



Importance-performance analysis of low cost airline service quality assessment in Thailand

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Abstract

The aim of this study was to determine the influential factors towards airline's customer satisfaction under service quality dimensions. The Importance-Performance Analysis (IPA) technique was applied to evaluate the service quality dimensions of top three low cost airlines in Thailand namely Thai Air Asia, Nok Air, and Thai Lion Air. Questionnaires were used to collect sample data of 450 passengers who have ever used those low cost airlines for domestic flight by using of convenience sampling at the Don Mueng International Airport. Data was analyzed by using Multiple Regression Analysis and Importance Performance Analysis. Five independent variables of this study are five dimensions of service quality as tangibility, assurance, empathy, responsiveness, and reliability whereas the dependent variable is customer satisfaction. The results showed that all service quality dimensions have an effect on customer satisfaction. Overall importance and performance levels are high for all dimensions. Finally, implications of these results for practice by using IPA method can effectively identify critical airline service items to be improved, and serve as a valuable tool to assist each low cost airline's manager in developing and improving both their airline service qualities and strategies.

Keywords: importance-performance analysis, low cost airlines, airlines service quality, airlines service satisfaction

Introduction

In the past, air transportation was an expensive choice of traveling due to its high costs in Thailand. However, air transportation providers have changed their marketing strategies and been trying to lower the costs to meet consumers' demands. Nowadays, low cost airlines (LCA) became popular and started gaining market shares in the airline business. This is because LCA become strategic move of airline business as companies reduce irrelevant expenses such as crew uniform and in-flight catering so tickets can be offered at competitive price. Moreover, tickets can be sold in advance via internet so company can efficiently manage flight schedules and minimize risk of empty seats. LCA have always changed marketing strategies to survive in the business and fulfill customers' needs (Charoensettasilp and Wu, 2013) [10]. Service quality has been increasingly accepted as a key factor in differentiating and building a competitive edge in the modern airline business. Service quality is widely accepted as one of the most important factors for customers to make a decision to repurchase and it is an important factor whenever its uniqueness encourages purchase and repurchase by customers. The more customers repurchase the same products and service, the higher the probability will be that customers have loyalty to that particular brand. Positive experience from customers leads to highly satisfied customers and a willingness to repurchase or recommend the particular products and services to others customers (Techarattanas-ed, 2014) [29].

According to Edvardsson Bo (1992) [13] many executives see quality as a cornerstone or driving force for improving competitiveness, customer satisfaction and profitability. The quality development is not only to reduce costs and increase productivity but also to better satisfy customers, and

improve profitability. For the air transport industry Alamdari Fariba (1999) [1] saw that the increasing in level of competition airlines continuously seeking ways of differentiating and improving their product and services to achieve their objectives. Generally, airlines want to satisfy customers' needs and requirements, to satisfy shareholders by producing profits and to out-perform the rivals through product differentiation.

The growth rate of Thai LCA market has been significantly growing. The amount of sales in Thai LCA was increased dramatically. It is because LCA takes lower time for transportation, compared with ground travelling, but similar price influencing people select to use LCA travelling more and more. Though full service airlines currently dominate the market, LCA are growing rapidly in market share. In 2013, LCA held 46% of Thai airline market share (calculated from revenue received from domestic routes), while full service airlines held 54%. Thai Airways, a full service airline, still leads the market with the highest domestic market share at 31.6%, followed by Thai Air Asia and Nok Air, Thai LCA, at 23.2% and 22.7%. From a market share growth perspective, during 2011-2013 low cost airlines' market share growth was 9%, while full service airlines' market share growth dropped by 6% (Srisumran and Sintana bodee, 2014) [25]. Moreover, New Airport Insider (2017) reported that the domestic low cost route in Bangkok region has grown from 40% in 2011 to 67% in 2016.

The establishment of Thai LCA was begun in A.D. 2002 by the new policy of government in that year. The Freedom of the air in Thailand was granted allowing private company to be a part of this business. It causes the competition in both price and services. To meet the need of customers who are considering only using air transportation regardless of

another service, Low Cost Airline was introduced. In the very first year, Thai LCA have only 3 brands; (1) One-Two-Go Airline which was transformed from Orient Thai Airlines (2) Thai Air Asia which used to be Full-service airline (3) Nok Air which is the affiliate of Thai Airway. In 2006, One-Two-Go Airline was closed down leaving only Thai Air Asia, Nok Air, and Thai Lion Air from the lion group in Indonesia.

Since low cost airline business in Thailand grows continuously and has a great impact on Thai economy in the future, this business obviously has high competition among carriers. However, airline business is mostly concerned with services provided to customer to make them satisfied and repurchase the product again. Each airline has been trying to be lower the costs and good service in order to meet consumer's need. Hence, it is increasingly necessary to find out the influential factors in service quality which have an influence on customer satisfaction among top three LCA in Thailand as Thai Air Asia, Nok Air, and Thai Lion Air. In conclusion, this study assesses the airline service attributes quality of Thailand's legacy airlines. Applying IPA technique to measure the importance from the passengers' viewpoint and the services satisfaction they perceived from the airlines. The findings from this research can furnish beneficial information for airlines' manager to oversee their weak point and settle appropriate plan for further service improvement.

Literature Review

Service Quality

Parasuraman, Zeithaml and Berry (1988) [22] defined service quality as the ability of the organization to meet or exceed customer expectations and they developed a 22-item instrument representing the five dimensions, called SERVQUAL, for assessing customer perception of service quality in service and retailing organizations. This instrument is the most popular measure of service quality. Not only has research on this instrument been widely cited in the marketing literature, but also its use in industry has been quite widespread. It is the difference between customer expectations of service and perceived service (Zeithaml and Bitner, 2003) [31]. Perceived service quality results from comparisons by customers of expectations with their perceptions of service delivered by the suppliers. Researchers have elaborated SERVQUAL as "It is an outline of manner which comes due to the difference between customers' hopes about any service received and thinking about service being received (Parasuraman, Zeithaml and Berry, 1988) [22]. As a conventional approach, consumers' expected service quality is difference between actual performances and hopes.

The SERVQUAL model proposes that customers evaluate the quality of a service on five distinct dimensions: tangible, reliability, responsiveness, assurance, and empathy (Asubonteng, McCleary and Swan, 1996) [5]. (1) Tangibility can be defined as the appearance and quality of the tools used for physical, employee performance and communication equipment. It includes all physical products that are involved in service delivery, and even other customers. This is direct evidence that the service will be assessed to determine the respondents in selecting items. (2) Reliability can be defined as the ability to deliver the promised services with immediate, accurate and satisfying. Reliability means the firm performs the service right the

first time and honors its promises. (3) Responsiveness concerns the willingness or readiness of employees to provide the service. Responsiveness can be defined as the desire of the staff and employees to help customers, provide service with responsive, and able to handle customer complaints quickly. (4) Assurance can be defined as knowledge and courtesy of employees and their ability to convey trust and confidence. Assurance also refers to the employee's awareness and politeness and their potential to deliver faith and self-belief. (5) Empathy can be defined as the firm provides care and individualized attention to its customers. Empathy means more attention towards things individually and concern about them. Empathy can also be defined as the special attention given to each customer individually by an employee.

Moreover, Parasuraman, Zeithaml & Berry (1988) [22] suggested that customer expectations are what the customers think a service should offer rather than what might be on offer. A gap is created when the perceptions of the delivered service is not as per the expectations of the customer. This gap is addressed by identifying and implementing strategies that affect perceptions, or expectations, or both. Since service quality is an important factor for airlines, several researchers have applied service quality related theories and methods in the airline industry such as Chang and Yeh, 2002 [9]; Kaynak, Kucukemiroglu and Kara, 1994 [20]; Ostrowski, O'Brien & Gordon, 1993 [21]; Sultan and Simpson, 2000 [27]. Most of the previous airline service studies have used the SERVQUAL method to evaluate service quality (Park, Robertson and Wu, 2005) [23].

A number of studies have addressed service quality issues in the airline industry. For example Gilbert and Wong (2003) [16] developed a 26-item questionnaire incorporating reliability, assurance, facilities, employees, flight patterns, customization, and responsiveness dimensions to measure and compare the differences in passengers' expectations of the desired airline service quality. Elliott and Roach (1993) [14] used on-time performance, baggage handling, food quality, seat comfort, check-in service, and in-flight service as the criteria for evaluating airline service quality. Chang and Yeh (2002) [9] proposed a fuzzy multicriteria model to evaluate service quality of domestic passenger airlines in Taiwan. Fifteen service attributes represented by five factors (on-board comfort, airline employees, reliability of service, convenience of service, and handling of abnormal conditions) were included in customer surveys.

Relationship of Service Quality and Customer Satisfaction

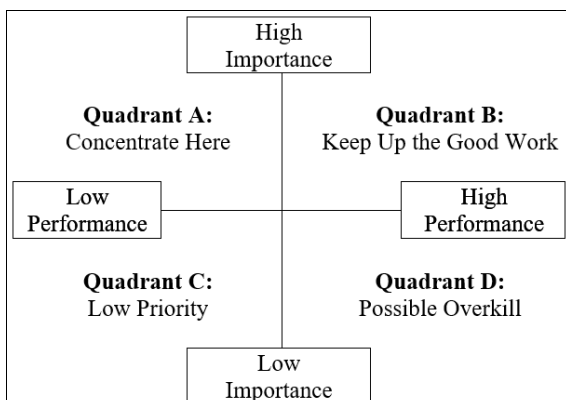
Kotler and Keller (2009) [18] defined satisfaction as: "a person's feelings of pleasure or disappointment resulting from comparing a product perceived performance (or outcome) in relation to his or her expectations". According to Hansemark and Albinsson (2004), satisfaction is an overall customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive, regarding the fulfillment of some need, goal or desire. Customer satisfaction is a term frequently used in marketing. It is a measure of how products and services supplied by a company meet or surpass expectation. Customer satisfaction is defined as "the number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services (ratings) exceeds specified goals."

(Farris, Neil, Phillip and David, 2010) [15]. Overall customer satisfaction translates to more profits for companies and market share increase. The importance of customers has been highlighted by many researchers and academicians. The principal concern of marketing is to connect with customers by building a strong customer relationship in order to meet their expectations (Biljana Angelova and Jusuf Zekiri, 2011) [7].

There are so many studies on the relationship between service quality and customer satisfaction. That leads to the result of behavioral outcomes. Generally, researchers agreed that high service quality leads to increase customer satisfaction. Consequently, the customer is willing to share the satisfaction to other people. However, some other researches specified that link between service quality, satisfaction, and firm performance is not consistent with each other (Anderson and Mittal, 2000) [3]. In another study on airline industry Steven, Dong and Dresner (2012) [26] demonstrated that the relationship between three factors of service, satisfaction and performance is non-linear and can identify the optimal point in which the company can get maximum profit at a specified customer service and satisfaction. In general, most of studies agreed that there is a proportional relationship between customer service, customer satisfaction, and business performance. When firms provide higher service quality, increase customer satisfaction and lead to better performance results, the company earns higher profits (Dresner and Xu, 1995) [12].

Importance-Performance Analysis (IPA)

There are many ways to measure customer preferences, satisfaction and perception by using various types of technique and tools. The studies allow firms to better understand their customers so they can provide the right product and services to provide their target groups. The Importance-Performance Analysis (IPA) is one of popular tools among researchers. Martilla and James (1977) [17] first proposed IPA as a useful tool to provide management insights to identify company strengths and weaknesses for improving company performance. IPA is a simple and useful method for simultaneously considering the strengths and weaknesses of a business when evaluating or defining a strategy. IPA provides management with a useful focus for developing marketing strategies for expectations related to importance and performance. Certain researchers have used IPA to study customer satisfaction to identify improvement opportunities and to guide strategic planning efforts (Wu and Shieh, 2010) [30].



Source: Martilla and James, 1977

Fig 1: Importance Performance Analysis Chart

The tool divided into four quadrants as Quadrant A: Concentrate Here indicates that the customers consider service attributes important but not satisfied with the service they perceived; Quadrant B: Keep Up the Good Work indicates that the customers consider service attributes important and they are happy with the service perceived; Quadrant C: Low Priority indicates that the customers care less about the attributes and they are not satisfied with the service; and Quadrant D: Possible Overkill indicates that the customers care less about the attributes but the service provider has good performance.

This technique is used to evaluate the gap between importance attributes and how well the company performs. The rationale for IPA is easily understood. Assume you manage a shopping and dining area in a leisure facility. Therefore, you are responsible for attributes that influence the experiences of your clients and are charged with improving performance e.g. by getting tourists to stop, eat and shop. Figure 1 is what would call an action grid for your “facility.” Assume you carry out a survey thus obtaining importance and performance information from you clients. This allows you to compute average importance and performance ratings for attributes and “grand means” across attributes. The grand means can establish an alternative axis system referred to as cross hairs.

Quadrant A

Labeled “Concentrate Here,” with high importance/low performance, indicating that the firm has been performing poorly and requires improvement to be a top priority. This area is considered as very important area for the company. In this area, customers have high expectation with the services they receive, but the company cannot provide or serve the customers to reach their expectation

Quadrant B

Labeled “Keep up the Good Work,” with high importance/high performance, which indicates that the firm has been performing well to gain competitive advantage. It’s considered as the most important one in these four areas. Since the customers have high expectation; additionally, the company can provide or serve the customers matched with their expectation.

Quadrant C

Labeled “Low Priority,” with low importance/low performance. Any attributes falling into this quadrant are non-important and pose no threat to organizations. Employees do not perceive this feature as important. This area is considered as quite less important area for the company. This is because the customers have low expectations from the company’s services

Quadrant D

Labeled “Possible Overkill,” with low importance/high performance, indicating that employees are satisfied with the performance, but the specific attribute is relatively non-important. In this situation, the leader should allocate more resources to manage attributes that reside in Quadrant B.

Although IPA is a traditional tool, it can help evaluate organizational service and provide guidance to formulate strategies, to allocate resources to the right place and the right people. IPA enables management to evaluate and identify the major strengths and weaknesses of key

organizational success factors. This technique is used to evaluate the gap between importance attributes and how well the company performs.

However, the IPA technique is widely used by researchers in various areas and has been proven an effective managerial tool (Zhang and Chow, 2004) [32]. It was used in various service sectors including training (Siniscalchi, Beale and Fortuna, 2008) [24], hotel (Chu Raymond and Choi Tat, 2000) [11], tourism and agritourism and farm development (Barbieri Carla, 2010) [6], airport access mode choice (Tam Ling, Tam Lam and Lam, 2005) [28]. Certain researchers have used IPA to study customer satisfaction to identify improvement opportunities and to guide strategic planning efforts. In applying IPA to assess the airline service quality Chen Y-F., and Chang H-Y (2005) [9] use IPA to examine airline service quality from a process perspective. Their studies were divided into two stages, those are ground services and in-flight services. Kankaew (2015) [19] applied IPA on analyzing airline service improvement strategy at Suvarnabhumi airport in Thailand. Atilgan, Akinci and Aksoy (2008) [4] measure and mapping customers' expectations and perceptions for airlines, the Sunexpress Case with The Gaps Model.

Although IPA is a traditional tool, it can help evaluate organizational service and provide guidance to formulate strategies, to allocate resources to the right place and the right people. IPA enables management to evaluate and identify the major strengths and weaknesses of key organizational success factors.

Research objectives

1. To determine the influential factors towards airline's customer satisfaction under service quality dimensions of the top three LCA in Thailand as Thai Air Asia, Nok Air, and Thai Lion Air.
2. To apply the Importance-Performance Analysis (IPA) technique to evaluate the service quality dimensions of the top three Thai LCA; Thai Air Asia, Nok Air and Thai Lion Air.

Methodology

Statistical Methods

In this paper, Multiple Regression Analysis (MRA) and Important-Performance analysis (IPA) were used in data analysis to determine the influential factors towards airline's customer satisfaction under service quality dimensions as follow.

Multiple Regression Analysis (MRA)

According to the Literature Review, the research model consists of two major variables:

1. *Dependent variable* is customers' satisfaction toward the service quality in domestic low cost airlines in Thailand among three brands: Thai Air Asia, Nok Air and Thai Lion Air,
2. *Independent variables* are five dimensions of service quality from SERVQUAL model: Tangibility, Assurance, Responsiveness, Empathy, and Reliability. As shown in Table 1.

Table 1: Variable code and Variable name

Variable code	Research Questions: Variable name
1.Tangibility	
Tangibility11	Boarding pass and system are modern
Tangibility12	The airline's seat is comfortable
Tangibility13	Restrooms are clean
Tangibility14	Cabin's air pressure is comfortable
Tangibility15	Modernity of airplane
Tangibility16	Overall Tangibility's score
2.Assurance	
Assurance21	Safety flight
Assurance22	Capacity of airplane
Assurance23	It is convenient to communicate to the airline
Assurance24	Experience and Ability of crews
Assurance25	Serving customers appropriately
Assurance26	Overall Assurance's score
3.Responsiveness	
Responsiveness31	Speed in managing the ticket
Responsiveness32	Speed in checking in at the counter
Responsiveness33	Convenience in reserving the seats
Responsiveness34	Carefulness in transmitting the luggage
Responsiveness35	Taking small time from entrance to the plane
Responsiveness36	Speed of crew's response to employee's need
Responsiveness37	Overall Responsiveness's score
4.Empathy	
Empathy41	Friendliness airline
Empathy42	Crews are always trying to explain customers with easy words
Empathy43	Crews are always trying to understand customers' need
Empathy44	Crews are always willing to serve customers
Empathy45	Overall Empathy's score
5.Reliability	
Reliability51	Airline follows the words in advertisement
Reliability52	Airline is an expert in aero business
Reliability53	Reliability of employees
Reliability54	Crews completely communicate all information to customers
Reliability55	Crews have got professional experience in service

Reliability56	Accuracy of recorded information
Reliability57	Well solving when problems occurred
Reliability58	Overall Reliability's score

Importance Performance Analysis (IPA)

This study uses the IPA model to evaluate the importance and performance of low cost airline service quality. This technique is used to evaluate the gap between importance attributes and how well the company performs. The IPA model is divided into four quadrants, with importance on the y-axis and performance on the x-axis.

In Quadrant A, called "concentrate here", combines the attributes of low performance and high importance. The priority of managers to all attributes on this quadrant is immediate performance improvement.

Quadrant B, called "keep up the good work", and represents the attributes for which the performance and importance are high. It is unnecessary to make any improvement on attributes in this quadrant. However, the company should retain their high performance since now they are the competitive advantages above competitors. Quadrant C, called "low priority", it contains elements with low importance and low performance. It is unnecessary to provide additional effort for these attributes.

Finally, Quadrant D, called "Possible Overkill", it combines attributes with high performance and a low importance score. The resources allocated to these attributes must be reduced or even reallocated for other attributes that are most important to customers. Therefore, this study uses the IPA model to evaluate the importance and performance of low cost airline service quality in this research.

Data Collection and Analysis

This research is a survey research; convenience sampling was used in collecting the sample data. A sample survey was conducted during January 2020 at the Don Mueang International Airport. The respondents were Thai passengers who had ever used those three low cost airlines for domestic flight to travel within 6 months ago. A total of 450 respondents were participated in this research. Pre-test was conducted and measures the reliability with the overall Cronbach's Alpha coefficient of this survey instrument is 0.98. The questionnaires are distributed to Thai passengers who have ever used the low cost airlines for domestic flight to travel within 6 months ago among top three LCA--- Thai Air Asia, Nok Air and Thai Lion Air. The researchers use this questionnaire to determine the important and influential factors of customer service in low cost carriers that create customer satisfaction.

In order to achieve this, the questionnaire is split into three parts so the analyzing can be more conclusive. The first part revolves around the participant demographic information;

such as, age, gender, education, and career. These questions are not as dichotomous as the following questions because some of the questions (i.e. education and career) have a near limitless variety

Part two involves questions pertaining to the passengers' general behavior; such as why they are flying, how they buy their tickets, reasons regarding ticket purchase, etc. These questions are multiple choices since there a few different directions the customers may go.

The last part (part three), is where customers' actually rate the quality of service. The questions revolve around each dimension of the SERVQUAL model; three or four questions per dimension. The participants answer using a 1-5 scale, 1 being the least satisfied and 5 being the most satisfied. Each question has two answers: the first answer regards the customers' importance and the second measures their performance.

For the stage of analysis, we examine the response across the attributes to assess customers' perceptions of service quality and the relative importance assigned by respondents to each attribute. This study is focusing on 27 independent variables under each dimension of service quality from SERVQUAL model: Tangibility, Assurance, Responsiveness, Empathy, and Reliability. Meanwhile, the focused dependent variable is Customer Satisfaction. Multiple regression analysis was used to determine the relationship. After applying multiple regression, we were able to determine the variables under each dimension of service quality that had effect on the customer satisfaction for each low cost airline. The mean values for overall importance and overall performance were used to split the axes, similar to the suggestion by Martilla and James (1977)^[17]. In order to construct the Importance Performance Analysis (IPA) charts, we based each axes of the chart on the means for overall importance and performance of the attributes consisted in each dimension of service quality varying by the brand of low cost airline. We then plot each significant attributes on their corresponding IPA chart which is further discussed in the results path.

Results

Demographic Factors of Respondents

This section is a descriptive statistics, which is concerned about statistical study of populations, Table 2 shown in term of frequency and percentage of demographic information: gender, age, income and occupation. All of the demographic information will be presented and classified in order to see number of respondents clearly.

Table 2: Number of Respondents and Percentage of Demographic information Classified by Airline

Gender	Thai Air Asia	Nok Air	Thai Lion Air	Total
Female	99 (22.0%)	105 (22.3%)	102 (22.7%)	306 (68.0%)
Male	51 (11.3%)	45 (10.0%)	48 (10.7%)	144 (32.0%)
Income (Baht per month)	Thai Air Asia	Nok Air	Thai Lion Air	Total
<15,000	61 (13.6%)	46 (10.2%)	59 (13.1%)	166 (36.9%)
15,001-30,000	52 (11.6%)	55 (12.2%)	50 (11.1%)	157 (34.9%)
30,001-45,000	12 (2.7%)	23 (5.1%)	22 (4.9%)	57 (12.7%)
45,001-60,000	19 (4.2%)	19 (4.2%)	11 (2.4%)	49 (10.8%)
> 60,000	6 (1.3%)	7 (1.6%)	8 (1.8%)	21 (4.7%)
Age (Years)	Thai Air Asia	Nok Air	Thai Lion Air	Total

18-25	59 (13.1%)	53 (11.8%)	61 (13.6%)	173 (38.4%)
26-35	35 (7.8%)	37 (8.2%)	40 (8.9%)	112 (24.9%)
36-45	28 (6.2%)	36 (8.0%)	28 (6.2%)	92 (20.4%)
46-60	28 (6.2%)	24 (5.3%)	21 (4.7%)	73 (16.2%)
Occupation	Thai Air Asia	Nok Air	Thai Lion Air	Total
Government Officer	52 (11.6%)	44 (9.8%)	53 (11.8%)	149 (33.1%)
Student	45 (10.0%)	46 (10.2%)	55 (12.2%)	145 (32.4%)
Private employee	30 (6.7%)	20 (4.4%)	14 (3.1%)	64 (14.2%)
Entrepreneur/Business owner	13 (2.9%)	28 (6.2%)	21 (4.7%)	62 (13.8%)
Freelance	7 (1.6%)	8 (1.8%)	4 (0.9%)	19 (4.2%)
Others	3 (0.7%)	4 (0.9%)	3 (0.7%)	10 (2.2%)
Total	150 (33.3%)	150 (33.3%)	150 (33.3%)	450 (100.0%)

Difference in Importance and Performance of the dimensions of service quality

From an examination of Table 3, it shows that the

expectation means for all attributes were higher than the performance means.

Table 3: Mean difference in Importance (I) and Performance (P) Attributes of Service Quality Dimensions

Service Quality Dimensions	Mean		I – P
	I	P	
Tangibility			
Boarding pass and system are modern	3.92	3.86	0.06
The airline’s seat is comfortable	3.91	3.50	0.41
Restrooms are clean	4.07	3.80	0.27
Cabin’s air pressure is comfortable	4.15	3.80	0.35
Modernity of airplane	4.12	3.82	0.30
Mean	4.03	3.75	0.27
Assurance			
Safety flight	4.36	4.04	0.32
Capacity of airplane	4.27	3.95	0.32
It is convenient to communicate to the airline	4.25	3.96	0.29
Experience and Ability of crews	4.26	3.98	0.28
Serving customers appropriately	4.29	4.00	0.29
Mean	4.28	3.98	0.30
Responsiveness			
Speed in managing the ticket	4.35	3.93	0.42
Speed in checking in at the counter	4.29	3.69	0.60
Convenience in reserving the seats	4.26	3.71	0.55
Carefulness in transmitting the luggage	4.27	3.42	0.85
Taking small time from entrance to the plane	4.16	3.60	0.56
Speed of crew’s response to employee’s need	4.21	3.61	0.60
Mean	4.25	3.66	0.59
Empathy			
Friendliness airline	4.28	3.76	0.52
Crews are always trying to explain customers with easy words	4.33	3.80	0.53
Crews are always trying to understand customers’ need	4.19	3.89	0.30
Crews are always willing to serve customers	4.28	3.96	0.32
Mean	4.27	3.85	0.41
Reliability			
Airline follows the words in advertisement	4.21	3.89	0.32
Airline is an expert in aero business	4.16	3.96	0.20
Reliability of employees	4.17	3.94	0.23
Crews completely communicate all information to customers	4.21	3.91	0.30
Crews have got professional experience in service	4.20	3.95	0.25
Accuracy of recorded information	4.22	3.97	0.25
Well solving when problems occurred	4.24	3.63	0.61
Mean	4.20	3.89	0.30
Grand mean	4.20	3.82	0.37

This reflects the existence of a service quality gap. In the dimension of tangibility, airline’s seat is being comfortable has the highest mean difference which means customers are least satisfied with this attribute. Boarding pass and system being modern has the lowest mean difference meaning customers are most satisfied with this attribute. In the dimension of assurance, Capacity of airplane and Capacity of airplane have the highest mean difference which

means customers are least satisfied with these attributes. Experience and Ability of crews has the lowest mean difference meaning customers are most satisfied with this attribute. In the dimension of responsiveness, Carefulness in transmitting the luggage has the highest mean difference which means customers are least satisfied with this attribute. Speed in managing the ticket has the lowest mean difference

meaning customers are most satisfied with this attribute. In the dimension of empathy, Crews are always trying to explain customers with easy words has the highest mean difference which means customers are least satisfied with this attribute. Crews are always trying to understand customers' need has the lowest mean difference meaning customers are most satisfied with this attribute. In the dimension of reliability, well solving when problems occurred has the highest mean difference which means customers are least satisfied with this attribute. Airline is an expert in aero business has the lowest mean difference

meaning customers are most satisfied with this attribute.

Results of Multiple Regression Analysis and Importance Performance Analysis

By using the multiple regression analysis and importance performance analysis to determine the influential factors towards airline's customer satisfaction under service quality dimensions of the top three LCA in Thailand as Thai Air Asia, Nok Air, and Thai Lion Air. The results for each airline shown in Table 4 to Table 6.

Table 4: Model summary of Thai Air Asia ordered by standardized coefficient

Dimension	Variable name	Standardized Coefficient	R-square	Quadrant
Assurance21	Safety flight	0.427***	0.319	D
Assurance24	Experience and Ability of crews	0.424***	0.319	C
Responsiveness35	Taking small time from entrance to the plane	0.352***	0.124	C
Empathy44	Crews are always willing to serve customers	0.334***	0.176	C
Reliability55	Crews have got professional experience in service	0.316***	0.350	D
Tangibility12	The airline's seat is comfortable	0.293***	0.154	C
Assurance22	Capacity of airplane	-0.258**	0.319	C
Reliability57	Well solving when problems occurred	0.205**	0.350	C
Reliability51	Airline follows the words in advertisement	0.194**	0.350	C
Tangibility11	Boarding pass and system are modern	0.170**	0.154	D
Empathy41	Friendliness airline	0.152*	0.176	D

Remark: *** Significant at a significance level of 0.01 (2-tailed)
 ** Significant at a significance level of 0.05 (2-tailed)
 * Significant at a significance level of 0.10 (2-tailed)

Table 4 revealed that seven attributes of five dimensions fall in the "Lower priority" of quadrant C which has low importance and low satisfaction (performance). Any attributes falling into this quadrant are non-important to customers and do not pose a threat to the airline. These attributes are "Experience and ability of crews", "Taking small time from entrance to the plane", "Crews are always willing to serve customers", "Airline seat being comfortable", "Capacity of airplane", "Well solving when

problems occurred", and "Airline follows the words in advertisement". Moreover, IPA map revealed that four attributes of five dimensions fall in the "Possible overkill" of quadrant D which has low importance, but where performance is relatively high. These attribute are "Safety of the flights", "Crews have got professional experience in service", "Boarding pass and system being modern", and "Friendliness airline".

Table 5: Model summary of Nok Air ordered by standardized coefficient

Dimension	Variable name	Standardized Coefficient	R-square	Quadrant
Tangibility11	Boarding pass and system are modern	0.433***	0.245	D
Empathy43	Crews are always trying to understand customers' need	0.384***	0.200	D
Reliability51	Airline follows the words in advertisement	0.313***	0.240	A
Assurance25	Serving customers appropriately	0.300***	0.163	B
Responsiveness35	Taking small time from entrance to the plane	0.273***	0.204	B
Reliability54	Crews completely communicate all information to customers	0.261***	0.240	A
Empathy44	Crews are always willing to serve customers	0.199**	0.200	B
Assurance23	It is convenient to communicate to the airline	0.176**	0.163	B
Responsiveness33	Convenience in reserving the seats	0.166**	0.204	B
Tangibility14	Cabin's air pressure is comfortable	0.160*	0.245	B
Empathy42	Crews are always trying to explain customers with easy words	-0.145*	0.200	B
Responsiveness31	Speed in managing the ticket	0.141*	0.204	B

Remark: *** Significant at a significance level of 0.01 (2-tailed)
 ** Significant at a significance level of 0.05 (2-tailed)
 * Significant at a significance level of 0.10 (2-tailed)

According to the Table 5, there are two attributes of five dimensions fall in "Concentrate here" region of quadrant which has low performance but high importance. It shows that customers have significantly expectation on these attributes while the company still does not serve them well. These attributes are "Airline follows the words in advertisement", and "Crews completely communicate all information to customers".

The results reveal that eight attributes of five dimensions located in quadrant B "Keep up the good work". These attributes are "Serving customers appropriately", "Taking small time from entrance to the plane", "Crews are always willing to serve customers", "It is convenient to communicate to the airline", "Convenience in reserving the seats", "Cabin's air pressure is comfortable", "Crews are always trying to explain customers with easy words", and

“Speed in managing the ticket”.

Also, in quadrant D “Possible overkill” region consist of two attributes from five dimensions. The company can provide customers good services in these attributes but in

customers’ expectation, they do not really give much attention on these services. These attributes are “Boarding pass and system are modern”, and “Crews are always trying to understand customers’ need”.

Table 6: Model summary of Thai Lion Air ordered by standardized coefficient

Dimension	Variable name	Standardized Coefficient	R-square	Quadrant
Empathy44	Crews are always willing to serve customers	0.522***	0.273	B
Tangibility12	The airline’s seat is comfortable	0.453***	0.206	C
Responsiveness34	Carefulness in transmitting the luggage	0.344***	0.234	A
Reliability55	Crews have got professional experience in service	0.341***	0.312	A
Reliability51	Airline follows the words in advertisement	0.330***	0.312	B
Assurance25	Serving customers appropriately	0.312***	0.283	A
Assurance21	Safety flight	0.310***	0.283	B
Responsiveness36	Speed of crew’s response to employee’s need	0.155**	0.234	A
Responsiveness31	Speed in managing the ticket	0.154*	0.234	B

Remark: *** Significant at a significance level of 0.01 (2-tailed)

** Significant at a significance level of 0.05 (2-tailed)

* Significant at a significance level of 0.10 (2-tailed)

As a result of Table 6, there are four attributes under quadrant A “Concentrate here” region. Any attributes which are under this region can be characterized as high importance but low performance attributes. They are valued by customers expected to be served well though the company cannot favour them propitiously. These attribute are “Carefulness in transmitting the luggage”, “Crews have got professional experience in service”, “Serving customers appropriately”, and “Speed of crew’s response to employee’s need”.

The results reveal that, in quadrant B “Keep up the good work” region consist of four attributes of five dimensions which are “Crews are always willing to serve customers”, “Airline follows the words in advertisement”, “Safety flight”, and “Speed in managing the ticket”.

However, in quadrant C “Low priority”, the company has only one attribute of five dimension, “The airline’s seat is comfortable”, which are low important and has low performance.

Conclusions and Recommendations

This section will provide conclusions and the direction to improve the service quality by each low cost airline as follow.

For Thai Air Asia

The results revealed that seven attributes of five dimensions fall in the quadrant C: Lower priority which has low importance and low satisfaction (performance). Any attributes falling into this quadrant are non-important to customers and do not pose a threat to the airline. Thus, Thai Air Asia should only maintain the resources and service quality that concern with the comfortable airline seat, capacity of airplane, experience and ability of crews in service, short time from entrance to the plane, and problems solving quickly.

Moreover, IPA map revealed that four attributes of five dimensions fall in the quadrant D: Possible overkill which has low importance, but where performance is relatively high. Any attributes falling into this quadrant indicate that their service quality was exceeding customer needs. These attributes are boarding pass system being modern, safety of the flights, and crew’s willingness to serve. Thai Air Asia should remain the level of service quality in these attributes in the same level because Thai Air Asia’s service quality

exceeds the customer needs. Thus, Thai Air Asia should consider present efforts as being unnecessary.

For Nok Air

There are two attributes of five dimensions fall in quadrant A: Concentrate here which has low performance but high importance. It shows that customers have significantly expectation on these attributes while the company still does not serve them well. These attributes are airline words in advertisement and communicate to customers. Nok Air should immediately improve these attributes to satisfy customers increasing sales.

Additionally, the result reveals that eight attributes of five dimensions located in quadrant B: Keep up the good work. These attributes are cabin’s air pressure, convenient to communicate to the airline, serving customers appropriately, taking time from entrance to the plane, convenience in reserving the seats, speed in managing the ticket, explaining with easy words, and crews are willing to serve customers. Any attributes under quadrant B are important to customers’ notion besides the brand can perform well. Therefore, Nok Air should maintain the performance of these attributes in high standard sustaining the satisfaction of customer.

Also, in quadrant D: Possible overkill consists of three attributes from five dimensions. The company can provide customers good services in these attributes but in customers’ expectation, they do not really give much attention on these services. These attributes are boarding pass system, airline’s seats is comfortable, and understand customers’ need. Even though the expectation of customers in these attributes is not high, the company can create advantages from these strengths by advertisement. Nok Air should advertise more informative advertising increasing the awareness of customers making them feel that these attributes are important. As a result, these strengths will be our competitiveness above customer.

Additionally, the result reveals that eight attributes of five dimensions located in quadrant B: Keep up the good work. These attributes are cabin’s air pressure, convenient to communicate to the airline, serving customers appropriately, taking time from entrance to the plane, convenience in reserving the seats, speed in managing the ticket, explaining with easy words, and crews are willing to serve customers. Any attributes under quadrant B are important to customers’ notion besides the brand can perform well. Therefore, Nok

Air should maintain the performance of these attributes in high standard sustaining the satisfaction of customer. Also, in quadrant D: Possible overkill consists of three attributes from five dimensions. The company can provide customers good services in these attributes but in customers' expectation, they do not really give much attention on these services. These attributes are boarding pass system, airline's seats is comfortable, and understand customers' need. Even though the expectation of customers in these attributes is not high, the company can create advantages from these strengths by advertisement. Nok Air should advertise more informative advertising increasing the awareness of customers making them feel that these attributes are important. As a result, these strengths will be our competitiveness above customers since we can perform well and they are preferred by customers.

For Thai Lion Air

There are four attributes under quadrant A: Concentrate here. Any attributes which are under this region can be characterized as high importance but low performance attributes. They are valued by customers expected to be served well though the company cannot favour them propitiously. These attributes are serving customers appropriately, carefulness in transmitting the luggage, speed of crew's response to employee's need, and crews have got professional experience in service. Therefore, Thai Lion Air needs to enhance their service instantaneously and significantly fitting customers' expectation increasing the profits.

In addition to the result of Thai Lion Air IPA table, in quadrant B: Keep up the good work consist of four attributes of five dimensions which are safety flight, speed in managing the ticket, crews are always willing to serve customers, and airline follows the words in advertisement. These attributes are required by customers while air traveling and professionally, they are already discharged attentively. Therefore, Thai Lion Air should prolong the service performance on this sophisticated level preserving customer satisfaction.

However, in quadrant C: Low priority, the company has only one attribute of five dimension as the airline's seat is comfortable which are low important and has low performance. It is necessary to maintain resources in this part because customers do not give any attention on this attribute.

This research can be of benefit to other airline companies that are planning on venturing into the low cost airlines business. They can use this research as an insight into the current status of these competing low cost airline brands; Thai Air Asia, Nok Air and Thai Lion Air in terms of their service quality.

They can also gather insight on consumers both demographic and inferential information which can be applied to their marketing plans. For future researchers, it would be interesting to determine other dimensions of service quality besides the five used in this research which may have impact on customer satisfaction.

Acknowledgements

The authors acknowledge the helpful comments of referees. This work was partially supported by King Mongkut's Institute of Technology Lardkrabang, Thailand, we are very appreciative.

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