 2022; Min et al., 2020), by delivering consistent quality of service (Chen et al., 2020) to avoid losing any potential businesses.

Park et al. (2019) also found that booking through apps has a positive impact on customer satisfaction; it will also increase their factor intentions. Customer satisfaction is one of the constructs that is frequently applied in research assessing system's success and effectiveness. Mkpojiogo & Hashim (2016), as cited in Lubbe & Ngoma, (2021) stated that satisfaction is an evaluation whether a product or service meets the need and desire of the customers. The importance of user satisfaction cannot be underestimated. This is because studying customer satisfaction may also reveal whether the service is enjoyable and fit with their demands (Feine et al., 2019). High level of customer satisfaction is critical for long-term success, especially in a highly competitive industry. Therefore, it should be given top priority for any companies. From the viewpoint of chatbots services, customer satisfaction is a critical factor to achieving customer loyalty and corporate success (Komalasari & Budiman, 2018). Customers will be satisfied with chatbots if they perceived the service received matched their initial expectation, hence it is likely to be applied by more in the future. Those who are open to experimenting with new technologies may also be more receptive to this new and emerging chatbots services. From the above deliberation, this study proposed the following hypotheses (depicted together with the study framework in Figure 1).

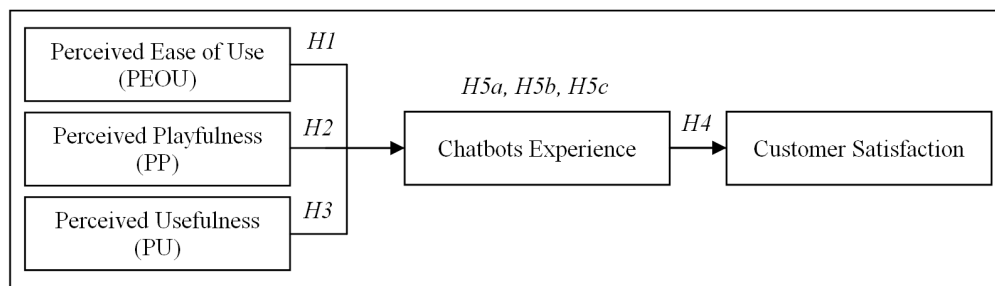


Figure 1: Study Framework and Hypotheses; adopted from Lubbe & Ngoma (2021)

Proposed hypotheses in this research are:

- H1:* There is a significant relationship between perceived ease of use and chatbots experience
- H2:* There is a significant relationship between perceived playfulness and chatbots experience
- H3:* There is a significant relationship between perceived usefulness and chatbots experience
- H4:* There is a significant relationship between chatbots experience and customer satisfaction
- H5a:* Chatbots experience mediates the relationship between perceived ease of use and customer satisfaction in OTA
- H5b:* Chatbots experience mediates the relationship between perceived playfulness and customer satisfaction in OTA
- H5c:* Chatbots experience mediates the relationship between perceived usefulness and customer satisfaction in OTA

3 Methodology

In accessing users' (or customers') acceptance, experience and satisfaction towards chatbots in OTA, a quantitative research approach using self administered survey was employed. Taking into consideration the unavailability of sampling frame (to determine the exact figure of OTAs chatbots users in Malaysia), a non-probability convenience sampling technique was applied for data collection. Adopting Roscoe (1975) rule of thumb, a sample size between 30 and up to 500 was deemed appropriate for this social science research. Respondents were given access to participate in the online survey (via Google Forms). A dual language research instrument (both in English and Bahasa Melayu) were applied to ease respondents' understanding of the subject matters. Relevant preliminary questions were included to ensure only qualified respondents participated in this study. Descriptive statistics, frequency, means score, the link between variables as well as mediation test were performed on the usable data using Statistical Packages for the Social Science (SPSS) Version 28 and Sobel Test.

4 Findings

Out of 153 respondents whom approached the survey, only 141 eligible respondents were considered in the study. Given the minimum of 138 required samples (retrieved through G*Power Sample Size calculation); the researcher then proceeded with data analysis. Frequency analysis was applied to tabulate respondents' demographic profile (refer Table 1) below; and descriptive analysis produced a summary of mean score on all studied variables (refer Table 2).

Table 1: Demographic characteristics of respondents

Demographic Characteristics		Frequency	Percent (%)
Gender	Male	40	28.4
	Female	101	71.6
Age	18 – 25 years	31	22.0
	26 – 35 years	77	54.6
	36 – 45 years	20	14.2
	46 – 55 years	10	7.1
	Above 55 years	3	2.1
Marital status	Single	50	35.5
	Married	86	61.0
	Divorced	5	3.5
Education level	High school (PMR/SPM)	16	11.3
	Undergraduate (Diploma/Degree)	103	73.1
	Postgraduate (Master/ PhD)	22	15.6
Salary	Less than RM1,000	25	17.7
	RM1,001 to RM2,000	23	16.3
	RM2,001 to 3,000	50	35.5
	RM3,001 to RM4,000	43	30.5
Total		141	100.0

Table 2: Mean Score and Standard Deviation of Items

Code	Items	Mean	SD
<u>Perceived Ease of Use</u>			
PEOU1	I find it easy to get chatbots to do what I want it to do	4.13	.735
PEOU2	My interaction with chatbots is clear and understandable	4.13	.726
PEOU3	Learning to operate chatbots is easy for me	4.25	.688
PEOU4	Overall, I find that chatbots is easy to use	4.23	.669
<u>Perceived Playfulness</u>			
PP1	When interacting with chatbots, I didn't realize the time elapsed	3.54	1.092
PP2	Chatbots usage leads to my exploration	4.04	.731
PP3	I feel happy using chatbots to complete my transactions	4.04	.706
PP4	Overall, I find using chatbots as fun	4.09	.702
<u>Perceived Usefulness</u>			
PU1	Using chatbots improves OTA transaction quality	4.09	.579
PU2	Using chatbots enables me to accomplish OTA transaction more quickly	4.13	.657
PU3	Using chatbots enables me to access a lot of information in OTA	4.08	.728
PU4	Overall, I find chatbots as useful	4.21	.685
<u>Chatbots Experience</u>			
CE1	I am experienced user of chatbots in OTA	4.07	.762
CE2	I do perceive the development of more and more chatbots in the society	4.28	.708
CE3	Has your use of chatbots led to any changes in your attitude towards	3.78	.863

	OTA and/or your relationship with OTA?		
CE4	Overall, I think that chatbots enable better customer experience of OTA	4.14	.650
<hr/>			
<u>User Satisfaction</u>			
US1	I like to use chatbots in OTA	4.10	.720
US2	I am pleased with the experience of using chatbots in OTA	4.09	.722
US3	I think using chatbots on OTA is a good idea.	4.21	.732
US4	Overall, I am satisfied with chatbots in OTA	4.17	.707

N = 141

Results for regression analysis were tabulated in Table 3 below. It was found that only two independent variables namely PP with ($\beta = 0.166$, $p < .05$) and PU ($\beta = 0.473$, $p < .05$) significantly influence the Chatbots Experience. PEOU with ($\beta = .139$, $p = .079$) didn't significantly influence the Chatbots Experience. Therefore, mediation test was unnecessary between PEOU, Customer Experience and Satisfaction. Onto another regression analysis tested, Chatbots Experience significantly influenced Customer Satisfaction with ($\beta = 0.922$, $p < .05$).

Finally, test for mediating effect was carried using Sobel mediation test approach. Output is shown in Table 3 below. Customer Experience was found to mediate the relationship between both PP and PU towards Customer Satisfaction. Following all earlier analyses, the list of proposed hypotheses was validated. It can be concluded that *H2*, *H3*, *H4*, *H5b*, *H5c* were accepted, while *H1* and *H5a* rejected.

Table 3: Mediating Effect Analysis via Sobel Test

	CE>PP>CS	CE>PU>CS
IV > Med Beta (beta)	0.166**	0.473***
Med > DV Beta	0.922***	0.922***
IV > Med SE	0.071**	0.084***
Med > DV SE	0.059***	0.059***
Sobel Test Statistic	6.90688765	6.63201062
One-Tailed Probability	0.000	0.000
Two-Tailed Probability	0.000	0.000
Result	Partial Mediation	Partial Mediation

Notes:

1. * $p < .10$, ** $p < .05$, *** $p < .01$
2. CE = Chatbots Experience, PEOU = Perceived Ease of Use, PP = Perceived Playfulness, PU = Perceived Usefulness, US = Customer Satisfaction

5 Discussion and Conclusion

Given the insignificant relationship between PEOU and chatbots experience within Malaysian setting (*H1* rejected), this study contrast earlier finding by Lubbe and Ngoma (2021) that supported the significant influence between PEOU, PP and PU and chatbots experience in OTA. Another contrary fact from similar study was that PEOU has insignificant relationship with chatbots experience. This statement however is in line with Mun et al. (2006) that PEOU may become obsolete when more future customers become familiar with the existing technology. From another standpoint, the

finding confirmed that PU is the TAM's most significant predictor from all three antecedents. Similar finding was achieved in studied by by Zarouali et al. (2018) and Kelly et al. (2022).

Output from *H4* suggested that customer satisfaction will increase when they are able use OTAs' chatbots efficiently; while encounter positive service experience with TAM's antecedents. This finding might help close a research gap in the area of human-computer interaction. The results are consistent with studies by Chen et al. (2021) on chatbots in e-retailing, which suggested that perceived intrinsic qualities of the customer experience positively increase consumer satisfaction. Customers will be encouraged to refer chatbots to others if they are satisfied and obtain benefits as well as knowledge from using it with little effort. This empirical data shows that a high level of customer satisfaction is produced when customers have positive experiences with a chatbots' usability and responsiveness.

The mediation output from *H5b* and *H5c* in this study was consistent with Domínguez-Quintero et al. (2020) that examined experience quality within the perspective of cultural heritage tourism. The study showed that existential authenticity has the highest impact on satisfaction via experience quality. Furthermore, another research focusing on chatbots' affectionate ability and provide hedonic experiences discovered that hedonic experiences explains greater variation and nuances in how customer satisfaction is affected by highly emotive expression (Draaier, 2021). Thus, it is imperative to establish both functional and exciting chatbots features that may lead to positive customer experience and satisfaction with the technology.

In conclusion, understanding customers' reaction following chatbots integration within the hospitality and tourism firms is indeed imperative. Underpinning TAM, this study successfully examined OTA chatbots' antecedents covering perceived ease of use (PEOU), perceived playfulness (PP) and perceived usefulness (PU); towards customers' experience and satisfaction. Outcome from this study brings valuable insights to both academicians and practitioners as more and more hospitality and tourism services today are evolving rapidly within the digital business environment.

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