Factors affecting the perceptions of senior citizens toward airline services technology: A case study of senior citizens in Thailand

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Presented in

The Universal Academic Cluster International Winter Conference in Hokkaido, Japan

9-11 November 2020

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Abstract

Aging society is significantly impacting service technology. This paper examines factors affecting the perceptions of senior citizens toward the service technology used by airlines. The research question is "What are the factors affecting the perceptions of senior citizens toward the service technology employed by airlines in Thailand?" Based on the data from 200 senior citizens who regularly travel by air and use the Internet in their daily routine, the results show that age and gender affect senior citizens' perception toward their self-adjustment to service technology, information searching, airline online reservation services, and online check-in process. The findings add to the body of knowledge in the area of airline consumer behavior; especially among senior citizens in Thailand. The authors discuss factors influencing the perceptions of senior's using available service technology. Recommendations for practical implementation and future research are provided.

Keywords; consumer behavior, senior citizens, airline service technology, Thailand

Introduction

A significant social structure change in the twenty-first century has been the increase in the elderly population. According to the World Health Organization (WHO, 2018), it is predicted that the number of people aged 60 years and over will increase by at least 3 percent per year. In 2017, the number of elderly people worldwide was approximately 963 million people, accounting for 13 percent of the world's population. By 2030, it is estimated there will be 1.4 billion elderly people and this number will increase to 2 billion by 2050. Thus, the service strategies employed in the airline industry need to pay more attention to this increasing number of senior customers. For example, service strategies need to take into account senior citizens' acceptance and ability to use new technology. Phang, Sutanto, Kankanhalli, Tan and Teo (2006) revealed that acceptance of new technology by senior citizens as well as the ability to use such technology was driven by their perception of its usefulness and its ease of use.

Customer perceptions of service technology is important because it will affect purchasing decisions and repetition of purchasing (Chiu, Hsu, Lai, & Chang, 2012). The growing number of senior consumers has driven organizations to provide appropriate service technology for them. Senior consumers' purchasing characteristics differ from the current trend which focues

on wirleless technology e.g., high speed internet (McCloskey, 2006). To determine their perceptions helps an organization to provide and adjust appropriate service technology to fulfill their needs and thereby enhance benefits obtained by the organization. This study aims to examine what factors affect the perceptions of senior consumers of service technology used by airlines in Thailand and their behavior in using such technology.

Literature Review

This section will review the relevant literature in (a) Technology Readiness Theory (TR) and (b) airlines service technology. The research hypotheses will be inserted into the relevant part of the literature review.

Technology Readiness Theory

Based on Technology readiness theory (TR) (Parasuraman, 2000), proposed that people intend to use new technology to accomplish their objectives in life and work. He states that there are four dimensions to technology readiness for users: optimism, innovation, discomfort and insecurity. The drivers of consumer technology readiness are optimism and innovation while the inhibitors are discomfort and insecurity (Lee, Castellanos, & Choi, 2012). Over recent years, use of e-service technology has increased and influenced the airline business (Lee & Wu, 2011). Airlines have applied service technology to balance service technology quality and service satisfaction through customer's perception of its products. Therefore, an analysis of customer acceptance of implimented technology is necessary (Lee & Wu, 2011).

The role of technology in the service industry and the number of technology-based products and services have increased. Individuals have different personalities as well as different attitudes toward the use of technology (Rogers, 2003; Erdogmus & Esen, 2011). Thus, a customer who has technology readiness will interact more openly and positively and is less likely to focus on negative aspects (Erdogmus & Esen, 2011). Technology readiness predicts the attitude, norms and perceived behavioral control of customers. It shows that a customer's personality makes a difference in the implementation process of technology. A study by Tsikriktsis (2004) showed that the four clusters of TR (optimism, innovation, discomfort and insecurity) differ in terms of demographics and aspects of technology. As airlines have developed their technology in response to customers' needs it is necessary to analyze and observe the level of technology readiness among its customers.

Individual Differences and Technology Acceptance

Individual differences play an important role in understanding perceptions and behavior in many research areas including the social sciences (Assaker, 2019; Chinyamurindi & Louw, 2010; Hong, Lui, Hahn, & Tam, 2008). However, age and gender has been treated as a demographic variable. Only a few studies examine the relationship between age and technology acceptance in a business setting (Hong et al., 2008). It is suggested that researcher should revisit the role of age and gender in technology acceptance because age and gender are the fundamental variables that influence perceptions, attitude, and performance (Assaker, 2019; Morris, Venkatesh, & Ackerman, 2005). However, the results of studies into role of age and gender in technology acceptance have been inconsistent (Assaker, 2019; Amin, Rezaei, & Tavana, 2015; Lian & Yen, 2014). Therefore, observed patterns of behavior of groups of different age and gender can build a more comprehensive understanding of these two factors.

Studies show that there is a relationship between individual differences and technology acceptance. Hong, Lui, Hahn and Tam (2008) conducted a study in Hong Kong and found that the age of participants was related to the level of technology acceptance. Factors affecting technology acceptance were different in two groups of different age. Similarly, Chinyamurindi and Louw (2010) examined gender and technology acceptance among participants in the business context in South Africa. The result showed that women had a slightly higher rating in technology acceptance than men. They noted that men were lees affected by technology acceptance. As suggested by researchers e.g., Hong et al (2008), as the number of senior citizens continues to increase, more research into the role of age and gender on technology acceptance is needed.

Following the recommendations made in previous research studies (e.g. Assaker 2019), this study has included educational background and duration of Internet use as factors affecting the pattern of senior citizens' behavior.

Airline Service Technology

Theory of marketing is concerned with the development of products and services (Levitt, 1980). Airlines develop online systems to provide service, to strengthen the security of online transactions, and to help consumers resolve any problems that occur. Airline service technology needs to consider consumer's perceptions of self-adjustment to service technology, information searching, airline online reservation services, and online check-in processes.

Self-adjustment to service technology. Consumer self-adjustment is a catalyst for the implementation of service technology. It demonstrates an alignment between the content and the potential of consumers (Wu, Chan, & Sun, 2019). Senior citizens are called on to adapt to new technology and to the demands of modern society (Roupa, Nikas, Gerasimou, Zafeiri, Giasyrani, Kazitori, & Sotiropoulou, 2010). They face the the challenge of constantly evolving technology.

Information searching. Airlines systems are expected to support consumers in searching for and identifying useful information. Vkkari (2005) recommended that providers should connect the aspects of searching to the related task of consumers. Roupa et al (2010) suggest that the main source of information for senior citizens is the Internet. Their use of the Internet has a beneficial effect and is convenient. It is an essential step for the airlines to provide them with opportunities to familiarize themselves with technology. Furthermore, understanding their difficulties will significantly improve the level of their comfort for airline information searching.

Online reservation services. Online reservation refers to any type of reservation; including for airfares, hotels, cars, etc; that is made by a consumer via a web-based booking engine (Elhaj, 2012). Consumers visit an airline website and complete the reservation tasks by themselves. This method allows them to access reservation services at any time, any place. As a result, airlines have been investing in making the process of reservations more comfortable for their consumers (Law & Leung, 2012). Elhaj (2012) recommended that it is important to take advantage of the Internet and to build up an effective relationship between the company and consumers in order to increase loyalty. The website should be easy to use, not confuse the consumers and be available 24 hrs a day. Smith (2008) suggested that senior

citizens may begin to experience difficulties with their cognitive function and as result the perceived ease of use of the airline online reservation service may be different from younger groups of consumers.

Online check-in processes. The online check-in system is widely used in the airline industry. One of its aims is to increase the use of self-service technology (Chen & Wang, 2016). The success of the online check-in process depends on the level of participation. Peacock and Kunemund (2007) reveal that the age of the customer effects the use of technology and that seniors have difficulty in using the Internet.

Based on the literature review, four hypotheses were developed.

Hypothesis 1: Senior citzens of different gender perceive airline technology differently.

Hypothesis 2: Senior citizens of different age perceive airline technology differently.

Hypothesis 3: Senior citizens with different education background perceive airline technology differently.

Hypothesis 4: The amount of time senior citizens use the internet each day affects how they perceive airline technology.

Methods

Data were collected from responses to a pen-and-pencil questionnaire completed by 200 senior citizens in Bangkok, Thailand. The participants (a) frequently travel by plane, and (b) frequently access the internet in their daily routine. Table 1 provides demographic information of the participants.

Table 1: Demographics information

		Frequency	Percent
Gender			
	Male	69	34.5
	Female	131	65.5
Age			
	60-70	74	37
	>70	126	63
Education			
	below bachelor's degree	11	5.5
	higher than bachelor's degree	189	94.5
Frequency of using internet (hours per day)			
	<1	25	12.5

	1-3	67	33.5
	4-6	75	37.5
	7-9	33	16.5
Total		**200**	**100**

Measurement

The 17-items questionnaire was developed for this study. The following steps were followed in the scale development as suggested by Hinkin (1995): (1) creating the initial items using a "deductive" approach from a review of literature (p. 969), and (2) refining the developed items by using an index of item-objective congruence (IOC) from three professors who specialize in the airline business. These processes help to refine the developed items (Rovinelli & Hambleton, 1976; Turner & Carlson, 2003). All items were measured on a 5-point Likert scale (1= strongly disagree, 5=strongly agree). There are four components as follows:

Self-adjustment with service technology. There are 5-items relating to self-adjustment with airline service technology. Example items are, 'I can adjust myself to new technology employed in the airline business', and 'I can adjust myself to the transformation of the application implied in the airline service.'

Information searching. There are 4-items relating to information searching. Example items are, 'I always search for travel information from the internet', and 'I always search for flight information through the airline's website'.

Airline online reservation. There are 5-items relating to airline online reservation. Example items are, 'I understand the online reservation system of the airline I choose', and 'I understand the steps of online reservation service used in the airline's application'.

Online check-in processes. There are 3-items relating to online check-in processes. Example items are, 'I check-in with the kiosk by myself while I travel by air', and 'Checking-in through the airline application is more comfortable for me'.

Data Analysis and Result

The reliability of measurement tools and a correlation analysis. The Cronbach's alpha of the data obtained was calculated to show a reliability coefficient, consistency, and predictability of each factor. Hair, Black, Babin, Anderson, and Tatham (2006) recommend that the value of each factor should be over 0.60 in order to show a reliable value in social

sciences. A correlation analysis was conducted to confirm the single dimension of each factor and to show the relationship among the factors as described in Table 2.

Table 2. Reliability and correlation of factors

	Mean scores	Alpha	1	2	3	4
1.Self-adjustment with service technology	3.55	.93	1			
2.Information searching	3.32	.86	.78**	1		
3.Airline online reservation	3.31	.93	.78**	.81**	1	
4.Online check-in processes	3.46	.95	.72**	.73**	.79**	1

Note: ** $p < .01$

Verification of research hypothesis. This study used independent-sample T-test to determine whether the relationship between pariticipants' characteristics is significantly related to the technology employed by airlines. The results, shown in Table 3, show that senior citizens of different gender and of different age have a significantly different perception of airline service technology. Thus, hypothesis 1 and 2 are accepted. On the other hand, senior citizens with different levels of education and amount of time using the internet per day do not have significantly different perceptions of airline service technology. Therefore, hypothesis 3 and 4 are rejected.

Table 3. Research hypothesis testing result

	Gender	Age	Education	Frequency of using internet perday
	F	*F*	*F*	*F*
Airline service technology	18.14**	11.40**	2.67	1.61

Note; n = 200; ** $p < .01$

Discussion

This discussion part is arranged according to the research questions.

What are the factors affecting the perception of senior citizens of airline service technology**?**

From the result of present study, it is evident that senior citizens of different gender and age require a different marketing strategy by airlines in Thailand. Senior citizens across gender and age will differ in their perception as to whether they can adjust themselves to airline marketing technology, search for information, make an online reservation and check-

in online (p < .01). The age of senior citizens impacts their perceptions and their confidence to learn or adapt themselves to new technology. Similarly, the results in this study confirm those of many other studies (Amin, Rezaei, and Tavana, 2015; Assakar, 2019; Hong, Lui, Hahn and Tam, 2008; Lian and Yen, 2014; Tsikriktsis, 2004) that male and female customers exibit significantly different levels of acceptance of new technology. Additionally, senior citizens are limited in deduction of all biological and mental functions. At this period of life, senior citizens constantly face with challenges of everyday technology. For that reason, they need an appropriate support and assistance to satisfactory meet with the everyday living.

Limitations and Recommendation for Future Research

The following limitations to this study should be noted: (a) quantitative research is concerned with time and place; (b) purposive sampling creates a small sampling size for this study, and; (c) there is a limited number of previous researches in Thailand on this topic.

It is recommended that a longitudinal approach should be carried out to compare differences over time with the same group of participants. In order to collect data from more participants, a longer time for data collection would be needed. Also, it would be interesting to conduct a comparative study across cultural contexts such as among senior citizens in different Asian countries. The result of such a study may explain how well senior citizens can adjust themselves to today's technology and this would enhance knowledge of consumer behavior in the airline business.

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