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Key Factors Affecting Thai Passengers' Selection of Low Cost Airlines

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Abstract

In the past few years, the global airline industry has grown dramatically, as low cost airlines have evidently gained demand and market share. In particular, low cost airlines in Thailand have increased their competitiveness rapidly and earned a significant share of the market from full service airlines. The purpose of this study is to find the key factors affecting Thai passengers' selection of low cost airlines and use this outcome as a guideline for low cost airlines in Thailand to efficiently develop marketing strategies, in order to gain a competitive advantage and ultimately achieve passenger satisfaction. In this study, 4 dimensions and 19 factors influencing airline selection, obtained from literature review, were used. A questionnaire was designed and distributed to Thai passengers, after which the AHP methodology was utilized to obtain the relative priorities of the dimensions and factors. We find that the rank of importance of the 4 dimensions is: airline corporate, service quality, flight management, and airline aircraft. The rank of the 19 factors is: price, punctuality, safety re-

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cord, reliability, responsiveness, flight availability, comfort, cleanliness, brand image, promotion and advertising, empathy, flight announcement, service supply chain, tangibles, assurance, facilities, flight compensation, alliance, and entertainment. Lastly, we provide suggestions to low cost airlines in Thailand, so that the favorable growth of these airlines can be sustained.

Keywords: Low Cost Airline (LCA), AHP

1. INTRODUCTION

Undoubtedly, transportation plays an important role in our daily lives. In particular, air transportation is already necessary in travelling whether for leisure or for business, due to its convenience, timeliness, and safety.

The airline industry is considered an important branch of air transportation that focuses on moving people and cargo from one location to another. For passenger airline industry, it can be divided into three main components: Full Service Airlines (FSAs), Low Cost Airlines (LCAs), and Charter Airlines (CAs). LCAs are airlines that differentiate themselves in the market through reduced ticket price (Civil Aviation Authority, 2006), through a variety of strategies such as fuel efficiency and careful management of revenue and yield. The LCA business model is a new business model that comes from the FSA business model (Sabre, 2010). The differences between LCA and FSA include fare structure, distribution channels, limits on service, and types of flight aircrafts and passengers. However, the LCA has been proven to be a strong competitor to the FSA. Rozenberg *et al*. (2014) showed that LCA continued to take market share from FSA. Aydemir and Haytural (2016) examined the impact of low-cost carrier Pegasus Airlines' entry on Turkish Airlines' yields in domestic and international routes. LCA entry affected domestic routes substantially more than international routes. Due to lower fares and heightened competition, the number of passengers had more than quadrupled in the last decade.

O'Connell and Williams (2005) did a passenger survey and the results showed that

passengers travelling on LCA place great importance on price. In contrast, passengers using FAS are concerned about price but will tolerate a higher fare to gain an advantage through the additional services offered by FAS. Moreover, it would seem that passengers would like to see the two airline models become ever closer.

The airline industry in Thailand has grown continuously, although it is controlled by the government's regulations and policies. Thailand is known as one of the world's top travel destinations. The annual report of AOT (2018) showed that the number of aircraft movements grew by 6.24% to 874,999 flights with 426,225 international flights and 412,774 domestic flights representing an increase of 11.29% and 1.11% respectively. The total number of passengers was 139,518,488, an increase of 7.99%. There was 80,489,531 international passengers, increased by 10.96%, while domestic passengers increased by 4.18% to 59,028,957. The total number of LCA passengers was 68,284,955, an increase of 13.68%. There was 26,259,399 LCA international passengers, increased by 22.56%, while LCA domestic passengers increased by 8.76% to 42,025,556. As such, being one of the largest countries in Asia, Thailand is among the fast growing markets globally.

As a result of the 2001 deregulation of the domestic airline industry, local LCAs are allowed to operate in the country. In December 2003, low-cost airlines began to appear in Thailand, e.g. One-Two-Go was the first LCA, rebranded as Orient Thai Airline in July 2010. Just one year later, three Thai LCAs emerged: the Solar Air, whose head office is in Bangkok and former base was at Don Mueang International Airport; Thai Air Asia, a joint venture between Air Asia (Malaysia) and Shin Corp (Thailand) that commenced business in February later on; Nok Air, the budget airline of Thai Airways that started operation in July. In May 2015, Nok Air and Singapore based Scoot began a joint venture to launch NokScoot, a low-cost medium- to long-haul airline providing commercial flights out of Don Mueang International Airport. Now, there are around 30 LCAs serving in Thailand, out of which regional LCAs comprise 10.

The data from Transportation Research Information Services (TRIS) in 2014 revealed that although the Thai economy suffered due to the worldwide economy climate and political confusion starting from October 2013, the economy recovered due to the boom of low cost airlines. In addition, LCAs in Thailand have become a popular choice for domestic trav-

el; hence this pushed demand for domestic leisure travel to increase sharply.

LCAs in Thailand dramatically increased their competitiveness, gaining significant market share from FSAs. According to the IATA 2014, Thai airlines have become more and more competitive from 2009 to 2013, in line with global trends, with 9% revenue growth of all Thai airlines, out of which 31.5% of revenue growth came from LCA while 6.9% came from FSA, proving that the LCAs have increased their market share of Thailand. The growth rate of the number of passengers who flew with LCAs was larger than that of all airlines; in 2013, the figures were 29% and 16% respectively (TRIS, 2014). Evidently, FSAs face a significant challenge as they compete with LCAs. In the LCA sector, Thai Air Asia is the biggest airline in term of the number of aircrafts in service, followed by Nok Air, Thai Lion Air, Thai Air Asia X, NokScoot, and Thai VieJet (CAPA, 2018).

Market segmentation for LCAs is different from FSAs, as the main target group is price sensitive passengers. The strategy of lower fares allows lower income customers to fly more frequently, especially for short traveler group, e.g., leisure travelers.

In 2015, the ASEAN Open Sky policy has come into force and airlines are free to set up operations within the 10 member countries. This policy is likely to create greater competition and financial challenges for local airlines, and has attracted more LCAs to come to Thailand. Therefore, with competition among airlines becoming more intense, it is increasingly important to find the key factors affecting customers' choice of LCAs.

In fact, there are many papers that discuss factors affecting passengers' selection of low cost airlines, but none investigating the factors affecting Thai passengers by AHP in particular. The main focus of this research is to investigate the key factors affecting Thai passengers' selection of low cost airlines. It is possible for passengers to consider the same factors when choosing low-cost and traditional airlines, but the priority of each factor may differ. Moreover, due to cultural and environmental factors, Thai passengers may exhibit differences from other nationalities in rationale and motivation behind low cost airline choices. This paper hopes to assist domestic and international low cost airlines in Thailand in developing marketing strategies and achieving competitive advantage.

The organization of this paper is as follows. In section 1, we introduce and discuss the importance of this study. In section 2, we review relevant papers. In section 3, we describe

the methodology and process of AHP. In section 4, we discuss the results of this study. Finally, in section 5, we draw conclusions and make suggestions.

2. LITERATURE REVIEW

2.1 Literature Discussion

Wongleedee (2017) studied customer satisfaction in the airlines industry of Thailand. The findings disclosed that low-cost airline passengers rated price, channel of purchasing, and location as highest. On the other hand, full service airlines' clients rated brand, promotion, and service in flight as highest.

Charoensettasilp and Wu (2013a) studied the attitude and needs of Thai passengers when selecting domestic low-cost airlines. They investigated demographic dimensions (gender, age, education level, monthly income, and occupation) and the service marketing mix dimensions (7P's). The results showed that the 7P dimensions, but not the demographic ones, affected customers' attitude and needs in selecting domestic LCAs, and the 7P's was as follows: place, product, physical evidence, people, process, price, and promotion. In addition, during the same year, the researchers (Charoensettasilp and Wu, 2013b) also studied Thai LCA passengers' satisfaction using the same demographic and 7P dimensions. The result showed that both categories of dimensions affected passenger satisfaction. The two most influential factors of the demographic dimensions were gender and education level, while the rank of 7P dimensions was place, product, process, people, physical evidence, price, and promotion.

Ariffin *et al*. (2010) used five service quality dimensions (caring and tangible, reliability, responsiveness, affordability, and visual attractiveness) from SERVQLAL (Parasuraman *et al*. 1988) to examine and predict passenger satisfaction for LCAs. The results revealed that caring and tangible was the only significant dimension in predicting passenger satisfaction regarding service quality. The ranking of the nine factors under this dimension was found to be: the level of knowledge of employees in responding to passenger's questions, the comfort of the airline's seat, level of communication regarding unusual circumstances, kindness of employees, flexibility of the tickets purchased, professionalism in

handling the luggage, degree of trust transmitted to the passengers, employees' overall appearance, and the behavior of fellow travelers.

Yeoh and Chan (2011) investigated the important factors under six dimensions: service attributes, service delivery, participation in service delivery, mood state, crowd, and price, which might influence customers' repeat purchase intention for Malaysian LCAs. They used semi-structured interview for data collection from 20 Malaysian leisure air travelers who had travelled on LCAs within destinations in Malaysia. The results revealed that price was the most significant factor. On time departure and arrival (under the service delivery dimension), cleanliness of cabin and washroom, and a comfortable seat during the whole journey (under the service attribute dimension), were considered the three most important factors influencing repeat purchase behavior.

Sarker *et al*. (2012) attempted to forecast the sustainability and future growth of low cost carriers. The result found was that low fare was an important factor for success and survival of LCAs, branding and customer service were important factors for sustainability, unbundled cost model and outsourcing helped LCAs tide over recessions, and alliances with networks were advantageous to LCAs in targeting international passengers travelling on domestic routes.

Hamidi *et al*. (2013) identified and prioritized the main dimensions and factors that influence travelers in the choice of domestic flight. The findings showed that all five studied dimensions affected travelers' decisions regarding airline selection, and the ranking was: flight safety, flight schedule, flight management, on-board services, and airline's company image. The rank of the 27 factors under the 5 dimensions was as follows: flight comfort, proper announcement about flight cancellations and delays, crew's ability to handle unexpected situations, lost luggage return and compensation, modernity of fleet, special services for senior citizens and people with physical disabilities, timely flights, the number of flight accidents recorded for the airline company, proper flight times, aircraft type, crew's sense of responsibility, direct and non-stop flight, easy and convenient booking, proper service in case of delay, the possibility of learning about flight schedules through Interactive Voice Resp onse (IVR), food and drink quality, seat comfort, transportation services at the departing location and destination, crew's delivery speed, the number of flights per week, loyalty

programs, crew's appearance, airline company's image, the possibility of carrying more luggage, airline company's social activities, personal interest, and in-flight entertainment.

Khuong and Uyen (2014) studied factors affecting passenger satisfaction toward Vietnamese airlines. The results pointed to eight priority factors: image, employee's service factor, service quality, baggage service, timeliness, ground service, safety, and facility, and all had strong relations with passenger's satisfaction.

Lerrthaitrakul and Panjakajornsak (2014) aimed to identify and investigate channel factors under electronic Word Of Mouth (eWOM), including one to one, one to many, and many to many channel factors that affect the consumer decision-making process in the LCA market. Data were collected from participants purchasing LCA tickets, and an online questionnaire and Regression Analysis were used to collect and analyze data. The results from this study indicated that eWOM played an important role in consumer decision-making, and the one to many and many to many channels form the two significant channel factors.

Buaphiban (2015) examined factors influencing passengers' selection of LCAs in Thailand. The nine factors in this paper were airline reputation, attitude, subjective norm, perceived behavioral control, price, service quality, airline safety, route availability and convenience, and FFP. It was found that factors like service quality, airline reputation, and subjective norms played significant roles in the selection of LCAs over full service carriers (FSCs). Moreover, there were five priority factors influencing passengers' LCA selection, namely subjective norm, perceived behavioral control, price, airline service quality, and airline reputation.

Atalik and Ozdemir (2015) investigated factors affecting the purchase decision of domestic airline passengers, and found the factors to be: price, advertising and promotion activities (advertisement, corporate image, call center, FFP, and website), operational specialists (schedule, flight connection, baggage, and punctuality), and comfort (catering, cabin technology, and shuttle).

Lin and Huang (2015) used the analytic network process (ANP) approach to study similarities and differences between potential and current customers with regards to the determinants of LCC purchase intentions. Their results showed that both customer groups considered "reliability and image" to be the important factor. Furthermore, "price and conveni-

ence" received a higher weightage from potential customers, while current customers more greatly emphasized the importance of "employee services".

Finally, we arrange the discussed papers and factors in Table 1.

Table 1 Factor Related Papers

Factor	
Brand image	Sarker et al. (2012), Hamidi et al. (2013), Khuong and Uyen (2014), Atalik and Ozdemir (2015), Lin and Huang (2015)
Safety record	Hamidi et al. (2013), Khuong and Uyen (2014), Buaphiban (2015)
Service supply chain	Charoensettasilp and Wu (2013a, b), Ariffin et al. (2010), Yeoh and Chan (2011), Sarker et al. (2012), Hamidi et al. (2013), Khuong and Uyen (2014), Buaphiban (2015), Atalik and Ozdemir (2015), Lin and Huang (2015)
Price	Charoensettasilp and Wu (2013a, b), Yeoh and Chan (2011), Buaphiban (2015), Atalik and Ozdemir (2015), Lin and Huang (2015)
Alliance	Sarker et al. (2012)
Promotion and advertising	Charoensettasilp and Wu (2013a, b), Atalik and Ozdemir (2015), Lin and Huang (2015)
Reliability	Ariffin et al. (2010), Lin and Huang (2015)
Tangibles	Ariffin et al. (2010)
Empathy	Parasuraman, Zeithaml, and Berry (1988)
Responsiveness	Ariffin et al. (2010)
Assurance	Parasuraman, Zeithaml, and Berry (1988)
Punctuality	Atalik and Ozdemir (2015), Yeoh and Chan (2011)
Flight availability	Hamidi et al. (2013)
Flight compensation	Hamidi et al. (2013)
Flight announcement	Hamidi et al. (2013)
Cleanliness	Yeoh and Chan (2011)
Comfort	Ariffin et al. (2010), Yeoh and Chan (2011), Hamidi et al. (2013), Atalik and Ozdemir (2015)
Entertainment	Hamidi et al. (2013)
Facilities	Hamidi et al. (2013)

2.2 A Hierarchical Framework of Key Factors

Based on the results of papers related to airline services, we build a hierarchy framework of the factors, which are presented in Figure 1. The definitions of dimensions and fac-

tors are presented in Table 2.

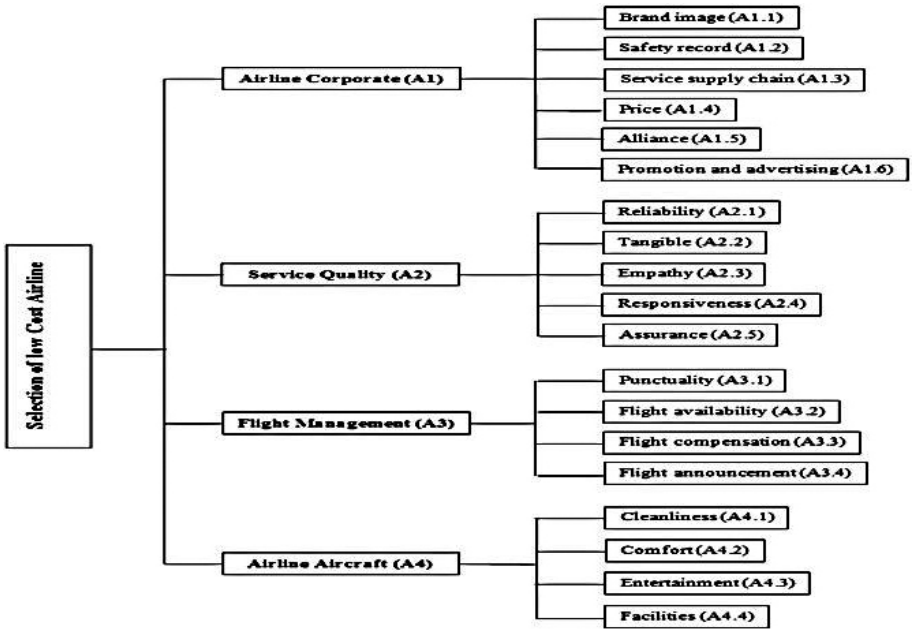

Figure 1 A Hierarchical Framework of Key Factors Affecting

Thai Passengers' Selection of LCAs

Table 2 The Definitions of Dimensions and Factors

Dimension	Factor	Definition of factors
Airline Corporate	Brand image	The objective of the brand image is to gain a competitive advantage which attracts passengers to select the brand.
	Safety record	Safety records refer to safety under weather conditions, flight crashes, terrorism, and pilot mistakes.
	Service supply chain	Service supply chain is related to how passengers are assisted before and after the actual flight, such as check-in, proper transfer, arrival service, baggage and cargo delivery.
	Price	Price is the sum of value that consumers are willing to pay or give in exchange for the benefits.
	Alliance	An alliance is two or more airlines agreeing to cooperate as a unique organization entity. Alliances may facilitate travelers making inter-airline connections. Travelers also benefit from lower prices.
	Promotion and advertising	Promotion and advertising comprise sale promotion, advertisement through various media, public relation, call centers for providing advice, websites for providing information, Frequent Flyer Program (FFP), and privileges.

Service Quality	Reliability	Reliability is the ability to perform the promised service dependably and accurately by the staff, including flight attendance, ground staff and captain.
	Tangibles	Tangibles refer to attributes of the personnel, including being well dressed, and having a good personality and neat appearance.
	Empathy	Empathy refers to service personnel having the ability to solve passenger problem, understand customer need, and facilitate the process of meeting passenger demand.
	Responsiveness	Responsiveness refers to enthusiasm as well as willingness to help passenger and listen to passenger opinions with friendliness.
	Assurance	Assurance refers to staff training in the use of tools and knowledge of service processes, and the perception that the staff is competent.
Flight Management	Punctuality	Punctuality is the absence of delayed flights.
	Flight availability	The airline provides proper flight schedule and seats, and alternative flights in the case of delay or cancellation.
	Flight compensation	Flight compensation assists passengers in the event of denied boarding, flight cancellations, or long delays of flights, including financial compensation.
	Flight announcement	Flight announcement informs passengers about an event that has happened or is going to happen. Quick announcement of flight schedules, accuracy of flight information announced when delay or cancellation occurs, and sufficient flight information during flight are key.
Airline Aircraft	Cleanliness	Cleanliness is the state of being clean and free from dirt. This includes the process of achieving and maintaining this state.
	Comfort	Comfort is a sense of physical or psychological ease, e.g. air conditioning, well arranged comfortable seats, and easy-to-use shelf space for baggage during the whole journey.
	Entertainment	Entertainment is a form of activity that holds the attention and interest of an audience, or gives pleasure and delight via providing up-to-date newspapers, magazines, and video films during the flight. It may not be free.
	Facilities	Facilities refer to equipment that is fashionable, up to date, and easy to use, for example, new aircraft models, Wi-Fi on the airplane as well as air-conditioning and light.

3. METHODOLOGY OF ANALYTIC HIERARCHY PROCESS

Analytic Hierarchy Process (AHP) is a process providing a flexible model that allows individuals or groups to shape ideas and define problems by making their own assumptions and deriving the desired solution from them. It relies on imagination, experience and knowl-

edge to structure the hierarchy of problems and on logic, intuition and experience to provide judgments. It is a process for identifying, understanding, and assessing the interactions of system as a whole. Therefore, AHP is regarded as a powerful process for tackling complex problems (Saaty, 1980). The process of selecting low cost airline is a decision process. The method of AHP is indeed appropriate for such a process.

Yoo and Choi (2006) used AHP for identifying the relative importance of factors to improve passenger security checks at airport. Their results showed that the most important factor that would need improvement to raise the performance of passenger screening would be human resources. Berrittella *et al*. (2009) ranked operating costs of low cost and full service airlines also through AHP. They found that rental, office equipment and other supplies costs showed the highest importance in the cost ranking, both for full service and low cost airlines. Lee *et al*. (2018) used an AHP framework of five dimensions and 19 factors that affected consumers' selection of OTA (online travel agents), and found that for Taiwanese consumers, the four most important factors were reservation price, authenticity, product comparison, and diversity. As for mainland consumers, the four most important factors were found to be reservation price, withdraw fee, member benefits, and interactivity.

3.1 The Process of AHP

Generally, there are five major steps in AHP.

Step 1: Define the decision problem and goal

In this stage, the general objective of the decision must be clearly defined. It can be broken down into three components:

1. Define a goal: The goal of the problem is the main objective that drives the decision problem. The goal should be single and specific to the problem, which can be examined properly by the decision makers.

2. Define criteria: The criteria (dimensions) of a decision problem are used to evaluate alternatives regarding the goal. We can go further to create sub-criteria (factors), when more differentiation is required.

3. Define an alternative: Alternatives are the different options that are weighed in the

decision. Each alternative will be judged based on these criteria to see how well they meet the goal of the problem.

With these three components, we can construct a hierarchy for the problem, where each level represents a different cut at the problem.

Step 2: Structure the hierarchy

The hierarchical model is structured from the top through the intermediate to the lowest level which usually holds a group of alternatives. Generally, the model comprises four levels from top to bottom, including the goal, criteria, sub criteria and alternatives.

Step 3: Construct the pair wise comparison matrix

By using a pair wise comparison measurement scale to weigh the importance or preference on a nine point scale number, this allows the conversion of qualitative judgments into cardinal values. Table 3 shows the measurement scale for pair wise comparison.

Table 3 A Pair Wise Comparison Measurement Scale (Saaty, 1980)

Intensity of importance	Definition	Explanation
1	Equal importance	Two activities contribute equally to the objective
3	Weak importance of one over another	Experience and judgment slightly favor one activity over another
5	Essential or strong importance	Experience and judgment strongly favor one activity over another
7	Very strong or demonstrated importance	An activity is favored very strongly over another; its dominance is demonstrated in practice
9	Absolutely importance	The favoring of one activity over another is of the highest possible order
2, 4, 6, 8	Intermediate values between adjacent scale values	

In the pair wise comparison matrix, there are values which equal 1 along the diagonal or are the reciprocals values above and below the diagonal. Assume there are n elements (criteria or sub criteria) with weights $w_1, w_2 \cdots, w_n$; *Let* a_{ij} be the number indicating the

strength of the i^{th} element compared to j^{th} element. The matrix of these numbers a_{ij} is denoted as A.

$$A = [a_{ij}] \tag{1}$$

Step 4: Compute the eigenvalue

By making pair wise comparisons between elements, we can easily construct a pair wise comparison matrix. If the vector of weights is unknown, it can be evaluated from the pair wise comparison of matrix A, generating the principal *eigenvalue* λ_{max} (for a standard scale ratio matrix $\lambda_{max} = n$, the largest eigenvalue of that matrix). We have

$$Aw = \lambda_{max} w \tag{2}$$

Step 5: Analyze the consistency and consequence weight

To maintain rational consistency when deriving priorities from pair wise comparisons, we have to measure the consistency of the judgment matrix which can be determined from the consistency ratio (C.R.). A consistency ratio C.R. ≤ 0.1 is acceptable. If the value is higher, the judgments may not be accepted and should be elicited again. The consistency ratio (C.R.) is defined as follows.

$$\text{C.R.} = \frac{\text{(C.I.)}}{\text{(R.I.)}} \tag{3}$$

C.I. is a consistency index and R.I. is a random index

C.I. measures the inconsistencies of pair wise comparisons and is calculated using

$$\text{C.I.} = \frac{\lambda_{max-n}}{(n-1)} \tag{4}$$

R.I. refers to the average random C.I. in a large number of randomly generated matrices from the Table 4 below (Saaty, 1980, 1990).

Table 4 Average Random Consistency Index (R.I. Value)

Size of matrix	1	2	3	4	5	6	7	8	9	10
R.I.	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49

4. RESULTS OF SURVEY AND DISSCUSSION

In this study, the questionnaires were distributed to both arrival and departure passengers at Don Mueang International Airport, Thailand. The questionnaire consisted of two main parts: the basic information part that collected personal information that will be used for obtaining an overview of Thai passengers; and questions for pair wise comparison, the results of which will be analyzed by AHP. The questionnaires were designed in English and Thai versions.

We handed out 40 questionnaires to Thai passengers in different flights at the arrival passenger gateway and departure passenger gateways in Don Mueang International Airport, Thailand. However, only 35 questionnaires passed the consistent test (C.R. ≤ 0.1) and could be further analyzed, resulting in an effective respond rate of 87.5%.

4.1 Personal Information of Thai Passengers

The personal information part describes the profiles of Thai passengers, the target group of this study. We asked subjects about their gender, age, highest education level, monthly income, and occupation. The demographic characteristics of Thai passengers may have an impact on their preferences among low cost airlines (Alam, 2012). The summary of Thai passengers' demographic background is shown on Table 5.

Table 5 Summary of Thai Passengers' Demographic Characteristics

Demographic characteristic	Number of subjects	Proportion
Gender		
Female	25	71.4%
Male	10	28.6%
Total	35	100%
Age		
Less than 15	0	0
15-24	7	20%
25-34	23	65.7%
35-49	5	14.3%
50-64	0	0
65 and above	0	0
Average Age 29.28		
Education level		
Lower than Bachelor degree	5	14.3%
Bachelor's degree	17	48.6%
Master's degree	13	37.1%
Doctor's degree	0	0
Monthly income		
Less than 14,000 THB	7	20%
14,000-30,000 THB	17	48.6%
30,001-60,000 THB	10	28.6%
60,001-90,000 THB	0	0
90,000 THB and above	1	2.9%
***Average Monthly income 25,676 THB**		
Occupation		
Student	10	28.6%
Government sector	4	11.4%
Private sector	17	48.6%
Others: Housewife, Retired	4	11.4%

*Excluding the person who has the highest monthly income, 90,000 THB and above.

From Table 5, it seems that young Thai people tend to travel more by low cost airline than older ones. Buaphiban (2015) also supports the idea that the most represented educational level of passengers of low cost airlines are the Bachelor's and Master's degrees.

Moreover, according to the data from BOT (Bank of Thailand, 2015), the average salary of Thai people who have an educational background below a Bachelor's degree is 9,718.21 THB, which may not be enough to travel by air. The data from National Statistic Office in Thailand (2015) indicates that the average monthly income per household is 25,403 THB. Therefore, most of the passengers in our study belong to the middle class in Thailand. They need to save money by taking LCA when they want to travel by air.

Nowadays, most Thai passengers choose air transportation instead of taking train or bus for domestic travelling because the former is more comfortable and faster, while the price is not as expensive as it used to. The main reason may be that Thai passengers are price sensitive. These types of passengers are the major market segment of LCAs. That is, the lower income group is inclined to fly with LCAs, which allows this group to travel more frequently. Moreover, most passengers who switch to LCAs are those who are sensitive to price (Tretheway and Oum, 1992).

4.2 Results of Questionnaire

One of the most important steps of the Analytical Hierarchy Process (AHP) is to calculate the global weights of dimensions and factors. In theory, the larger global weight, the more important the dimension or factor is.

Table 6 The Weights and Ranks of Dimensions and Factors

Dimension	Global weight (%)	Rank	Factor	Global weight (%)	Rank
Airline Corporate	35.73	1	Brand Image	4.85	9
			Safety Record	9.62	3
			Service Supply Chain	3.75	13
			Price	10.12	1
			Alliance	2.04	18
			Promotion & Advertising	4.36	10
Service Quality	26.50	2	Reliability	7.68	4
			Tangibles	3.64	14
			Empathy	4.32	11
			Responsiveness	7.22	5
			Assurance	3.64	15
Flight Management	22.77	3	Punctuality	9.90	2
			Flight Availability	6.06	6
			Flight Compensation	3.03	17
			Flight Announcement	3.78	12
Airline Aircraft	15.00	4	Cleanliness	5.32	8
			Comfort	5.60	7
			Entertainment	1.66	19
			Facilities	3.41	16

The Analysis of Importance of Dimensions

From Table 6, the rank of dimensions affecting Thai passengers' selection of low cost airlines is: Airline Corporate, Service Quality, Flight Management, and Airline Aircraft.

Airline Corporate

Airline corporate is the most important dimension affecting Thai passengers' LCA selection. The six factors under this dimension are price, safety record, brand image, promotion and advertising, service supply chain, and alliance.

Airline corporate concerns the airline's ability to represent and reflect a positive overall image of its performance. Airline corporate is considered as a significant criterion to Thai

low cost airline passengers because it concerns the perception and reputation of the airline. For example, Air Asia targets price-sensitive passengers while Nok Air focuses on middle class passengers. However, Charoensettasilp and Wu (2013a) find that the perception that the call center provides advice, promotion and advertising, and safety from aviation background, affect the attitude and needs of Thai passengers when selecting domestic low cost airlines. Buaphiban (2015) also finds that price and airline reputation influence Thai passengers in the selection of low cost airlines.

Service Quality

Service quality is the second most important dimension. The five factors under this dimension are: reliability, responsiveness, empathy, tangibles, and assurance.

Service quality has apparent relationships with costs, profitability, customer satisfaction, customer retention, behavioral intention, and positive word- of- mouth. It is a measure of how well the delivered service matches the customer expectation. Customers will compare and judge an entity's performance by their perceived overall service quality. Therefore, service quality influences the customer's buying judgment. The service quality of airline companies depends on their staff, including captains, flight attendances, ground staffs, and other employees in related fields. The quality of personal service is intimately connected to the relationship between passengers and service persons. Customers can gain a positive or negative impression depending on the ability and skills of staff in performing the promised service without mistake.

Airline Aircraft

Airline aircraft is the least important dimension. The four factors under this dimension are comfort, cleanliness, facilities, and entertainment.

Airline aircraft refers to everything related to the aircraft including the tangible, such as machine, engine, amusement and accommodation equipment, and the intangible, such as cleanliness and comfort.

Although this dimension is ranked last, most of Thai passengers are still concerned with the commodiousness of cabin seats since it allows them to be relaxed and comfortable.

Thais desire for comfort (Neher, 1979). Attractive and suitable physical facilities, both at the airport and on the airplane, affect Thai low cost airline passengers' satisfaction and loyalty. Charoensettasilp and Wu (2013a) find important factors regarding comfort to be the seats on board, and easy to use shelf space for baggage.

The Analysis of Importance of Factors

Via global weight analysis in Table 8, we find the four most important factors (based on the 80/20 rule) as well as the two least important factors. The four most important factors are (1) price, under airline corporate dimension, (2) punctuality, under flight management dimension, (3) safety record, under airline corporate dimension, and (4) reliability, under service quality. The two least important factors are (18) alliance, under airline corporate, and (19) entertainment, under airline aircraft, the least important factor.

Price

From the perspective of Thai passengers, the general considerations that motivate Thai passengers to make purchase decisions are price consciousness and reasonable price (Napompech, 2014). From the analysis of Thai passengers' personal data, most of them belong to the middle class in Thailand, so price is important for this price-sensitive group (Mason, 2000; Buaphiban, 2015).

Yeoh and Chan (2011) find that price is the most influential criterion for repeat purchase by Malaysian low cost airline passengers even if they expressed strong dissatisfaction towards the low service quality. This means that they value price more than other factors. Atalik and Ozdemir (2015) also claim that price is already known to be important for domestic passengers.

Punctuality

The second important factor is punctuality. Punctuality is an important factor affecting passenger satisfaction (Khuong and Uyen, 2014). However, from 2006 to 2012, on time performance was considered the largest area for progress for many low cost airline carriers, e. g., AirTran Airways, Southwest, and JetBlue, because they perceive that delayed flights will

result in a lot of complaints from passengers, and punctuality can decrease these complaints to improve customer satisfaction (Baker, 2014).

For the low cost airlines in Thailand, flight delay occurs regularly. Flight delay signifies poor service performance of low cost airlines in Thailand. However, the concept of punctuality in the airline industry has gradually developed; the most punctual low cost carrier worldwide in 2014-2015, particularly in Asia, is Thai Air Asia.

In our research, price is more important than punctuality. The main reason is that most Thai passengers are less concerned about punctuality than they are about low fares, resulting in there being still several complaints about the punctuality of low cost airlines. Moreover, Yeoh and Chan (2011) mention that on-time departure and arrival is important for passengers of Malaysian low cost carriers, and they perceive that delay is not a pleasant experience.

Safety Record

The third most important factor affecting Thai passengers' selection of low cost airlines is safety record. Airline safety is significant, since passengers may perceive that low cost carriers are less safe than traditional airlines (Mikulic & Prebezak, 2011). Chang and Hung (2013) find that the safety standard of low cost airlines is a significant concern of passengers compared to full service airlines since it can weaken the intention to select low cost carriers.

Passengers evaluate the safety record of low cost airline based on their individual perceptions of safety standards, as well as the perception of airline safety procedures and publicly available safety information (Buaphiban, 2015). Ariffin *et al*. (2010) state that safety procedure issues, in particular the communication of procedures in response to unusual circumstances, affect the satisfaction of low cost airline passengers. Low cost airlines are perceived to have lower investment in aircraft maintenance, fleet technology, and pilot competency.

Flight accidents have occurred in recent years, particularly the plane crashes of low cost airlines such as Air Asia Flight 8501 in December 2014. However, many low cost airlines have flawless safety reports and no evidence shows that low cost airlines have lower standards of safety than full service airlines.

Reliability

The fourth most important factor is reliability. Reliability of low cost airlines is mainly about gaining passenger trust regarding safeness and timeliness (Brady and Cronin, 2001). A reliable airline should have competent staff who can meet passenger needs before, during, and after the flight; in other words, the staff is able to maintain a good performance under the scheduled time without mistake, such as accurately managing airline processes, ensuring punctuality to the final destination, and sustaining safety. Low cost airlines are generally evaluated by passengers to be underperforming in terms of service reliability.

Thai passengers recognize service reliability through the staff who perform their service. The speed and accuracy of operations and timing are crucial for passenger satisfaction and loyalty to low cost airlines. In particular, the waiting time for check-in, punctuality of flights, security conditions such as baggage state, and confidence regarding safety are important factors (Ratanakomut and Kitcharoen, 2013). Charoensettasilp and Wu (2013b) claim that the overall speed of cabin crew and ground service affects the attitudes, needs and satisfaction of Thai passengers in selecting low cost airlines.

Alliance

The second least important factor is alliance. Airline alliances emerged from demand related conditions: economic globalization has created demand for intercontinental flights; and supply-related conditions: long intercontinental flights need one or more stops and thus an interline journey possibly provided by other airlines. One of the reasons low cost airlines establish alliances is to expand their successful business model to international operations with similar returns on investment (Goh and Uncles, 2003). However, no Thai low cost airline has become a member of any of the three global alliances, Star Alliance, Oneworld, and SkyTeam as of 2015. Only one full service carrier, Thai Airways, has been a member of Star Alliance since 1997.

However, in 2010, airlines in the low cost airline industry decided to cooperate together to create a low cost airline alliance. Air Asia, a low cost airline based in Malaysia, merged with Jet Star, another low cost airline based in Australia, to reduce cost by sharing expertise

and procurement procedures like the cooperation of JetBlue and Aer Lingus, the first low cost airline alliance (Jetstar, 2010). Furthermore, in January 2016, the U-Fly alliance also emerged, the first alliance of four Asian low cost airlines. Sarker *et al*. (2012) mention that alliances and mergers by network carriers are opportunities for low cost airlines. Alliances are advantageous to low cost airlines in attracting international passengers travelling on domestic routes and in increasing market share.

Entertainment

Entertainment is the least important factor. When travelling by air transportation, especially long-haul flights, the entertainment on board is considered as one of the effective factors affecting passenger purchase behavior, as it can lessen stress and nerves, as well as provide leisure. On the contrary, for low cost airlines, costs are reduced with a "no-frills" service; many free value-added in-flight services (such as catering, magazines, and entertainment during flights), which are routinely offered by full-service carriers, are replaced by optional paid services instead (Yeoh and Chan 2011; Vidović *et al*., 2013; Ratanakomut and Kitcharoen, 2013). Fourie and Lubbe (2006), in their study to identify the factors that motivate business travelers to choose between low-cost and full-service South-African airlines, in-flight entertainment is shown to be the least important factor. Buapiban (2015) also finds that among low cost passenger preferences, on board entertainment was ranked as the least impo rtant.

Hamidi *et al*. (2013) find that in-flight entertainment is the least effective factor influencing the decision-making process of Iranian air travelers in their choice of airline for domestic flights. Similarly, Thai low cost passengers will give preference to comfort over entertainment. Thanasupsin *et al*. (2010) explain that Thai passengers are concerned about the comfort and convenience of the flight more than entertainment. Furthermore, the flight time for passengers in short-medium haul flights is rather short, around three to six hours on average; since price is the most important factor to Thai passengers for low cost airline selection, they are not willing to spend money on entertainment for a short travelling time.

5. CONCLUSIONS

5.1 The Summary of Results

The global airline industry has grown rapidly in recent years. Much of this growth can be attributed to the growth of the low cost airline business model. Intense competition is present not only within the full service airline business sector, in which they have to establish their own subsidiary low cost airlines, but also within the low cost airline business sector. Price is regarded as the most important strategy as it is able to neutralize the dominance of competitors and maintain market share against rivals. However, low cost airlines may not make profits if the market is saturated with too many airlines competing on the basis of price. Thus, it is necessary for airlines to find other effective strategies to gain competitive advantages beyond price wars.

From the analysis of data, we find that the rank of dimensions is as follow: airline corporate, service quality, flight management, and airline aircraft. In addition, we find that the rank of 19 factors is price, punctuality, safety record, reliability, responsiveness, comfort, cleanliness, brand image, promotion and advertising, empathy, flight announcement, service supply chain, tangibles, assurance, facilities, flight compensation, alliance, and entertainment. Moreover, the factor of price in Charoensettasilp and Wu (2013b) ranks sixth among the 7P's, but price is the most important factor in our study, Wongleedee (2017), and O'Connell and Williams (2005). We think the reason may be that competition among Thai low cost airlines is more intense and passengers become more price sensitive.

5.2 Suggestions for Low Cost Airlines in Thailand

Due to rapid growth and intense competition, low cost airlines in Thailand should further enhance themselves so as to gain competitive advantage and become the first choice among passengers. Based on the results of this study, we propose the following suggestions for low cost airlines in Thailand:

Price

Low cost airlines in Thailand should concentrate on attractive pricing strategies, such

as the first come with lowest price, one price strategy, and period of discounted, ladder-like price that many successful Low cost airlines in Thailand have thoroughly used.

In addition, data from TAT (Tourism Authority of Thailand) and NSO (National Statistical Office of Thailand, 2015) indicate that Thai people like to make domestic journeys. This means Low cost airlines in Thailand can adopt a price strategy of letting Thai travelers control their expenditure to meet their demands. For example, airlines can offer special prices on routes to reach tourist destinations within Thailand.

Apart from local Thai citizens, foreigners, particularly East Asians such as Chinese, Malaysians, and Koreans, also have a strong preference for Thailand as a travel destination (MOTS, 2015). Therefore, airline alliances may bring benefits to Low cost airlines in Thailand, since they would increase competitive advantages in the international market by allowing for lower prices and greater variety of routes.

Punctuality

Low cost airlines in Thailand should increase the number of auxiliary aircrafts, since unscheduled maintenance reduces aircraft availability rates and results in poor punctuality performance. However, it is important to deploy them cautiously.

Addressing flight delays caused by traffic congestion requires the airlines to explore new ways of sharing air-space, as concerted efforts with other airlines, air traffic providers, or airport operators who are responsible for slot allocation. Slot allocation is the management of scheduled times of arrival or departure on a specific date at an airport as delay sensitive traffic support (Vidhyashankar *et al*., 2005).

Schedule perturbation management is designed for schedule development, especially that caused by the ground delay problem (Luo and Yu, 1998). Schaefer and Nemhauser (2006) found that crew schedules with the perturbed flight timetable can have a noticeable punctuality improvement than the original flight timetable. Schedule perturbation management not only enhances the on-time percentage which enhances passenger satisfaction, but also reduces operational cost and loss of profit due to reschedules in competitive airline markets (Yan and Yang, 1996).

Safety Record

Registering with and strictly conforming to global safety standard organizations such as the IATA Operational Safety Audit (IOSA), IATA Standard Safety Assessment (ISSA), IATA Safety Audit for Ground Operations (ISAGO), and Global Aviation Data Management (GADM), are important. These international organizations monitor whether airlines are operating to the highest global standards for safety.

Most controlled flight into terrain (CFIT) accidents happen in the approaching and landing phase and are associated with the problem of imprecise approaches. The number of CFIT accidents can be reduced by development and enhancement of the training materials guarding against runway excursion accidents.

In addition, Low cost airlines in Thailand must place great importance on possible safety issues of outsourced maintenance. After the deregulation, outsourced maintenance became more prevalent (McFadden and Worrells, 2012). Outsourced maintenance has been a tool that air carriers used in recent years to reduce costs, improve efficiency and hopefully increase profitability (Rutner and Brown, 1999). For low cost airline businesses particularly, airlines with a relatively small fleet may not have the capital or desire to establish multi-level maintenance programs. Poor outsourced maintenance, however, may endanger the safety of aircrafts and passengers. Therefore, Low cost airlines in Thailand should pay much attention to the service quality of outsourced maintenance.

Pilots not understanding the technical systems in the modern airplanes, and inadequate training, appear frequently in accident investigation reports. Educating pilots and crew with knowledge and skills in preparation for emergency situations is necessary to limit the influence of human errors on flight safety (Soekkha, 1997).

Reliability

Low cost airlines in Thailand should demonstrate commitment to service reliability to all airline employees, by holding frequent discussions with staff about reliability, importance of striving for zero service error, and other aspects related to service reliability. Low cost airlines in Thailand should motivate and direct staff toward the aim of zero service error, especially during the process of recruiting so that new staff are competent and commit-

ted to service excellence.

Airlines should establish comprehensive SOP (Standard Operating Procedure) in training programs and manuals provided to all airline staff to ensure consistency and reliability. Moreover, SOPs can also ensure that aircrafts are operated in the safest, most efficient and on-time manner.

Moreover, airlines should continuously reevaluate service quality and solicit feedback from employees to improve service quality. They should have a system in place for systemically capturing and analyzing passenger complaints about the service provided (Berry and Parasuraman, 1991).

Low cost airlines in Thailand should monitor individual employee performance in providing services and use the results in coaching, training, performance evaluation, recognition and rewards, and also identifying systemic strengths and weaknesses in customer service. This can also be used to track employee's morale and attitudes.

Airlines should also encourage, facilitate, and require teamwork and communication across functional units, such as through establishing passenger-focused inter-functional teams in charge of ensuring reliable service, fostering inter-functional cohesion by implementing formal communication systems, and providing programs to cross-train employees to help them appreciate one another's job (Berry and Parasuraman, 1991).

5.3 Research Limits

The methodology adopted in this research is AHP, a multi-criteria decision making (MCDM) method designed to assist decision-makers facing a complex problem with multiple conflicting and subjective criteria. However, AHP comes with limitations such as the assumption of independence between criteria and alternatives. If such an assumption is violated, it can lead to inconsistencies between judgments and ranking criteria. AHP is also susceptible to rank reversal, and cannot reflect the fuzziness of opinions. As such, future study should aim to address the weaknesses of AHP. The ANP methodology can be adopted in future work, but a drawback is that it makes the questionnaire more complicated and may hence result in a decrease in response rate.

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影響泰國乘客選擇廉價航空公司的關鍵因素

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摘 要

近年來，全球航空產業蓬勃成長，而廉價航空也已獲得消費者青睞並取得市占率。尤其在泰國，廉價航空迅速提升競爭力，並從全服務航空公司搶得顯著市占率。本研究目的是，找出影響泰國乘客選擇廉價航空公司的關鍵因素及其優先順序，並提出建議以幫助在泰國的廉價航空公司發展有效行銷策略，以提升其競爭優勢並增加顧客滿意度。本研究首先從文獻建構出具4個構面19個關鍵因素的層級分析架構，接著進行問卷調查。問卷調查結果顯示，4個構面的優先順序為：航空公司、服務品質、飛航管理、飛機。而19個因素的優先順序為：價格、準點、飛安紀錄、可靠度、回應性、航班可取得性、舒適性、清潔性、品牌形象、促銷和廣告、同理心、航班廣播、服務供應鏈、有行的、保證、機上設施、誤班津貼、聯盟、機上娛樂。最後，依據研究結果，本研究提出建議給在泰國的廉價航空公司，以維持廉價航空公司的適度成長。

關鍵詞：廉價航空公司、層級分析法

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